

McKinsey on Payments

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A number of countries are planning upgrades to their payments infrastructures. McKinsey argues that these systems need to be better, not just faster, than those they are replacing. The path forward starts with a comprehensive look at use cases and design options.



Transforming national payments systems

As the digital age drives demand for immediate services and instant information, many countries are working to modernize their payments systems. These efforts are often led by governments with assistance from the private sector; participants may include central banks, bank associations, national operators and networks. The focus is usually on making payments faster, but the truth is that a modern payments system should be more than fast, it should be better. Based on conversations with policymakers and infrastructure operators, McKinsey has developed a six-step framework for making a national payments system more efficient and effective.

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Payments system initiatives around the world

Countries across the globe are working toward building faster, more efficient, more effective payments architectures (Exhibit 1, page 24). These architectures must not only meet end-users' needs but also provide the flexibility to adapt to future developments in payments.

High-profile initiatives are under way in the United Kingdom and Australia, while lesser-known but equally intense efforts to modernize and compete have been launched in countries including Thailand, Turkey, Colombia and Bahrain. In the UK the focus is on improving the speed of payments; in the U.S. and some other countries, the entire payments system is being optimized—a

comprehensive approach in which speed is just one variable. In Thailand and other countries, payments systems are being upgraded as a means to increase the banked populations, while also reducing physical cash transactions. While the rationale may differ from country to country, the global trend toward improving payments systems and architectures on a national scale is clearly growing.

Each national effort to improve payments systems has its particular motivations and attributes, but some commonalities have emerged:

- Several efforts have focused on expediting the availability of funds to end users and the real-time confirmation of good funds.

Exhibit 1

Payments infrastructure initiatives are being driven by different players in different countries



Source: McKinsey Payments Practice

- As new sources of value are identified, new users enter into the improved system.
- Countries are adopting real-time or near-real-time clearing systems, but not real-time settlement systems (see sidebar, page 28).
- The ability to capture expanded remittance data is a critical feature of any modern system.
- Privacy features and account-masking are being integrated into payments systems worldwide.

Better, not just faster: Focusing on use cases

Many national initiatives focus on making payments faster, but experience shows that payments improvement programs must yield

more than speed alone to make a sufficiently attractive business case. To profitably implement a new or upgraded payments system, planners must identify and apply use cases—interactions between users and the system—that demonstrate a clear likelihood that end users will adopt and recognize the value of the improved or new system. For example, many countries are emphasizing faster person-to-person (P2P) payments as their predominant use case, while others are focusing on facilitating electronic business-to-business (B2B) transactions and electronic-invoicing (e-invoicing). Some of the most effective use cases will be discussed later in this article.

The selected use cases will shape design options for the payments architecture and its

related business case. Design options range widely; for example, one option might be to leverage an existing system by adding a new messaging layer to it, while another might be to build an entirely new payments system or a new payments infrastructure.

Once a set of design options has been identified, the improved features and functionalities must be clearly articulated to the payments industry. From these recommendations, a framework can be proposed for transforming the payments infrastructure on a national scale.

Since accelerating payments speed does not by itself make an adequate case for a modernized payments system, projects must identify the best use cases, explain their rationale and estimate costs.

Six steps to transforming a payments infrastructure

The appropriate program for modernizing a national payments infrastructure will vary from country to country, depending on existing conditions, current capabilities and the desired end state. On a fundamental level, however, a payments system transformation involves six sequential steps:

Step 1: Identify use cases that will benefit from an enhanced payments system, and establish critical end-user features and functionalities. The infrastructure's design should take into account lessons from other countries' payments initiatives and input from industry and internal reviews.

Step 2: Develop design options. The business and technical implications of each option should be clearly delineated as part of this step. Design options may include upgrading the existing system, creating a new system or combining new and existing system components.

Step 3: Build the technical and business requirements for each design option. In this step, the list of features and functionality of each design option is refined, the business and technical requirements are vetted, and process maps are plotted for the flow and timing of information. This step can be arduous, but it is the only way to decide whether to enhance existing platforms, create a new platform, or combine new and existing platforms.

Step 4: Develop business cases for each design option, and conduct scenario modeling. The business cases should include direct and indirect revenue models for use cases, cost models, and design option scenarios. Based on these analyses, the design options can be prioritized, with supporting rationales. A thorough business case must take into account such questions as: Who is willing to pay for each component of the system? How much will they have to pay? How can adoption of the new payments offerings best be encouraged?

Step 5: Determine the impact on the market and identify possible collaborative relationships. From an inventory of market actors and platforms, possible approaches to collaboration are outlined, and possible disruptions to actors across the value chain are delineated. This step helps assess the ease of implementation for a country's new or mod-

Why banks should invest

Financial institutions have four clear, compelling reasons to invest in improving payments infrastructure:

- Payments are central to the banking customer relationship. Payments touch points foster customer engagement, satisfaction and loyalty, and provide banks with the opportunity to grow or maintain their share of customers' wallets.
- An improved payments system can have a positive economic impact on payments overall, improving revenue potential and ensuring a positive business case in its first decade.
- The enhanced functionality of an improved payments system could allow for near-real-time payments, which in turn would enable monetized services like expedited bill-pay and person-to-person payments. This capability could transform the economics of retail banking by making a larger portion of retail customers profitable, enabling economically viable solutions for the underbanked, and allowing banks to compete effectively to retain their most profitable customers.
- The digital convergence of commerce and payments has attracted new competitors who are developing convenient, faster payments solutions. These players will intensify the competition for payments and threaten banks' position unless banks innovate and invest in better systems.

ernized payments system and the likelihood of widespread adoption.

Step 6: Develop the implementation road map. This step entails the vetting process for the recommended design option and a comprehensive written assessment that includes all recommendations in detail. This step is vital to the project's ability to steer the implementation process in the desired direction. The road map will address possible roadblocks and key areas of concern, including whether the system is mandated, how it will be regulated and by what entity, whether system participants can take advantage of the changes to build a better business, and how long implementation could take.

First steps

Perspectives vary as to how payments systems can be changed for the better. When improving their payments systems, countries may decide 1) to keep their existing infrastructure while adding more processing capacity, 2) to build a completely new

infrastructure, or 3) to extend their existing infrastructure by building more of it. Each of these approaches is viable under certain conditions. However, the first two steps remain the same: first, identify use cases and desired features and functionality for a new or enhanced system; and second, develop the design options.

Identifying use cases

Since accelerating payments speed does not by itself make an adequate business case for a modernized payments system, national payments system projects must spend the time and effort to identify the best use cases for the system, explain the rationale for each and estimate their implementation costs. To pinpoint the use cases that demonstrate the greatest need and potential for adoption of a modernized system, thirteen use cases may be considered (Exhibit 2).

Some of these use cases already have adequate solutions, infrastructures and rules and thus may not be the best candidates to

Exhibit 2

Use cases can help assess the efficiency and effectiveness of a payments system

Payor/Payee	Use case characteristics	Description (not exhaustive)
Business to business (including government)	A. Recurring	Regular, recurring, generally not time-critical, non-emergency payments
	B. One-off, low-value	Business-to-business, time-critical payments Irregular or one-off payments between businesses for low-value transactions
	C. One-off, high-value	High-value, irregular, time-critical payments between businesses
Person to person	A. Transfers	Non-commerce payments from one individual to another
Person to business	A. Recurring	Bill payment for regular services
	B. Point of sale	Standard point-of-sale transactions
	C. One-time, remote, real-time	Online purchase of digital content Emergency/last-minute bill payments
	D. One-time, remote, delayed	Catalogue purchase Online purchase of physical goods to be shipped later
Business to person	A. Recurring	Regular employee payroll, regular government payments
	B. One-time, low-value	Temporary/part-time employee wages, Irregular payments from work Ad hoc, low-value, government-to-person payments
	C. One-time, high-value	Large, one-off payments from business/government to individuals
Account to account	A. Recurring	Account-to-account transfers – specifically, corporate cash concentration
Capital markets transaction	A. Recurring	Buying and selling of long-term debt or equity-backed securities

Source: McKinsey Payments Practice

become the foundation of a modernized, expedited payments system. The use cases that demonstrate sufficient unmet customer needs to support the transformation of a country's payments system include but are not limited to:

- P2P payments. Examples include payments unrelated to commerce, such as rent payments to a roommate or emergency funds for a family member, and commerce-related payments for informal services such as babysitting or lawn care.
- Person-to-business payments. Examples include expedited or emergency bill payments as well as catalogue or online purchases of goods to be shipped later.
- Business-to-person payments. Examples include temporary or part-time employee wages; one-off, low-value payments from a government to a person (e.g., jury duty compensation); and large, one-off payments to individuals, such as a medical insurance reimbursement.
- B2B payments. Examples include expedited inventory purchases and just-in-time payments to suppliers.

These payments types are ripe for a new solution that will execute transactions electronically, more quickly, and/or more cost-effectively than the solutions currently in the market. Creating a system that would enable users to make these payments effi-

Real-time clearing vs. real-time settlement

As payments infrastructures evolve, a debate about real-time settlement simmers. Should new systems enable real-time settlement, with *settlement* denoting the conclusion of a transaction by delivery of payments to the payee, with the accompanying debit from the payer? Or can a payments system's effectiveness be improved without forcing real-time settlement?

Three of the 12 features McKinsey considers necessary for improved payments infrastructure directly relate to speed (see Exhibit 3, page 29):

- **Timing and method of authorization and clearing** (with *clearing* denoting all activities from the time a commitment is made for a transaction until the transaction is settled)
- **Availability of funds**
- **Timing and method of settlement**

The first two depend largely on end users' expressed needs. Settlement speed, on the other hand, hinges primarily on the level of settlement risk posed by outstanding interbank balances.

Notably, interviews with payments industry stakeholders suggest that many financial institutions would strongly prefer intra-day settlement if real-time funds availability is extended, even when the market standard is end-of-day or later settlement. The ATM market provides real-time funds availability, for example, but with next-day settlement.

When modernizing a payments infrastructure, should the focus be on building real-time capabilities into these three speed-related features? Or should it be on creating an overall real-time environment, or will near-real-time suffice? Payments system stakeholders worldwide have explored these questions, and answers are emerging for each of the three speed-related features:

- **Timing of authorization and clearing.** In the move to a more efficient, more effective payments infrastructure, the demand for real-time authorization and clearing of items between banks is strong. If a country moves to "faster payments," banks should ensure that they have confirmation of good funds before they extend availability to clients and take on liability for a payment.
- **Timing of funds availability.** While extending real-time availability of funds to the end user will most likely remain an institution-by-institution decision, banks clearly prefer that real-time authorization and clearing be required before they can make funds available sooner to the end user.
- **Timing of settlement.** There is consensus in the payments industry that real-time settlement is a complex and likely expensive endeavor. Banks generally agree that real-time settlement between banks is not needed as long as two conditions are met: (1) a country increases the number of intraday settlement windows to better control systemic financial imbalances and risk; and (2) the ability to have real-time authorization and clearing is inherent to the system.

The debate between real-time clearing and real-time settlement can be resolved simply for most countries. Banks are willing to consider extending near-real-time availability to customers as long as they have confirmation of good funds through real-time authorization and clearing. This capability would obviate the need to build a real-time settlement system. Hence, countries seeking to modernize their payments systems must effectively take steps to mitigate and control systemic risk and avoid the need for sweeping, drastic changes to the settlement process.

ciently would likely garner enough support to make a credible business case.

Establishing required features and functions

Once the best use cases for a payments system modernization effort have been identified, the necessary features and functionalities of the new or upgraded system must be delineated. Each project and country will have its particular requirements, but a process that assesses end users' needs against 12 potential features and functionalities can help focus efforts on the important areas (Exhibit 3). A few of the functions provide more speed and greater efficiency, while most improve efficiency only.

As this process wheel makes clear, the modernization effort should focus mainly on efficiency. Only three of the identified features would improve payments speed. The object in the modernization effort should be the improvement of the overall health of the payments system, not just its speed.

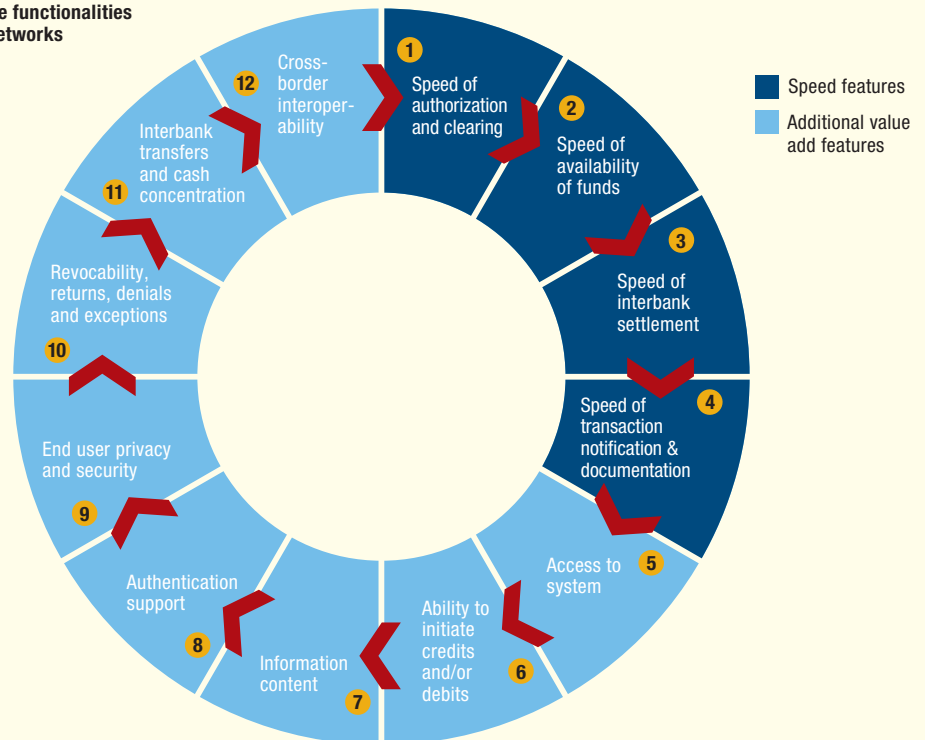
Evaluating design options

Because evaluating all of the possible design options for a new or improved payments system can be daunting, it is best to follow a methodical approach. First, project planners should narrow the field at the outset by choosing whether to use existing platforms or to design a completely new architecture. To base the improved system on existing

Exhibit 3

New payments products and services need to address a range of features to drive adoption

Primary feature functionalities of payments networks



Source: McKinsey Payments Practice

platforms, they need to decide which payments platform to use: check, ACH/EFT, debit card, wire transfer or something else. For projects based on new architecture, planners must determine how long each construction phase will take to implement, and how much each phase will cost.

As national payments systems across the globe modernize, the changes are reverberating among banks, payments solution developers and vendors, and will eventually affect the entire value chain—from national networks and central banks down to treasury managers, merchants and consumers.

Next, design options can be further narrowed according to guiding principles that address the country's needs and desired outcomes. These principles will vary from country to country, but should generally address:

- Target use cases (e.g., B2B transactions in all their various forms)
- Systemic capabilities (including, for example, who has access to the payments system, what type of data can be transmitted, when and how good funds are calculated, and when settlement occurs)
- Governance
- The economic model of the project's sponsor or initiator

- Security concerns
- Architectural considerations (for example, leveraging an existing platform such as ACH by adding functionality through a new messaging layer, or building a completely new payments platform rather than retrofitting an existing platform)

Once the guiding principles have been formulated and the available design options assessed against them, the evaluation effort should weigh the feasibility of implementing each option, as well as each option's advantages, drawbacks and trade-offs.

All stakeholders—including government agencies, financial institutions and service and platform providers—must agree on the final group of design options to consider. The definitive design choice will rest on step 3, in which the payments system's business and technical requirements are determined, and business cases for each design option are developed.

We have elaborated on the first two steps of the six-step process toward transforming a nation's payments system, but all six steps are equally important. The framework is designed to help planners steer the improvement program progressively. Each step requires careful deliberation. To avoid initial failures and expensive rework, sponsoring parties should appropriate the necessary talent, time and money for a payments system modernization project up front.

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As national payments systems across the globe modernize, the changes are reverberating among banks, payments solution developers and vendors, and will eventually affect

the entire value chain—from national networks and central banks down to treasury managers, merchants and consumers. Financial products and services, payments platforms, and even retailers must evolve to align with the changes. Success in payments transformation will depend on gathering the right

thought partners and positioning the right design choices for implementation.

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