



Make the move:

Real-time settlement for card-based payments

It's a moment of critical change for the card industry. Here's how the transition to real-time liquidity means stronger business growth for all parties in the ecosystem.



Content



The curious case of settlement for card-based payments.



Businesses operate in an instant payment environment, and they expect the same from their banking partners.

Yet settlement of card-based payments has curiously lagged.

The technology is there for it. So is market demand as digital transactions gain momentum over cash transactions at brick-and-mortar stores and e-commerce sites.

What's been lacking—until now—is the card ecosystem's business motivation. Now, competitive pressures are intensifying as more real-time payment players—using methods such as digital wallets and QR codes or pay-by-bank services and app-based account-to-account (A2A) applications—make funds instantly available to merchants at a lower cost than traditional payment methods.

Liquidity issues are also motivating change. Most card-based payments are settled through the reliable, time-tested deferred net settlement (DNS) process. But DNS funds aren't instantly available, impacting the ability of banks and merchants to calculate intraday liquidity.

The real-time settlement model brings card-based payments into the instant payment era, addressing competitive threats to the card industry's longstanding business construct and providing customers with a compelling value proposition.

The result is lower overall risk to the card-based payments ecosystem—and immense possibilities for making sophisticated use of real-time liquidity to drive additional business growth. Financial institutions (FIs) and corporates gain greater control over the intraday liquidity position. Fraud checks become more robust due to rich data, and cross-border card payments become more predictable through collaborative data exchanges.

Read on to learn the benefits of real-time settlement across the card-based ecosystem, and key recommendations for card companies' adoption.

Taking the pulse of card-based payments

During authorization, card-initiated transactions are obtained by the acquiring banks. Beyond a pre-set floor limit, acquirers send these transactions to issuers for authorization via networks such as Visa, Mastercard and Discover. This happens in real time.

Based on the instant authorization approval, the merchant disburses the merchandise or service to the customer. Post authorization, a message exchange occurs between the respective parties for clearing and settlement.

For DMS protocol (credit card and signature debit), clearing happens in batches following the authorization. Conversely, for SMS (PIN debit and ATM cards), clearing occurs during the authorization process itself.

In both cases, the settlement between the acquirer and issuer happens in predetermined batch cycles. Typically, the networks facilitate this process and merchants wait to receive funds at the end of settlement cycle, which in some cases can take days.



Card-initiated payment transactions are authorized in real time but settled in batches. Clearing can happen in real time or in batches, based on the specific scheme being utilized.

The growing limitations of batch settlement

Today's real-time environment exacerbates the limitations of the batch settlement model:

1 Overall intraday liquidity isn't real time.

The cycle for enterprise-level intraday liquidity monitoring and forecasting has revolved around batch settlement. With several real-time account payment schemes around the world offering transaction by transaction settlement, continuing the batch cadence reduces banks' and corporates' control over enterprise-level liquidity.

2 Customer service issues due to deferred fraud checks.

To meet sub-second approval throughput during authorization, detailed fraud checks for card payments are typically deferred to the clearing and settlement batch process. But identifying fraud after the fact increases risk of disputes and chargebacks, which add to overall processing costs and operational overhead.

The growing limitations of batch settlement *(cont'd)*

3 Risk of less favorable exchange rates for EOD settlement.

For transactions involving currency conversion and FX rates, merchants typically prefer settlement when rates are most favorable for them, which requires frequent settlement options and greater control over the liquidity position.

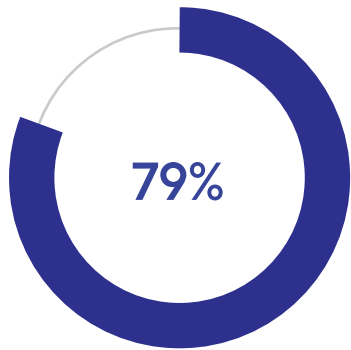
4 Lack of predictability for cross-border card payments.

Lower predictability and transparency in settlement timing hampers the rising number of cross-border card transactions through traditional correspondent banking models and continuous linked settlement (CLS).

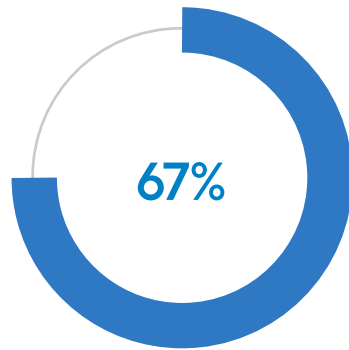
Among businesses, overwhelming interest in real-time settlement

Given batch settlement's limitations, the overwhelming interest in real-time settlement is perhaps unsurprising. Among firms selling across online marketplaces, 60% would take their business to a marketplace that offers real-time settlement, according to a survey by PYMNTS and Visa.

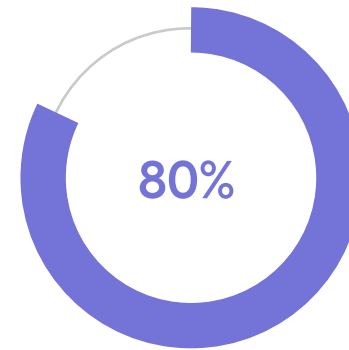
Among small businesses, fast access to funds is a top priority.



Portion of digital native small businesses that consider access to funds as soon as customers pay to be "extremely" important.



Percentage of omnichannel microbusinesses that say the inability to access funds quickly could force them to delay making payroll.



Share of omnichannel small businesses that are "extremely" interested in rapid settlement.



Impact on the overall risk map

Real-time settlement is a powerful trigger for lowering payments-related risk in several critical areas. The one area of incremental risk is fraud, and we see the rise in risk addressed across multiple platforms by tools that employ AI and machine-learning technologies to detect fraudulent transactions in real time.

	MERCHANT	ACQUIRER	NETWORK	ISSUER	Inferences
Settlement risk	↓	↓	↓	↓	Zero settlement risk. Because every stakeholder's due is immediately settled, overall risk is reduced.
Liquidity risk	↓	↓	↓	↓	Positive impact on liquidity. Improved cash flow allows better liquidity and reduced cash reserve requirements.
Credit risk	↓	→	→	→	Lower credit risk for merchants. Merchants benefit from reduced wait times.
Fraud risk	→	↑	↑	↑	Real-time fraud check becomes crucial. As fraud risk rises with money movement in real time, expect to see development of AI/ML-based fraud engines to combat it.
Compliance risk	→	→	→	→	Compliance is a cost of doing business. First movers to real-time settlement gain the opportunity to influence and shape new regulations. Actual compliance requirements are yet to be determined.
Operational risk	↓	↓	↓	↓	Overall batch processing will be virtually eliminated. Day-to-day payment operations will be simplified with reduced need for batches and reconciliations.
Market risk	↓	↓	↓	→	There is increased demand for real time. Real-time settlement will attract more merchants and acquirers.

↓ Lower risk

↑ Higher risk

→ Status quo

Benefits across the ecosystem

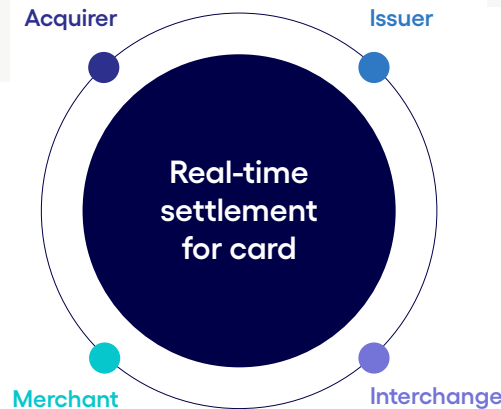
The real-time settlement model generates positive benefits for all players in the card-based payment ecosystem, from issuers and acquirers to networks and merchants.

Increased merchant acquisition

With more merchants seeking real-time fund availability, acquirers will increase onboarding of merchants (SMEs) and expand service fees for instant funds availability.

Greater control over liquidity position for issuers

No float in the ecosystem will lead to finer control over intraday liquidity for issuers.



Zero settlement risk for merchants

Real-time settlement for merchants will positively impact interchange fees due to zero settlement risk and reduce the frequency of chargebacks and disputes.

Interchange is a key driver of change

Real-time payment per transaction processing will reduce the time and effort DNS requires for huge batch processing efforts. The settlement system can be up and running 24x7 as concepts like end-of-period and end-of-day processing will no longer apply.

Why the real-time settlement model hasn't taken off

In a financial services environment where instant payments are increasingly the norm, card payments' lagging position has been curious to outsiders as well as to many within the industry.

Yet until now there have been many influences slowing the payments industry's move to real-time settlement:

- 1 Established business models prevail.**

The DNS-based business model is proven, and there's considerable inertia about changing it. Its method of collecting interchange and assessment fees works well, and it provides sound control over risk factors as transactions are settled over multiple days. DNS' prevalence and reliability can make it difficult to justify the move to real-time.
- 2 Lack of processing power.**

Settling transactions in a fraction of seconds requires processing capacity that hasn't been available until now. Even though technical advancements like microservices and SOA appeared in account-based payments, card payment switches typically kept running on NSK or UNIX setup for higher batch processing capability. Making the shift to real-time requires investment in technologies, systems integration, and computing power.
- 3 Complexity around real-time fraud checks.**

Real-time settlement requires fraud checking to be completed in milliseconds. It's a significant change for the card industry, which has relied on a deferred model that allows each party ample time to run authenticity checks on transactions. Supporting real-time fraud checks requires implementation of sophisticated systems that can be costly for smaller players in the card industry.

Why the real-time settlement model hasn't taken off

(cont'd)

- 4 Concern over additional regulatory pressure.**

Although regulations and compliance requirements for real-time settlement are inevitable, first movers gain two advantages: The opportunity to adopt new processes without added compliance burdens, and the ability to influence and shape any new regulations.
- 5 Collaboration is required.**

Real-time settlement can't be achieved by one party in a silo. It requires collaboration among all counterparties. Networks will play a key role, as they'll undergo changes throughout much of their business model.
- 6 Fear of additional cost.**

Banks are unsure how they will recover the additional costs. While it's true that implementing a real-time settlement model requires additional expense, the business model with how to recover the costs has yet to be firmly established.

What makes today's environment different

The convergence of market forces and new technical capabilities are motivating important changes.

Amid customer demand and competitive pressure from the likes of Venmo, there's an opportunity for financial institutions to make the move to real-time settlement in a cost-effective, risk-appropriate manner that brings greater control over liquidity for each party in the card-based payments value chain.



Several key factors make real-time liquidity especially compelling now:

Competition from A2A RTP.

Real-time account-to-account payments services like Zelle, PayPal and Venmo have captured the attention of consumers as a preferred payment method and are forcing the card-based payments industry to rethink its position in electronic payments.

ISO 20022 is here.

This new enriched payment message format has more data elements available for settlement. ISO 20022's credit transfer message has deeper data richness to allow for seamless real-time settlement.

Exponential increase in computing power.

New settlement models benefit from the explosive growth in disk space, more affordable CPU power and the ubiquity of the cloud.

Arrival of powerful real-time fraud check systems.

Rapid evolution of AI-ML and its application in the payments space has now made quick FRM checks accurate and robust.

Need for speed in payments has grown exponentially.

Increased traction for real-time funds availability and transparency have become critical factors in today's payments ecosystem and an opportunity for first movers to achieve strategic competitive advantage



Conceptual frameworks for real-time card-based payments

The success of the real-time paradigm in the card-based payment industry depends on the ability of FIs and major card networks to agree on settlement rules and collaborate on interoperable services. Multiple potential approaches exist to achieve this end.

In real-time settlement, the actual money movement happens immediately after the transaction is authorized by the issuer. This will require networks to either upgrade their existing clearing engines or integrate with another real-time settlement engine, built in-house or provided by another entity.

Typically, global card networks rely on ISO 8583 message structure for clearing and settlement. In order to provide immediate settlement data to participants, it makes sense to leverage ISO 20022 for its data-enriched payment message structure.

The global payment industry is increasingly migrating towards ISO 20022 due to the richness of its information payload and modern structure. In addition to its use in real-time account-based payment schemes, ISO 20022 has been introduced for high-value clearings in Japan, Switzerland, and China. Additionally, SWIFT plans to introduce ISO 20022 for cross-border payments. Major PMIs such as The Federal Reserve, The Clearing House (US), Eurosystem, EBA Clearing (eurozone) and the Bank of England's RTGS (UK) will all modernize their high value payment systems nearly simultaneously.

Real-time settlement for card-based payments can be achieved through different approaches based on the entity performing the settlement or maintaining the accounts.

Approach 1: Settlement accounts held by the card networks

In this approach, the network holds settlement accounts for the issuer and the acquirer. These accounts will also be maintained by the network itself, leveraging their designated banking partners. The actual money movement between these settlement accounts can happen in real-time along with transaction authorization.

When an end customer presents their card at the merchant point of sale, the transaction will flow via the acquirer through the card network to the issuer for authorization. Upon successful authorization, the network will transfer the money from the issuer settlement account to the acquirer settlement account and pass back the authorization message to the acquirer, who in turn will notify the merchant.

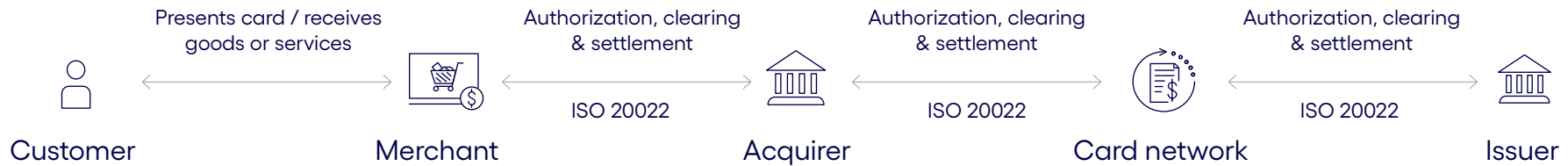
All of this happens in a single end-to-end transaction in real time. The settlement account balance adjusts for each transaction. If there

are not enough funds in the settlement account of any party, the network can reject the authorization even if authorized by the issuer.

For this framework to be possible, the settlement accounts will need to be pre-funded by the participating institutions. The network can establish a configurable sweep in/out mechanism for the participating institutions to make money movements to/from these settlement accounts from/to their central bank accounts. To facilitate intraday operations, the sweep mechanism also needs to be automated so that money can move into the participant settlement account from the participant central bank account if the settlement balance falls below a pre-determined threshold.

Since the entire payload of authorization, clearing and settlement must be passed on between parties via a single message, this approach can leverage the ISO 20022 rich message format.





	Merchant	Acquirer	Card network	Issuer
Card presentment	Point-of-sale	Merchant	Participant onboarding	Balance check
Dispute function	Customer service	Merchant mgmt.	Participant mgmt.	Velocity check
	Tax management	Currency conversion	Stand-in processing	Credit check
	Fee processing	Payment ordering	Currency conversion	Card management
	ISO 2022 support	Tax management	Payment routing	Authorization
		Fee management	Clearing	Tokenization
		Dispute function	Dispute function	Account maintenance
		Customer service	Fee management	Customer service
		Fraud / AML	Fraud / AML	Fraud / AML
		Settlement	Participant service	Settlement
		ISO 2022 support	Settlement	Account posting
			ISO 2022 support	ISO 2022 support

Capability Legend

- Existing - no change
- Existing - modify
- Completely new

Approach 2: Leverage instant CSMs and their designated settlement accounts

Alternatively, card networks can integrate with a third-party clearing and settlement mechanism (CSM) such as TCH RTP, the upcoming FedNow in the US, and Faster Payments Service (FPS) in the UK.

Upon successful authorization, the network in this case will pass on the confirmation to the partner. Compared to the first approach, here the message format change required by participants will be minimal but incur an additional cost for using the CSM's settlement services. FedNow will be far more cost effective and also enable US participants to seamlessly settle card-based payments with 11,000 other FedNow participants, which TCH can't match. Another great

advantage of FedNow will be the use of the central bank money for participants to perform settlement on. With no additional settlement account in-between, participants will be able to view their real-time overall liquidity across all asset classes with one single account for everything.

Zelle operator Early Warning Services LLC has considered a similar approach to leverage TCH RTP for instant settlement of payments cleared by Zelle. Zelle payments are cleared in real time but settled in ACH batches.



Implementation considerations

Real-time settlement for card-initiated payments requires substantial collaboration between stakeholders in the value chain.

Card networks need to be in the forefront of the paradigm shift. To ease the rollout process, they can offer several models of segmentation for enabling real-time settlement. A gradual approach will allow ample opportunities for course correction and optimization for efficient evolution.

Potential models of segmentation for real-time settlement

- 1 Value-based selection.** DNS for low value payments with a pre-set watermark on transaction amount. Larger amounts than the watermark are sent for real-time settlement.
- 2 Choice based on transaction risk score.** Transactions with a low-risk score are settled immediately while others go through DNS' more stringent checks. A real-time fraud engine provides the scores, and the decision on settlement method can be automated.
- 3 Merchant category-based assortment.** Businesses with high-value transactions are ideal candidates for real-time settlement to enable better liquidity.
- 4 Selection based on card type.** Some transactions made by credit card or charge cards continue to be settled through DNS while prepaid or debit card-based transactions settle in real time.
- 5 Customer-based segregation.** Merchants specify transactions from specific customers—such as wholesale or B2B—for real time settlement.
- 6 Ad hoc run-time selection.** For want of liquidity, merchants choose specific transactions to settle in real time and bear the extra settlement costs.

Choose the critical path

Real-time settlement is inevitable. Making the commitment to act now is critical, and that's good news for the cards-based ecosystem.

The real-time settlement paradigm holds immense potential for delivering the liquidity that can drive new growth for businesses. Equally important, it provides a new business model for the ecosystem, addressing the rising tide of competition and modernizing the industry. Customers gain a compelling value proposition, particularly as digital transactions gain momentum over cash transactions. Finally, it's a win-win for acquirers and merchants, enabling acquirers to increase merchant onboarding and improving merchants' liquidity, cash flow and profitability.

It's only a matter of time before real-time settlement for card-based payments becomes a reality—and that time is now.



Make the move

At Cognizant, payment modernization is our speciality. We partner with more than 100 clients globally, and our practice includes 10,000 associates and 500 business consultants.

Click [here](#) to ask us how real-time settlement of card-based payments can strengthen your business.



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