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White Paper

# Debit Networks 101

Understand How Debit Networks Bring Speed and Convenience to Today's Payments – and Tomorrow's

the speed of life

The payments market continues to see an expanding variety of debit card payment methods, transaction types and purchasing channels. Digital wallets, chip cards or cardless transactions. Signature, personal identification number (PIN) or biometric authentication. In-person, online, in-app and mobile purchases. Tap, swipe, dip, wave. How does the payments industry keep up?

The answer: debit payment networks. The networks deliver the real-time payments services card issuers and merchants need, and the access to funds consumers expect – anytime, anywhere and in a variety of ways.

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Things have changed.

The financial services industry is no longer bound by "banker's hours," brick-and-mortar locations or hand-written check registers. Today, consumers expect anytime convenience, and can access financial services anywhere they can use a mobile phone, personal computer or automatic teller machine (ATM). There are more methods than ever for viewing funds, getting cash and making a purchase – fast.

Debit payment networks (such as Accel®, MoneyPass® and STAR®, all from Fiserv) have been a catalyst for these faster, more convenient interactions – and continue to provide significant money movement innovation.

But what, exactly, is a debit payments network? What is its role? How do the networks operate? And why are they so necessary to everyone's financial well-being?

Comprehending debit payment networks more fully can help you engage with them most effectively. So, here is our overview to help you understand the basic operations of debit networks – and the essential services they provide within the payments ecosystem.

## Debit Network: A Definition

A debit payments network provides a set of business rules and a technology infrastructure that enables buyers and sellers of goods or services to conduct secure, real-time payment transactions. Most often, the network facilitates the payment between a consumer and a merchant. This role is especially important because thousands of financial institutions – and other businesses – issue debit cards, and millions of merchants accept them. Networks solve the challenge of connecting these endpoints.

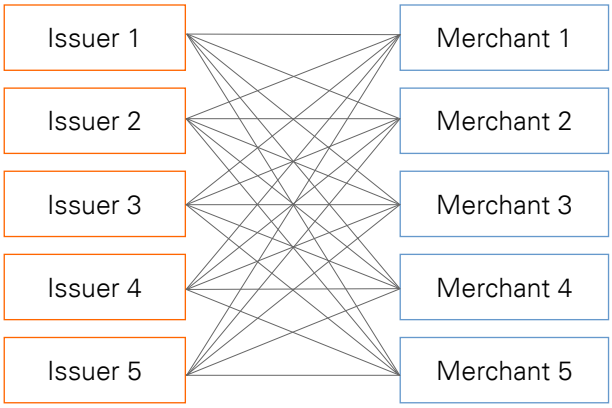
Networks also enable consumers to send and receive money or obtain cash at an ATM from their bank or credit union's account.

## Efficiently solving the "many-to-many" challenge

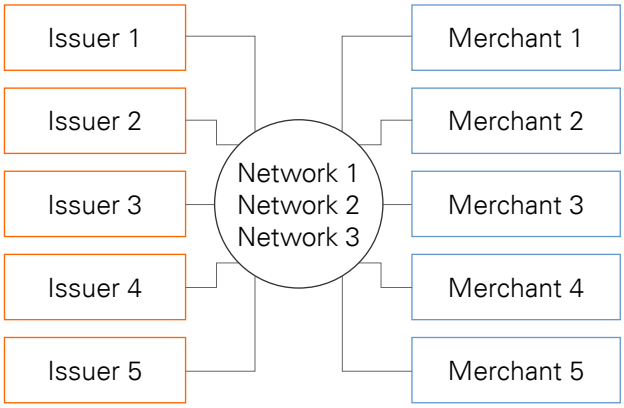
Debit payment networks, such as Accel and STAR, connect and transmit payment transactions between merchant acquirers and issuers, performing services such as payment authorization, clearing and settlement.

Typical card network services include (but are not limited to): operating rules, card branding, transaction routing, risk programs, settlement and reporting, and exception item processing.

Without Networks (25 discrete connections)




With Networks (10 discrete connections)




Debit card transactions differ from credit card transactions in that a debit card's payment is immediately withdrawn from the purchasing consumer's account, while a credit card payment transaction enables a consumer to borrow funds that must be repaid later.

### Debit Network Gateways

To reduce the complexities of debit card programs, networks can also provide a universal payment gateway to access other debit networks. A single connection to one network means fewer links and less expense and effort for network issuers and acquirers.

## Key Parties in a Debit Transaction

Typically, there are eight main parties in a debit transaction.

- **Consumers**
- **Point of Interaction: Merchants or ATMs**
- **Acquirer Processors**
- **Acquirer Members**
- **Networks**
- **Debit Processors**
- **Issuer Account Processors**
- **Issuers**

## Consumers

Debit card transactions always begin with a consumer, sometimes referred to as an accountholder or cardholder. In most cases, the consumer is looking to:

- Access funds in their account
- Use a card at a merchant location or online (for a purchase or to send or receive funds)
- Obtain money (at an ATM, for instance)

In today's mobile era, the card may be virtual – stored on a phone, for example – or physical.

## Point of Interaction: Merchants or ATMs

When a transaction involves a purchase of goods or services, the second key party is the merchant. Merchant transactions are typically referred to as point-of-sale (POS) transactions. These can be conducted in-store using a POS terminal or mobile phone, or online using a computer or a mobile device (a mobile phone or tablet).

Consumers can also use their debit cards at ATMs found at a variety of convenient locations, to make cash withdrawals or conduct other basic transactions.

## Acquirer Processors

Acquirer processors work with merchants and ATM owners to acquire a transaction for payment. Acquirer processors connect to the debit networks and route the transactions for the merchants/ATMs to the networks.

## Acquirer Members

Acquirer members sponsor acquirer processors in debit networks. They are responsible for monitoring acquirer processor operations and transactions sent to the networks and may hold liability if there are issues. Acquirer members are not part of the technical flow of transactions; however, they are an important participant in debit networks.

## Networks

A debit network inhabits the middle space among all these participants, connecting acquirers and issuers. A debit network system or platform (sometimes referred to as a "switch") manages these relationships through a network membership agreement, a set of common network operating rules and its technology infrastructure.

## Debit Processors

Most issuers use debit processors as a consolidator for all the transactions from the multiple debit networks in which the issuer participates. Often, issuers will use some or many services offered by debit processors to validate various aspects of debit card transactions. These services can include risk and security features (such as EMV chip validation, 3D-Secure, AVS, CVi/CVV/CVC, card expiration dates, hot cards and multi-layered risk services) and transaction conditions (such as dollar limits, velocity checks, holds on funds and other options).

## Issuer Account Processors

Issuer account processors provide services to issuers and their cardholders' accounts. This service includes many kinds of account processing activity – not only debit network transactions, but also online banking services, branch activity and check clearings. For debit payments, issuer account processors manage the technical interface and receive debit network transactions from debit processors. Issuer account processors also manage transaction activity for the account connected to the debit card. This activity includes account status (open, closed, locked), available account balance and numerous other account-related factors. Some issuers maintain their own processing capabilities and perform the role of the issuer account processor themselves. Other issuers use third-party providers for this service.

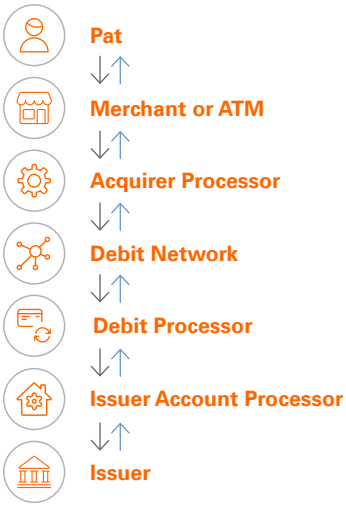
## Issuers

Issuers provide consumers with debit cards. Most cards are issued by financial institutions and provide access to funds in the consumer's account. However, other entities, including government agencies, insurance companies and fintech organizations, also issue debit payment cards – including prepaid, payroll or gift cards. To participate in debit networks, these entities may require a sponsoring financial institution which is often named on the back of the card.

## Debit Transaction Flow

To illustrate each party's role in a typical transaction, here is a sample transaction flow.

1. Pat opens a new banking account and receives a debit card
2. Pat goes to a store to buy a pair of jeans and taps the debit card at the store's POS terminal
3. The store's POS terminal communicates with its acquirer processor, which is providing card acceptance and transaction processing services
4. The acquirer processor electronically forwards the transaction to a debit network, which is in communication with Pat's issuer's debit processor
5. The debit processor evaluates the transaction and forwards it to Pat's issuer account processor
6. If the various transaction conditions and risk evaluations pass and funds are available, Pat's issuer authorizes the transaction, debits Pat's account and sends a message electronically through the issuer account processor, debit processor and network that the purchase is approved
7. The network electronically notifies the acquirer processor of the transaction approval, the approval message is sent to the merchant and Pat leaves with the jeans just purchased
8. Collectively, all these actions are completed quickly – within a few seconds




## Debit Transaction Types

Debit networks support a wide array of purchase and funds-access authentication methods and transaction types.

### PIN

Transactions are authorized using a personal identification number (PIN)

### No PIN

Transactions below a certain dollar amount (or other criteria) don't require a PIN or signature

### Signature

Consumer optionally signs a receipt or the signature screen at the point-of-sale terminal

### eCommerce

Online purchases made through a computer or mobile device (for example, phone or tablet)

### Bill Payment

Debit payments for bills such as utilities, medical bills, car payments, and subscription services

### Money Transfer

Funds sent from one party to another (person to person or disbursement) and other types of transfers

### Token (for example, ApplePay)

With tokens, the PAN (card number) is not transmitted during the transaction. making the payment more secure

### ATM

Withdraw cash from an ATM, perform an account transfer or balance inquiry

## The Importance of Network Operating Rules

Throughout the transaction process (including any returns or disputes), a set of business and operating policies established by a debit network, often called network operating rules, govern the responsibilities of each party involved. Network operating rules define roles, responsibilities, standards and guidelines applicable to all participants to ensure consistency and stability for network transactions, including rules for exception items and dispute management. In addition, the network operating rules define services provided by a debit network, which include:

- **Connectivity** – Networks maintain the infrastructure, specifications and security required to facilitate the exchange of information between participants
- **Transaction Switching/Routing** – Networks route messages among network endpoints to facilitate transactions and authorization decisions
- **Settlement** – Networks facilitate the exchange of monetary and non-monetary transaction-related information, and:
  - Provide reports with transaction details
  - Initiate the settlement of funds for monetary transactions with the issuer and acquirer participants
- **Branding** – Networks provide branding standards to:
  - Define design standards, official color requirements and placement of the network logo on debit cards, payment devices, eCommerce payment screens, and ATMs to designate card participation and merchant acceptance
  - Establish a common consumer experience
  - Create and promote awareness through sponsorships and marketing
- **Data Analytics and Reporting** – Networks provide data analytic tools providing insights to the portfolio and supporting transaction reconciliation and research

## Branding: U.S. Versus Global Debit Cards

Debit cards participate in branded debit payment networks.

- **Global Debit Networks** – Debit cards that display the Visa, Mastercard or Discover brands on the front of a card can be used within the U.S. and globally. These brands are often referred to as card associations
- **U.S. Debit Networks** – U.S. issued debit cards also participate in one or more brands often shown on the back of the card. These additional brands include the Fiserv-owned debit networks Accel and STAR, or other debit networks such as NYCE, Pulse and Shazam

## U.S. Regulations

Debit networks are governed by a series of federal regulations. Two key regulations are:

- Federal Regulation E that outlines rules and procedures for electronic funds transfers, and provides mandatory guidelines for issuers of debit cards. The regulation is designed to protect consumers who use electronic methods to transfer money
- Federal Regulation II (sometimes referred to as the Durbin Amendment), which includes the original Regulation effective in 2012 and the clarification published in 2023 that stipulates:

1. Debit card network participation: A debit card must participate in at least two unaffiliated debit networks (at least two networks that have different ownership). Most often, an issuer enables their debit card with one brand on the front of the card, usually a global brand (Visa, Mastercard, Discover), and at least one unaffiliated debit network brand (e.g., Accel, STAR, NYCE, Pulse, Shazam, NYCE) on the back of the card. It is important to note that U.S. issuers are not limited to enabling their debit card with only two unaffiliated U.S. network brands; they can enable their card with as many unaffiliated network brands as they choose. However, participation in more than two or three

debit networks can lead to increased expenses and can negatively impact the issuer's overall transaction revenue and debit portfolio profitability.

2. Merchant choice for routing debit transactions: When routing transactions, a merchant – for both on-premises and card-not-present transactions – can choose to route through any network it participates in and that is enabled on the card being used.

3. Interchange fee controls on debit card transactions (discussed below).

## Network Economics: Interchange Fees and Buy Rates

Debit networks set their own unique pricing for network participation and for transactions. One transaction-related fee is the interchange fee. This fee is the amount paid by the debit network to participants (issuer or acquirer), in compliance with Federal Regulation II (for POS), for the purpose of compensation for involvement in the transaction. The interchange fee is based on the amount collected from the other participant (issuer or acquirer), in the transaction.

The transaction type – ATM or POS – determines which party incurs expense or earns income on a given transaction.

- **ATM Activity** – The issuer is assessed or debited the interchange rate, while the ATM owner is paid or credited the interchange amount for the transaction, by the network
- **POS Transactions** – The merchant is assessed or debited a buy rate (Accel & STAR) or an interchange rate (term used by other debit networks), while the card issuer is paid or credited an interchange amount for the transaction, by the network

Accel and STAR Networks use the term "buy rate" for the amount collected from the acquirer and "interchange" for the amount paid to the issuer for POS transactions.

The term "interchange" is used for the rate paid by one party and credited to the other party for ATM transactions occurring in Accel, MoneyPass and STAR. This is also the term used for POS and ATM transactions in other debit networks.

### Determining Buy Rate and Interchange

Interchange rates (that influence the buy rate) available to merchants and financial services organizations are not uniform, because Regulation II specifies that applicable rates are determined based on a financial institution's asset size.

The Federal Reserve classifies issuers as "Exempt" or "Not Exempt."

- **Exempt** – Exempt issuers have reported assets of less than $10 billion
- **Not Exempt** – Not Exempt issuers, together with their affiliates, have reported assets of $10 billion or more

Regulation II introduces a maximum interchange rate for Not Exempt issuers and this maximum rate is not applicable for Exempt issuers.

Each year, the Federal Reserve publishes a list of U.S. issuers' asset sizes to help debit networks determine which issuers qualify for a statutory exemption from the interchange fee standards and limits implemented under Regulation II.

The effective result of the fee standards is that merchants pay different rates based on the Exempt or Not Exempt status of the issuer debit cards used at the merchant's locations. Merchants and acquirers may seek to minimize their transaction processing expenses and route transactions through the debit payments network offering them the lowest cost.

### Competitive Dynamics

A network's business model is a balancing act between issuers and merchants/acquirers: debit payment networks must find a way to simultaneously minimize merchant/acquirer expense in order to influence routing, and still maximize issuer net POS revenue (revenue less fees). These factors must be properly managed for both of these entities to be satisfied and remain loyal clients, and to ensure the network's own long-term competitiveness and viability.

## Delivering Anytime, Anywhere, Anyway Financial Convenience

Offering convenient, real-time access to funds and payments is essential to consumers, issuers and merchants. Debit payment networks deliver the anytime, anywhere, anyway payment services all parties need.

## About the Author

Carol Specogna is senior vice president, networks, at Fiserv. Carol and her team provide business development, program management, product delivery and strategic support for the Fiserv-owned Accel, MoneyPass and STAR networks.

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