



MATERA

Live Demo: Real-time payments in action with QR codes



FPC Webinar
September 23, 2025

Webinar Logistics



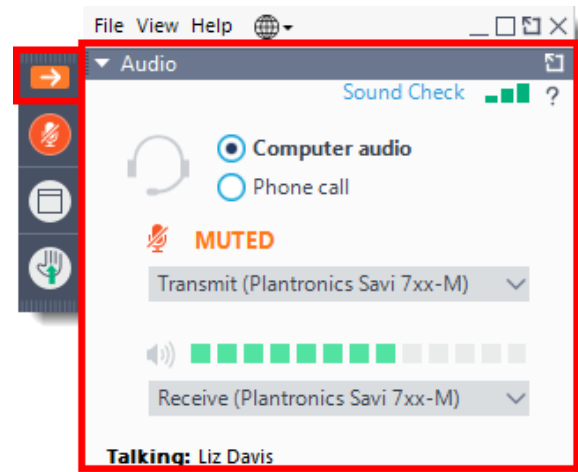
Christine Delaughter

FPC Member Services

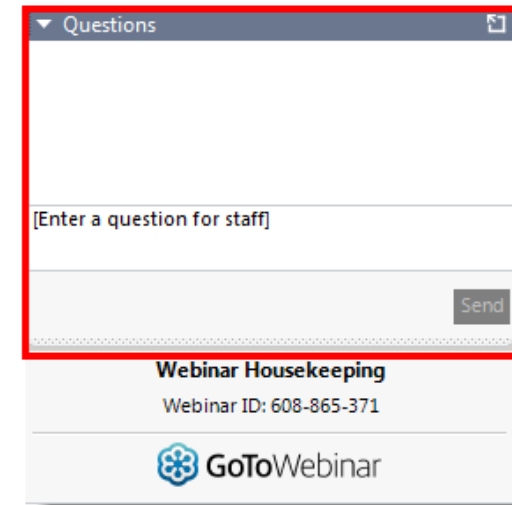
U.S. Faster Payments Council

cdelaughter@fasterpaymentscouncil.org

Attendee Interface



Submit Questions



Panelist



Sarah Hoisington

VP Strategy & Marketing

Matera

X9.150 Chair



Peter Tapling

Managing Director

Ptap Advisory

FPC Vice Chair Board of Directors



Steve Mott

Owner

Better Buy Design

X9.150 Vice Chair

Past Chair of FPC QR Code
Interface Workgroup



Keith Riddle

GM

Payfinia

Past Chair of FPC QR
Code Interface Workgroup

Agenda

- Evolution of QR codes
- X9A4 – purpose & scope
- Payment QR Codes vs URL QR Codes
- Demo – paying an invoice instantly by scanning a QR Code
- How payment QR Codes work
- Security
- Q&A

Poll Questions

Your feedback is greatly appreciated!

Have you scanned a QR Code to get a menu at a restaurant?

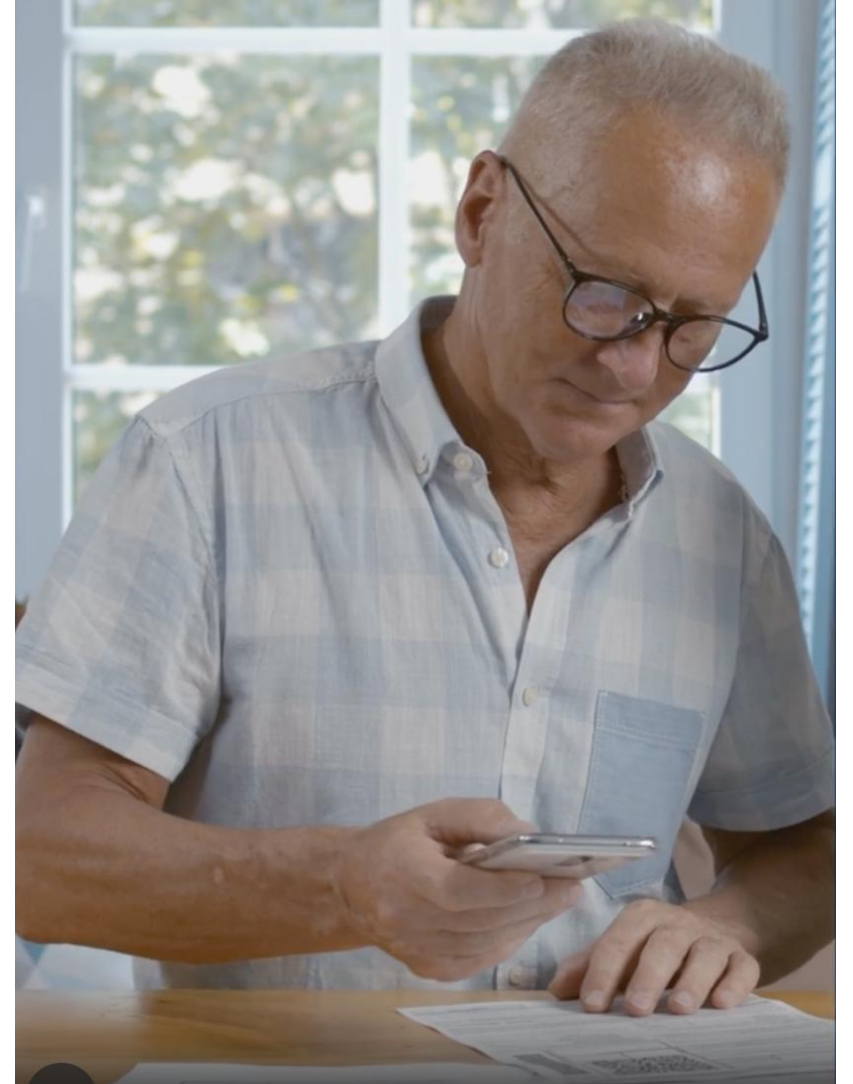
- Yes
- No

Have you opened the Venmo app and scanned a QR code to pay someone?

- Yes
- No

Imagine...

- ✓ Receiving a bill in the mail
- ✓ Scanning a QR code printed on the bill with mobile phone
- ✓ Authorizing payment
- ✓ Money moves from your financial account to your biller's account in under 10 seconds



Imagine...

- ✓ Ordering coffee at a cafe
- ✓ Scanning a QR code presented at checkout with mobile phone
- ✓ Authorizing payment
- ✓ Money moves from your financial account to the cafe's account in under 10 seconds



Payment QR Codes are widely used outside the US

China: 80%+ of transactions are mobile, led by Alipay & WeChat Pay ([Go-Globe](#))

Brazil: PIX accounts for over 50% of electronic payments; 40%+ via QR Codes ([Central Bank of Brazil](#))

Singapore: 67% consumers use mobile wallets or QR code-based payments ([Visa](#))


Thailand: 62% of consumers use QR code payments monthly ([Data Reportal](#))

Worldwide: 40% of mobile wallet transactions are QR-initiated ([CoinLaw](#))

COVID-19: Catalyzed adoption in restaurants and small merchants

EMVCo Format: Supported in 40+ countries, enabling cross-border consistency

Scanning payment QR Codes is common in other countries



Receita Federal

Documento de Arrecadação de Receitas Federais

CNPJ

11.535.843/0001-09

Razão Social

PIMENTA NETTO EMPREENHIMENTOS IMOBILIARIOS LTDA.

Período de Apuração

28/02/2025

Data de Vencimento

25/03/2025

Número do Documento

07.01.25066.8037550-9

Pagar este documento até

25/03/2025

Observações

PIS S/ FATURAMENTO FEVEREIRO 2025

Darf emitido pelo Sicalc Web

399,76

Composição do Documento de Arrecadação

Código	Denominação	Principal	Multa	Juros	Total
8199	PIS - FATURAMENTO	399,76			399,76
02	PIS - FATURAMENTO - P.J EM GERAL				
PA	02/2025 Vencimento 25/03/2025				
Totais		399,76	0,00	0,00	399,76

SENDA (Versão:5.2.3)

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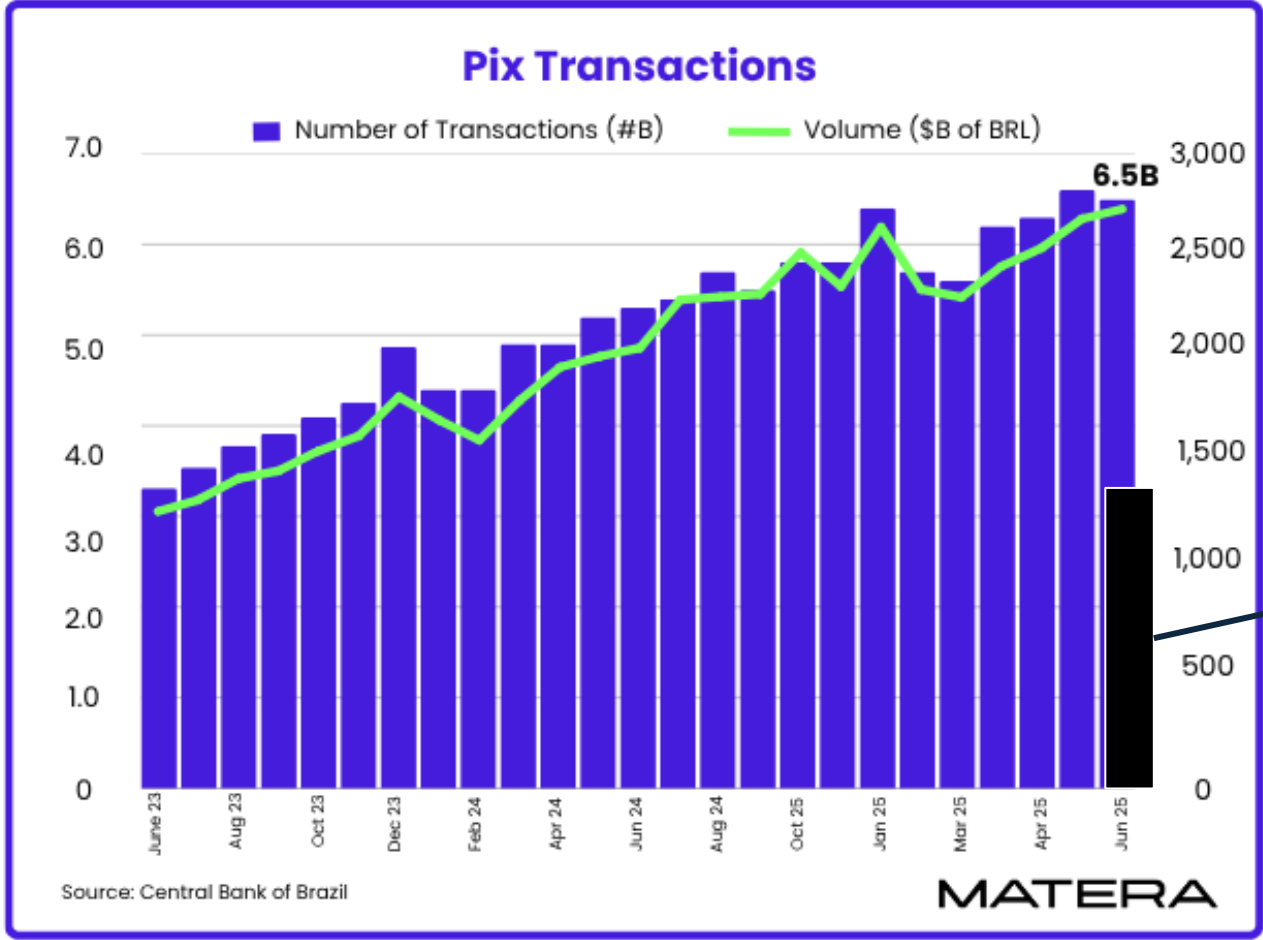
Valor:

399,76

Pague com o PIX



In Brazil, ~3 billion instant payments per month start with QR Code



~3 Billion Pix transactions per month are initiated by payment QR Code

What about fraud?

URL QR Codes do not work well for payments

Most QR Codes in U.S. are URL

Used for marketing

Provide more information

About products, events, menu items
etc.

Challenges for URL QR Codes & payments

Very vulnerable to fraud & scams

Can't PUSH instant payments

Money is PULLED from customer
accounts

Payers have to input financial
account details

Scanned by mobile phone camera

Payment QR Codes Are Ideal For Secure Instant Payments

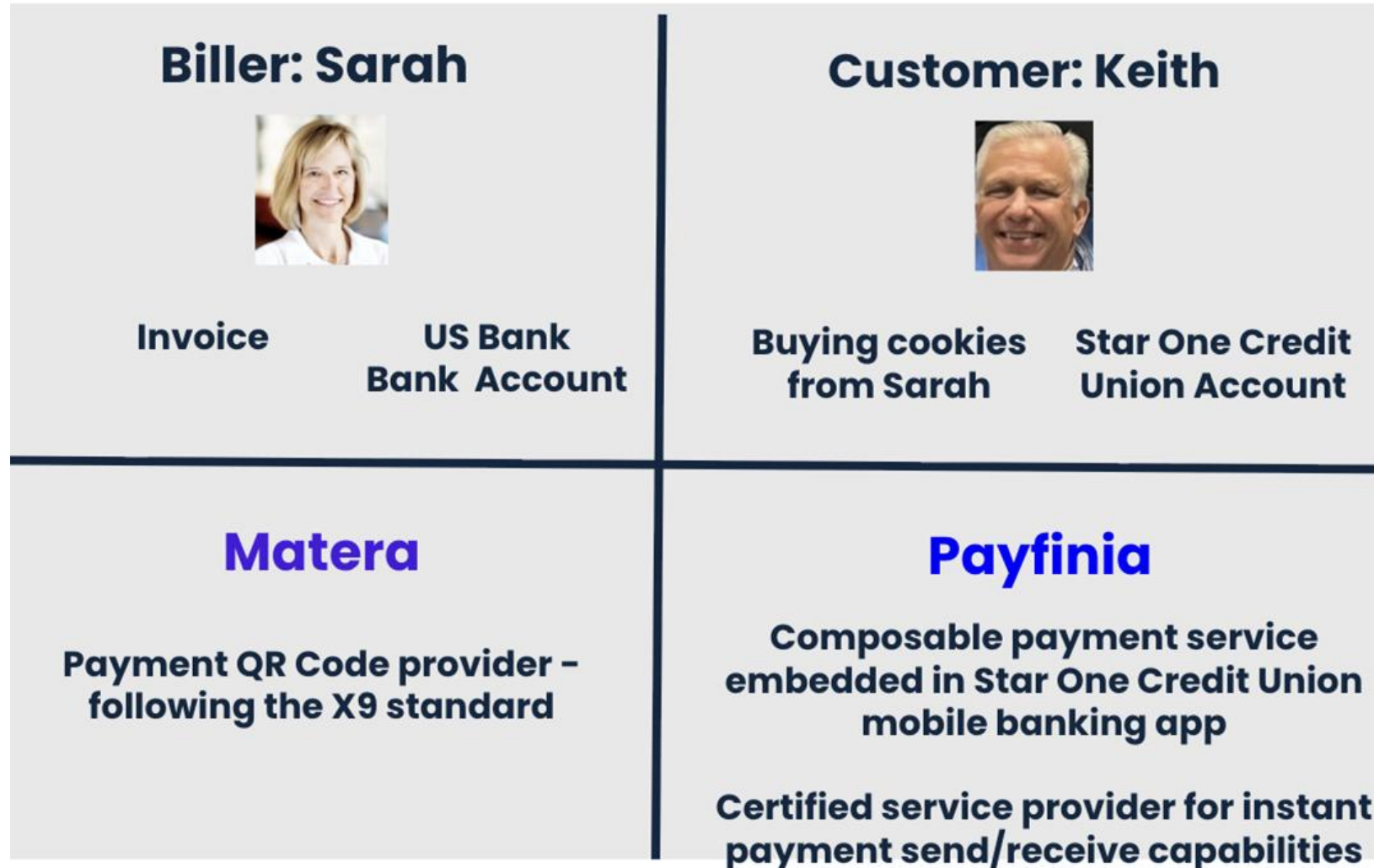
- Must be scanned from authenticated mobile app
- Presented by a merchant/biller - - to be scanned & paid by payer
- Dynamically generated for one time use
- Security is fundamental

Why should I care about payment QR Codes

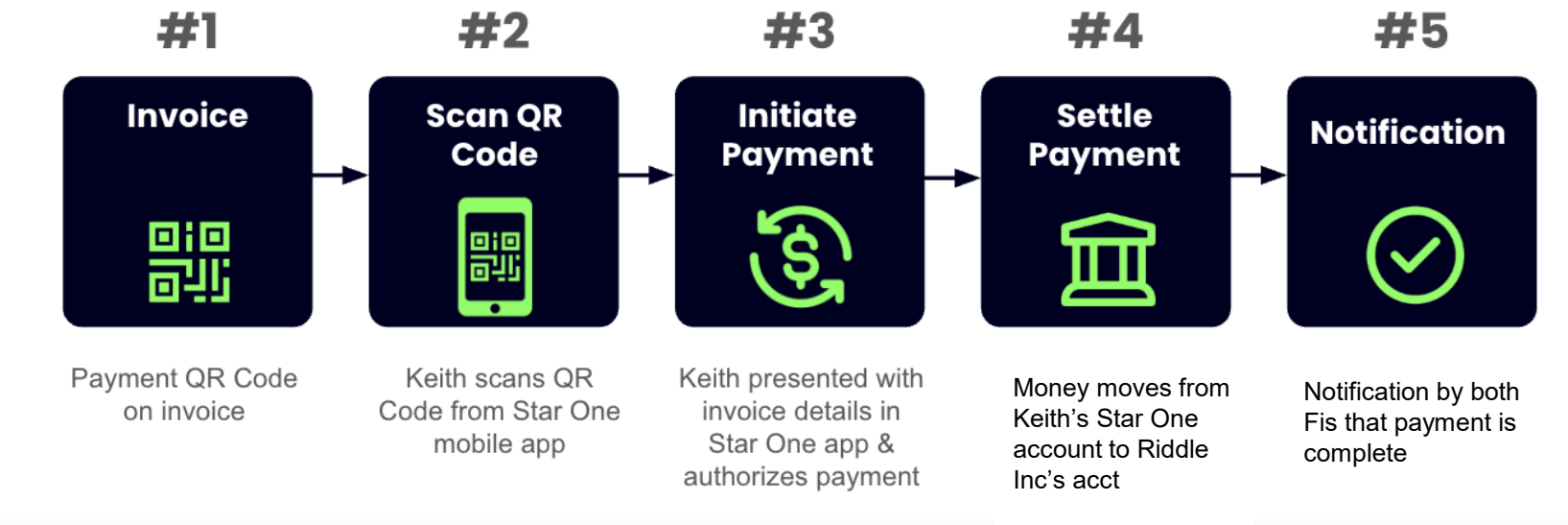
Opportunity!

- Drive volume of FedNow/RTP transactions
- More use cases - - consumer to business payments
- Monetize instant payments
 - Bill payment - opportunity to get money faster/irrevocable
 - Charge for speed - payment due today

Who's Who in the Demo



Demo – pay an invoice instantly via QR Code



Demo – pay an invoice instantly via QR Code

Invoice #1001

Biller: Riddle Inc.
456 Oak St
Portland, OR

Bill To:
Keith Riddle
123 Elm Apt 4B
Los Angeles, CA 90012

Invoice Details

Invoice Date: 07/26/2025
Terms: Net 30
Due Date: 08/25/2025

#	Date	Item	Qty	Rate	Amount
1	07/26/2025	Cookies	1	\$1.05	\$1.05
				Total	\$1.05

Ways to pay

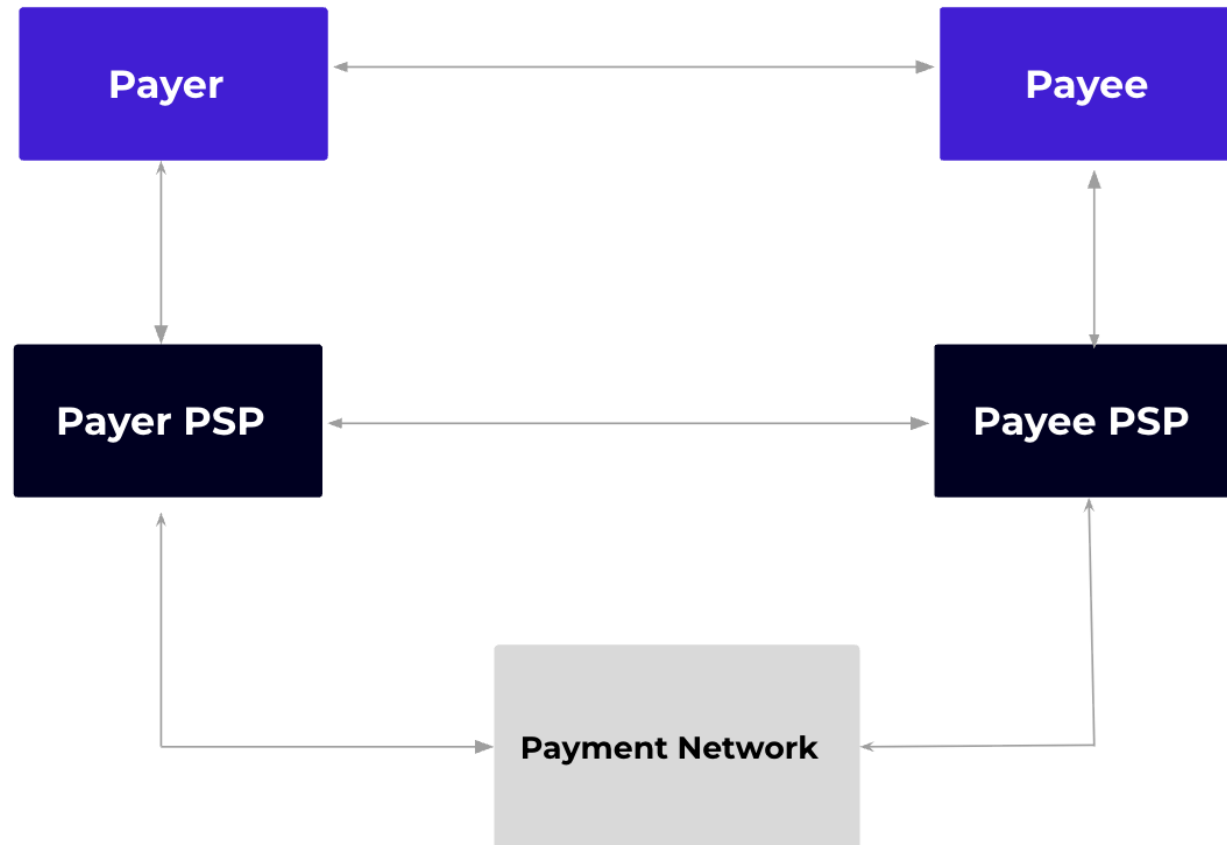


View and pay



Scan to Pay
instantly

How do Payment QR Codes work?



X9 workgroup creating a standard for Payment QR Codes



- Officially named "Accredited Standards Committee X9, Financial Services"
- Commonly referred to as "X9"

**50
Years Old**

- Accredited by the American National Standards Institute (ANSI) as a standards development organization for the financial services industry

**200+
Standards**

- Over 130 American National Standards
- Over 125 international ISO Standards

ASC X9 Overview

Leader in standards for financial services

Mission: To create and maintain US and international standards that improve payments and securities transactions, protect data and facilitate information exchange

Accredited by ANSI, with around 100 member companies



X9 workgroup members

Over 60 people across 25 companies

Representing:

- Banks
- Merchants
- Payment Networks
- Fed/TCH
- Vendors
- POS providers

X9 standard is use case driven

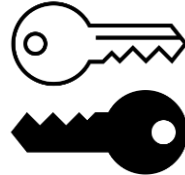
- Payments over different rails - driven by the payee's preferences
- Bills that are due in the future
- In-store and ecommerce payments that are paid immediately
- Dynamic discounts/late fees - applied automatically when the QR Code is scanned and designed to support many promotional strategies - examples
 - ◆ If you scan and pay by QR Code, get 10% off
 - ◆ if you scan and pay after the due date, a \$2 fee is automatically applied
- An ability for the payer to edit the amount due (e.g. to pay the minimum due on a credit card bill)
- Split payments - between people and networks
- Tips - Manually enter the desired % at checkout or choose a pre-set range of values

Security – at a high level



PKI

- Digital Signatures
 - Verify: public key
 - Sign: private key
- X9 Financial PKI
 - X9 Root CA certificate
 - X9 Issuing CA certificate
 - X9 QR Code Certificates
- X9.150 security architecture
 - QR Code signature
 - Payload Request signature
 - Payload Return signature
 - Payment Notification signature
- X9.150 crypto elements
 - Object to-be-signed
 - Object signature
 - X9 certificate chain



X9 PKI <https://x9.org/pki-industry-forum/>

DigiCert

<https://knowledge.digicert.com/general-information/community-root-authority-certificates>

Timing

- Q3 2025:
 - ◆ 1st successful FedNow transaction by payment QR Code
- Q4 2025:
 - ◆ Submit X9 standard for approval
- Q1 2026:
 - ◆ X9 standard published with Open API
 - ◆ In-market tests
- Q2/Q3 2026:
 - ◆ Digital banking providers update mobile apps
- Q4 2026:
 - ◆ Production use of payment QR code

Purpose of X9.150

Purpose

The purpose of this standard is to define a standard approach for QR code based payment initiation. The goal is to enable interoperable, secure, and real-time payment experiences across various networks, channels, and devices.

To support the purpose of interoperability, the QR Code string specified herein is based on the EMVCo QR Code Merchant-Presented mode specification published by EMVCo LLC that supports both card based and account-to-account based payments use cases. This version of the Standard applies solely to account-to-account (push) payments.

Scope of X9.150

Scope

This standard defines the structure, content, and security requirements for merchant-presented, dynamically generated payment QR Codes used to initiate push payments in the United States.

It includes:

QR Code String: Defines the structure and required data elements of the dynamic QR Code string that is presented to the payer at the point of interaction.

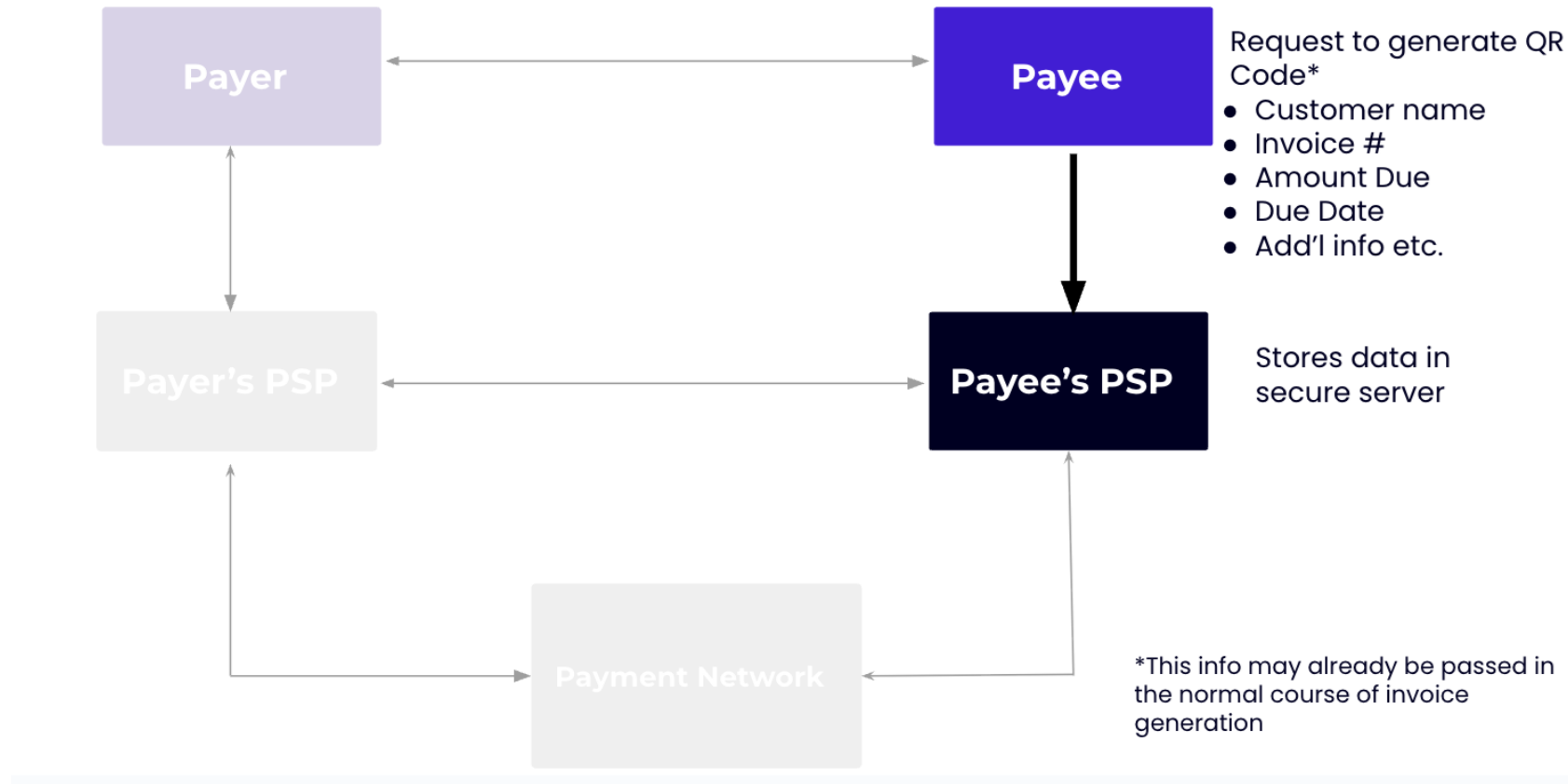
Payment Payload (JSON): Specifies the JSON payload referred by the QR Code String, including fields that identify the destination account, amounts, and related metadata.

Payment Notification: Defines the structure and delivery of an standardized notification from the Payer's PSP to the Payee's PSP, confirming that a payment has been initiated or completed through the selected rail.

Security: Establishes requirements for signing and validating the QR Code, Payload Request/Response and the Payment Notification using cryptographic methods, including alignment with X9.148 protocols.

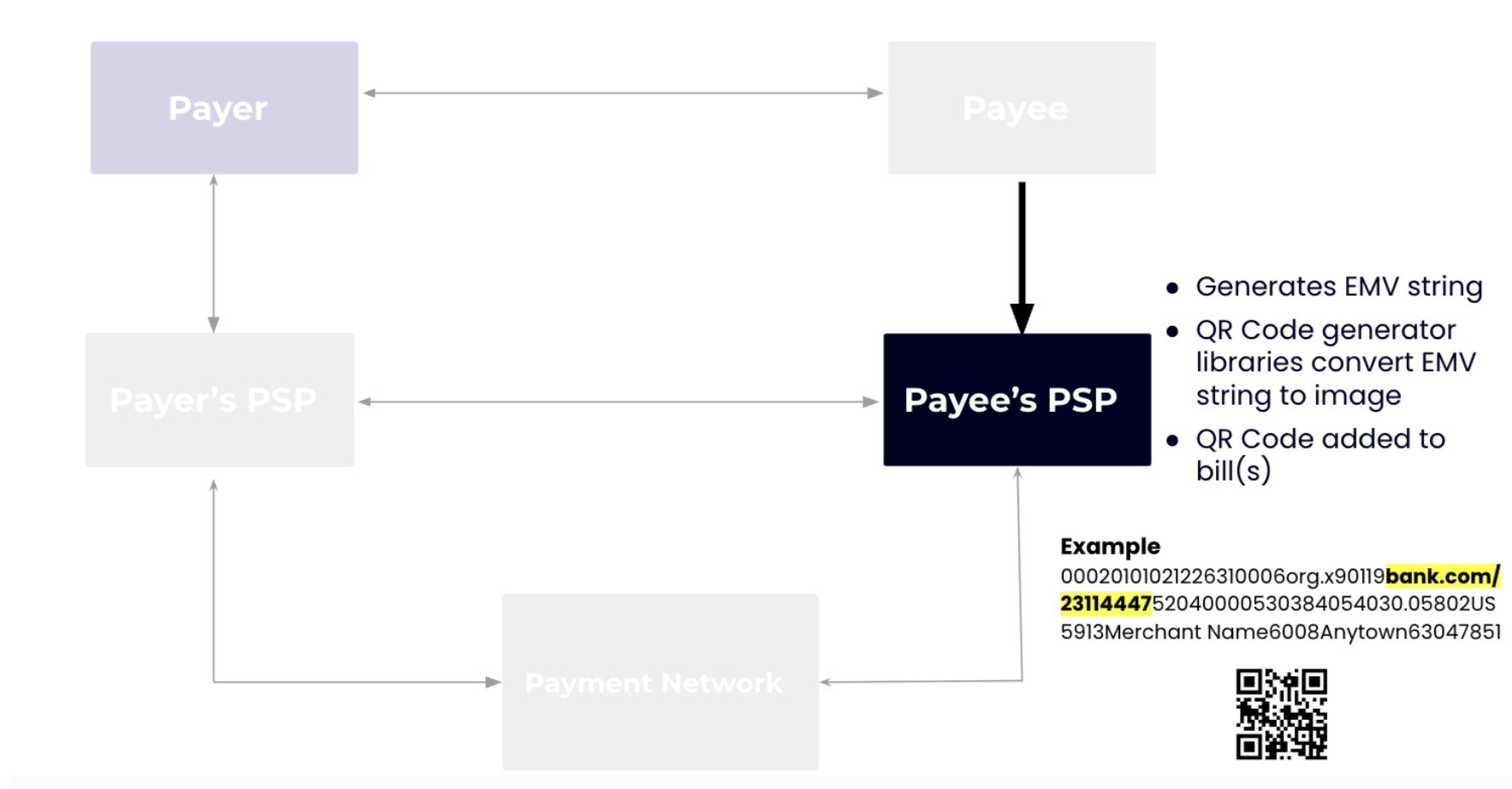
How do Payment QR Codes work?

Payee requests QR Code



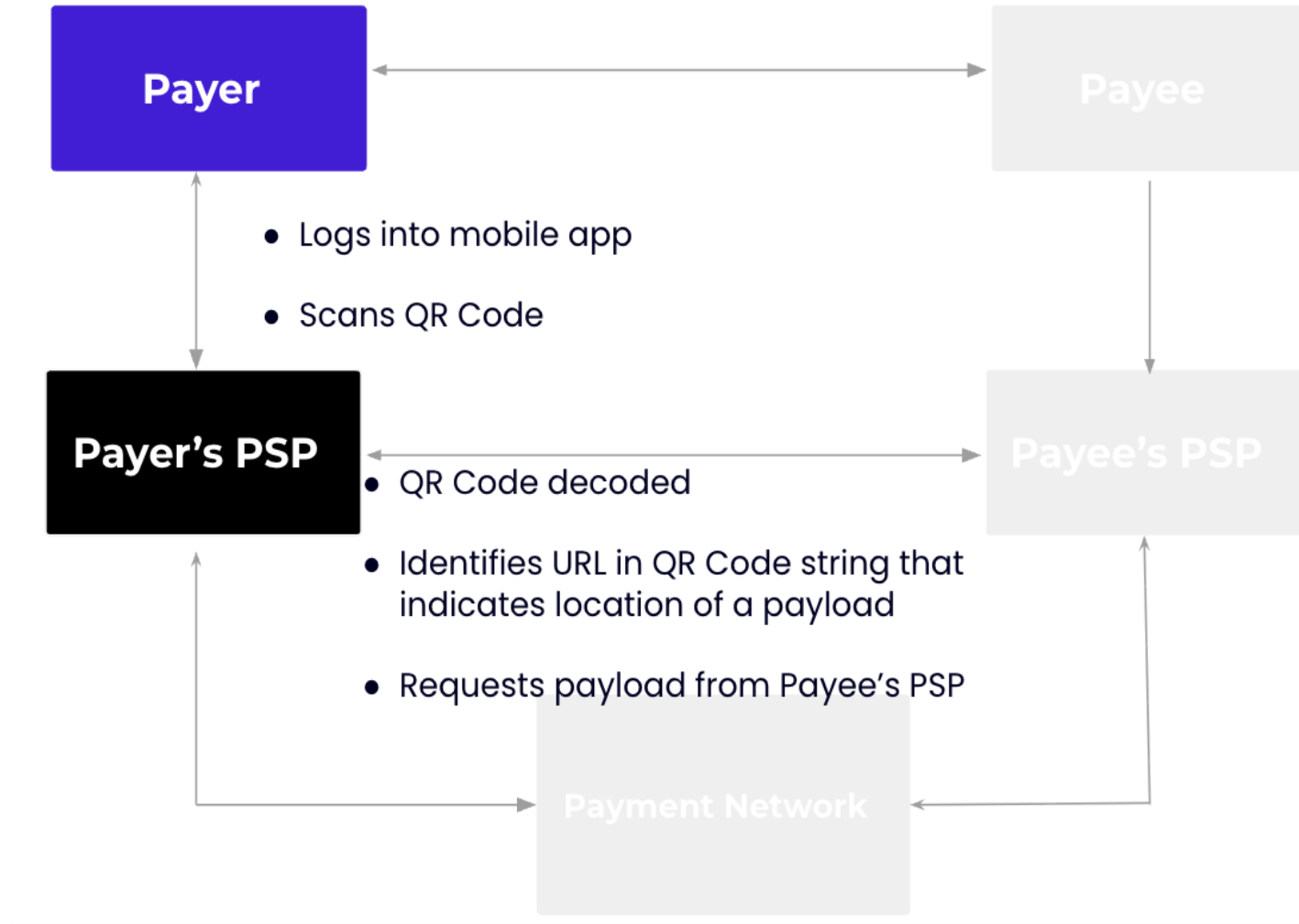
How do Payment QR Codes work?

QR Code generation



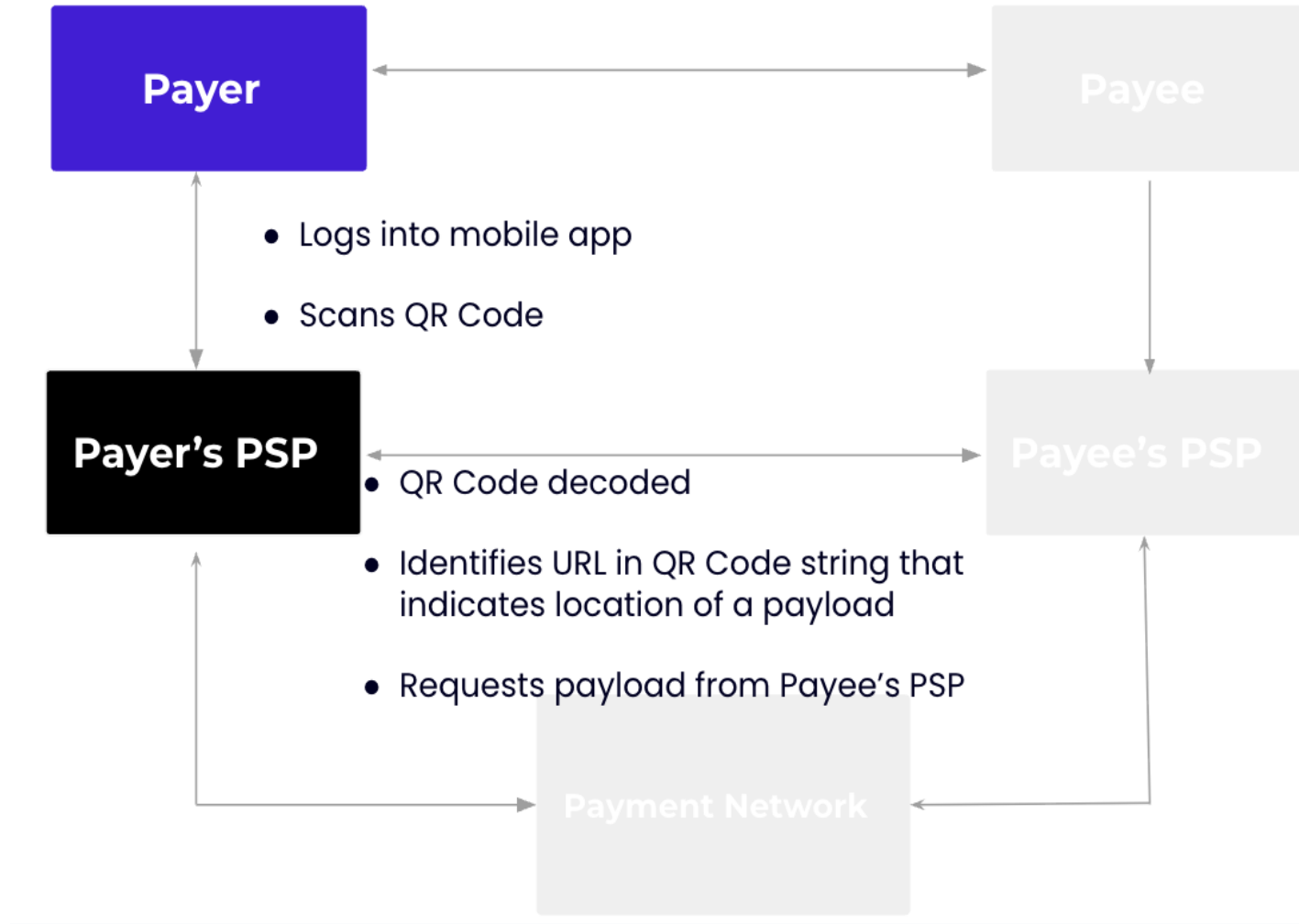
How do Payment QR Codes work?

QR Code scan & decoding



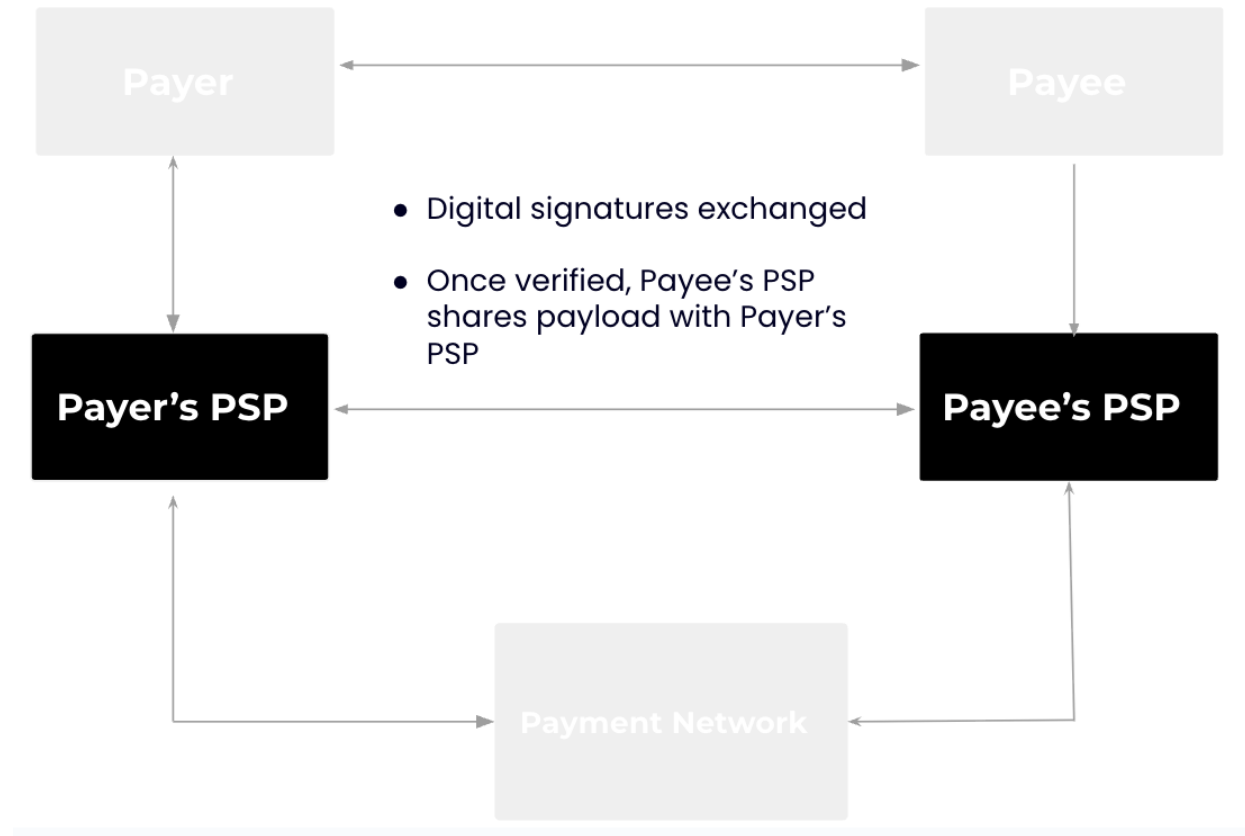
How do Payment QR Codes work?

QR Code scan & decoding



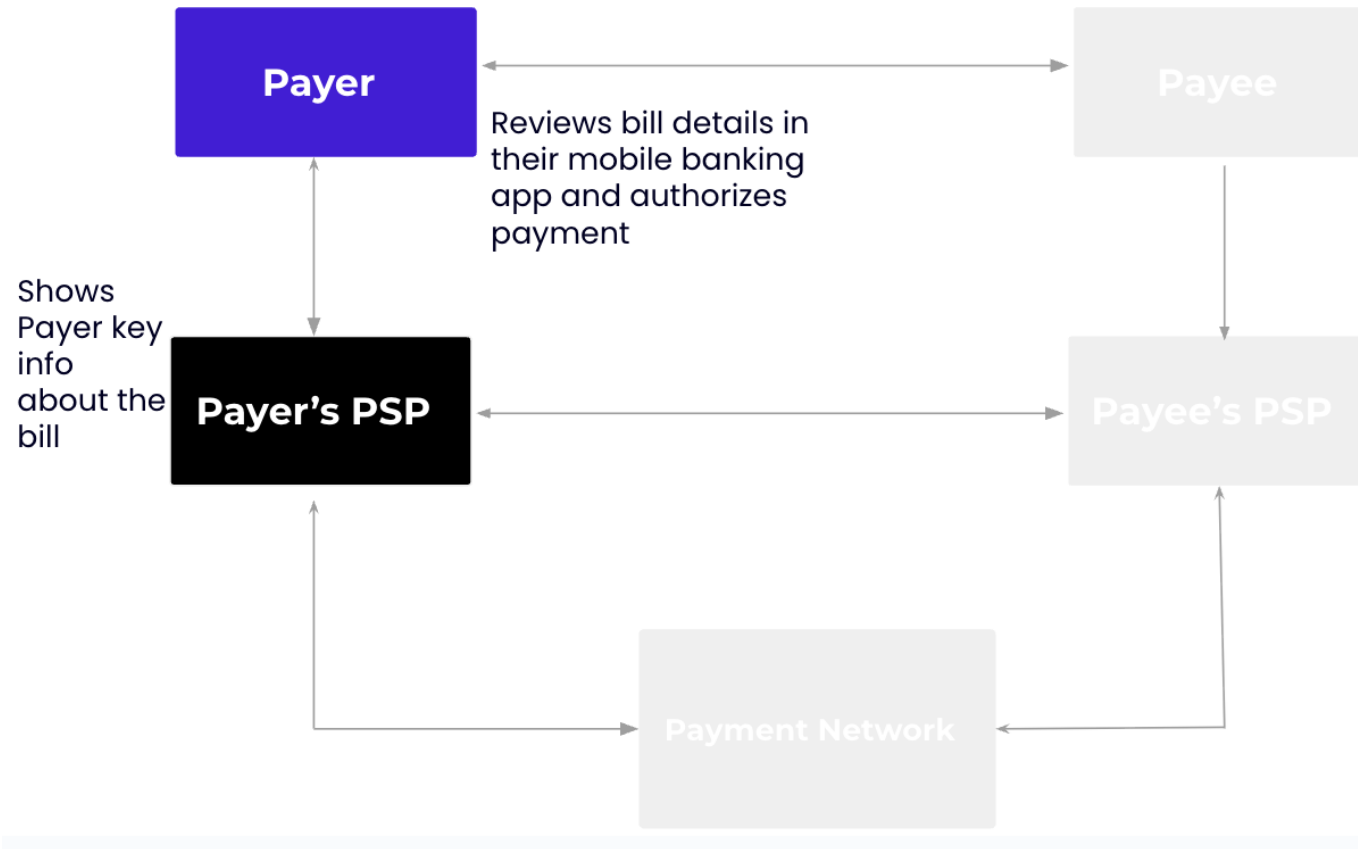
How do Payment QR Codes work?

Payload exchange



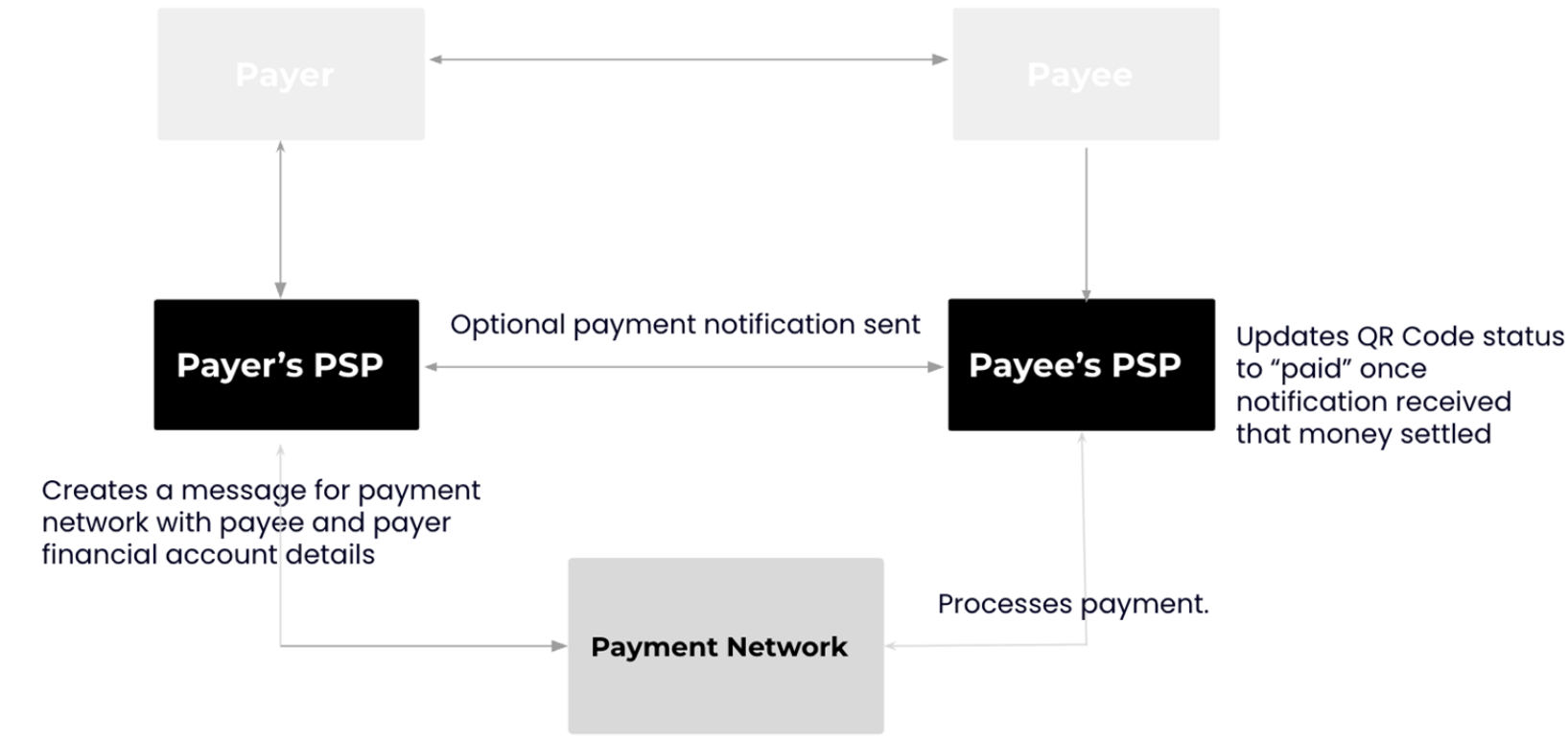
How do Payment QR Codes work?

Payer reviews and authorizes payment



How do Payment QR Codes work?

Money movement and QR Code status update



Live Demo: Real-time payments in action with QR codes

Join the FPC

www.fasterpaymentscouncil.org



We're doing it **from the industry**, with the industry, **and for the industry**.

The U.S. Faster Payments Council (FPC) serves as the membership organization solely focused on leading the efforts to ensure the successful advancement of faster payments.

From the Industry

The only payments association singularly dedicated to advancing faster payments, the FPC today boasts an inclusive and representative membership, consisting of: Business End Users, Consumer Groups, Financial Institutions, Payment Network Operators, Technology Providers, and many other stakeholders.

All hold equal power and voice.

With such representation and transparency, we are able to lead significant faster payments initiatives that have far-reaching impact and influence.

For the Industry

Understanding that education and awareness are key components of faster payments advancement, the **FPC identifies and leads educational efforts** to increase understanding and promote continued confidence in adoption and use of faster payments, including: Biannual Member Meetings, Town Halls, Industry Research, Educational Resources, Accreditation Programs.

And we have so much more planned as faster payments continue to heat up. Help us ensure the continued success of faster payments. **Become a member of the U.S. Faster Payments Council today.** fasterpaymentscouncil.org/members.

With the Industry

The FPC works side-by-side with members, facilitating critical dialogue and delivering productive resources, in many different forums, including: Work Groups, Board of Directors, Board Advisory Group.

Live Demo: Real-time payments in action with QR codes

Thank you for joining us!

The presentation materials and recording of today's Town hall will be available on the FPC website in the members-only page for FPC Events/Town Halls.

www.fasterpaymentscouncil.org