



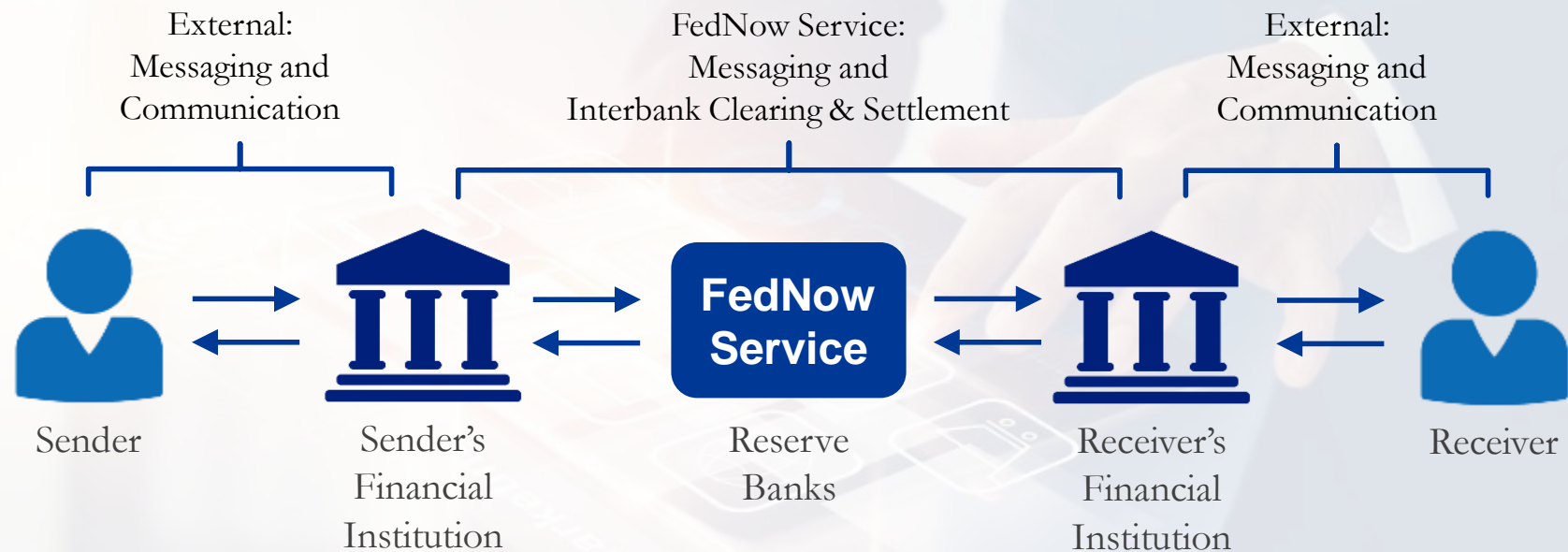
The U.S. Faster Payments Council – Town Hall Series

September 25, 2019

Recap of the Federal Reserve FedNowSM Service



FedNow Service Payment Flow



Proposed Features of the FedNow Service



Real-time processing of individual credit transfers on a 24x7x365 basis



Final and irrevocable settlement of payments in financial institutions' master accounts at the Reserve Banks



Integrated clearing functionality with messages based on the ISO[®] 20022 standard



Transaction value limit of \$25,000, at least initially



Real-time confirmation of validity of the receiver's account



Access to intraday credit on a 24x7x365 basis consistent with the Federal Reserve's Policy on Payment System Risk

Proposed Features of the FedNow Service



End-of-day balances calculated each day of the week with reports to support transaction monitoring, reporting, and reconciliation



Payment messages containing additional descriptive information related to payments, such as remittances or invoices



Access through FedLine[®] Solutions, which will be enhanced to support 24x7x365 access



Support for indirect access through agents and correspondent banks

Auxiliary Features Under Consideration



Request for Payment

Would allow the receiver to initiate a payment by sending a message to the sender



Directory

Would allow a sender to initiate a payment using the phone number or email address of the receiver



Fraud Prevention Services

Fraud-monitoring capabilities to aid in mitigating risk

Achieving Ubiquity in Faster Payments

According to the Federal Reserve, “nationwide reach is a key objective”

- A payment system with two operators can achieve nationwide reach in two primary ways – direct message exchange or dual participation
- To facilitate either approach, the ecosystem would be well-served to have common layers and elements agreed to by the operators
 - Standard message types, rules and other standards
- The Federal Reserve plans to explore these and other approaches to achieve nationwide reach through industry engagement



CONSIDERATIONS FOR ACHIEVING UBIQUITY – DIRECTORIES & INTEROPERABILITY

Directories

- A directory enables a payer to transfer funds to a payee (recipient) without knowing the details of the payee's account information by providing an alias, such as an email address or phone number
- Directories also enable the payer's payment services provider to route payment messages or clearing information to an appropriate entity, which then forwards the information to the payee's Payment Service Provider (PSP)
- Key Definitions:
 - Interoperable Directory Service Operator: The entity (or entities) that operates an Interoperable Directory Service and provides a mechanism to enable each Qualified Player to identify and communicate with other Qualified Players
 - Qualified Player: A Participant that has authorized access to a payment Directory with some ability to create and/or modify Directory contents, as well as the ability to nominate new Participants
 - Sponsored Entity: A payment directory participant that is sponsored by a Qualified Player to provide a Payment Directory service to directory Participants. The sponsoring Qualified Player is responsible and accountable for Sponsored Entity activity within the payment Directory
 - End User: An Entity, such as a business or Consumer, that uses a payment Directory for the purpose of sending or receiving payments

Desired Characteristics of Directories

The Fed's Directories Work Group focused on directory options that satisfy the following ideals:

- Facilitate the achievement of ubiquity - extend to all payers to ensure that any entity has the ability to pay any other entity
- Provide open access to all “qualified” players
- Enable ease of entry and exit from the system for Qualified Players and End Users
- Ensure safety and security - end users and service providers have confidence and trust in the safety and security of the directory

The Directories Work Group also relied upon the following design principles:

- It should service all types of faster payments across the spectrum of consumer and business types
- It should have a process to incent Qualified Players and Sponsored Entities to register End Users as both senders and receivers to enable ubiquity
- Its operating model should be able to support a multi-provider directory solution for ubiquitous access
- Settlement should be separate from directory lookup (considerations were security, complexity, and innovation)

Federated Directory Options

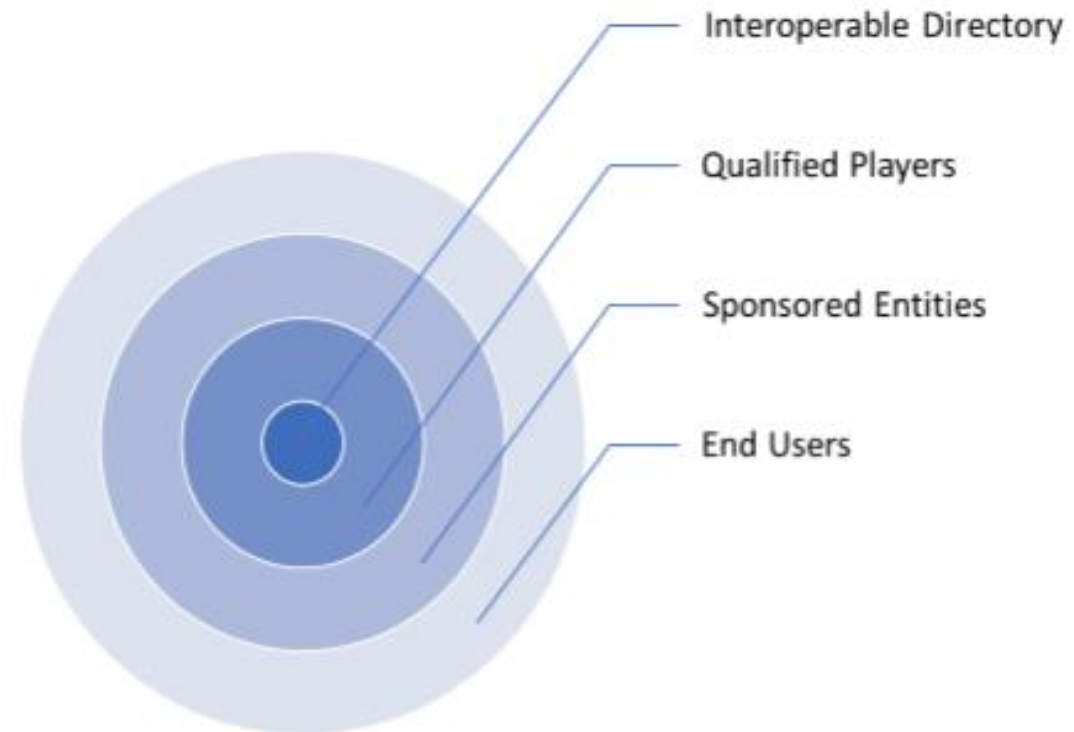
Options Analyzed by the Federal Reserve's Directories Work Group

	Option 1	Option 2	Option 3	Option 4
Data	<ul style="list-style-type: none">Does not store any Alias data, only a list of qualified players	<ul style="list-style-type: none">Data pre-populated from other Directories	<ul style="list-style-type: none">No central communication point. QPs exchange data directly with each other but do not store data	<ul style="list-style-type: none">No central communication point. Data pre-populated from other Directories
Look-Up	<ul style="list-style-type: none">Interoperable Directory Service queries all federated directories for every transaction to determine payee match	<ul style="list-style-type: none">Interoperable Directory Service queries within itself to determine payee match	<ul style="list-style-type: none">Payer's QP queries every other QP for every transaction	<ul style="list-style-type: none">Payer's QP queries its own internal Directory which is pre-populated from other federated QPs
Duplication remediation	<ul style="list-style-type: none">Interoperable Directory Service runs internal or external logic to resolve multiple matches	<ul style="list-style-type: none">Interoperable Directory Service runs internal or external logic to resolve multiple matches	<ul style="list-style-type: none">Payer's QP runs internal logic to resolve multiple matches	<ul style="list-style-type: none">Payer's QP runs internal logic to resolve multiple matches

Faster Payment Directory Stakeholders

Three methods to structure an Interoperable Directory Service Operator IDSO(s) in relation to the Governance Body:

- 1) Combined Governance Body and IDSO – a single entity.
- 2) A distinct Governance Body and a single separate IDSO.
- 3) A distinct Governance Body and separate, potentially other federated IDSOs (e.g., one or more for P2P, one or more for B2B).



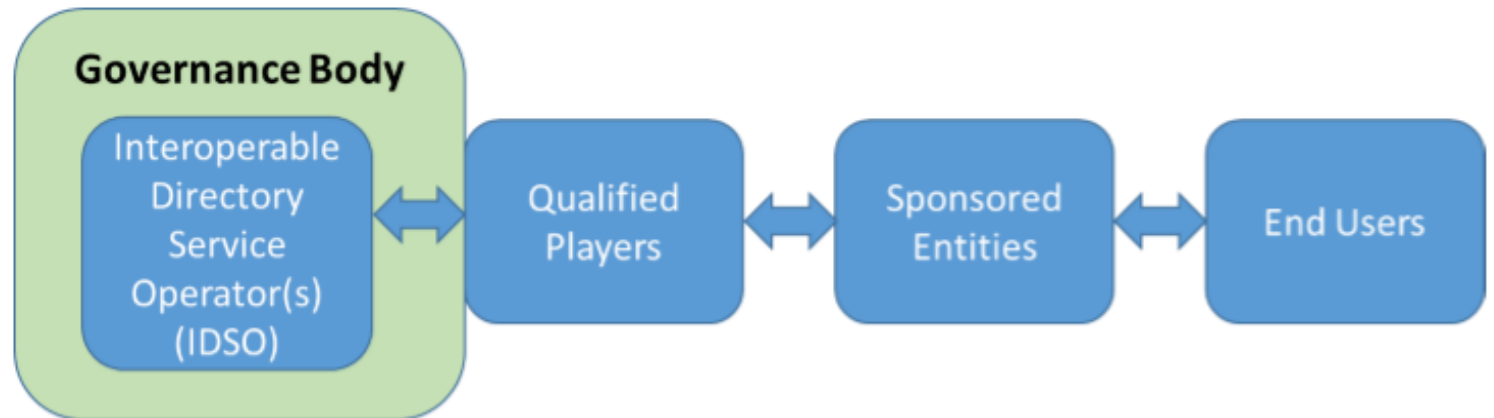
Interoperable Directory Service Operator (IDSO) and Governance Body

While an IDSO would be significantly influenced by the needs of its customers (Qualified Players) and the End Users they ultimately serve, an IDSO also would look to the Governance Body to:

Establish and enforce rules and decision-making processes;

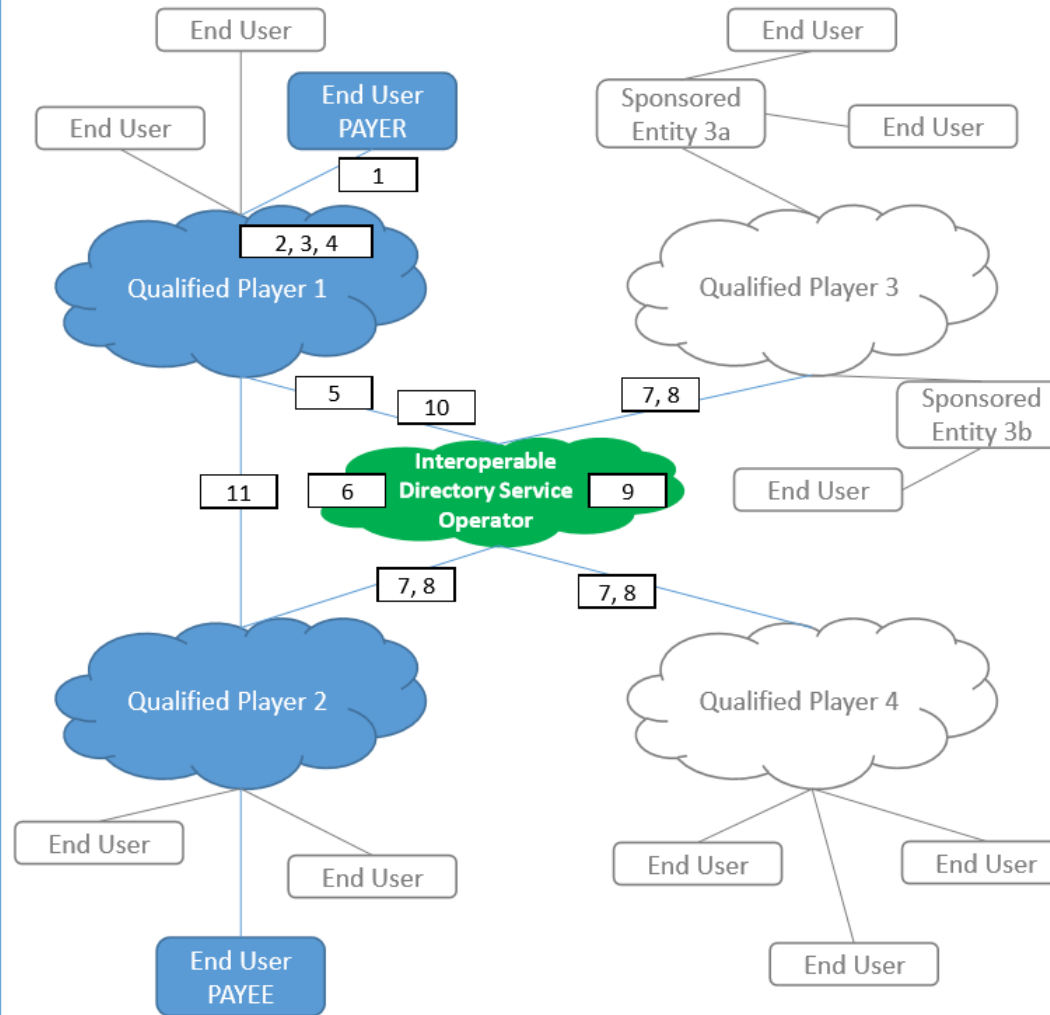
Define criteria and requirements for the IDSO;

Mediate disputes between IDSOs, in the event there are multiple IDSOs, in accordance with the Governance Framework.



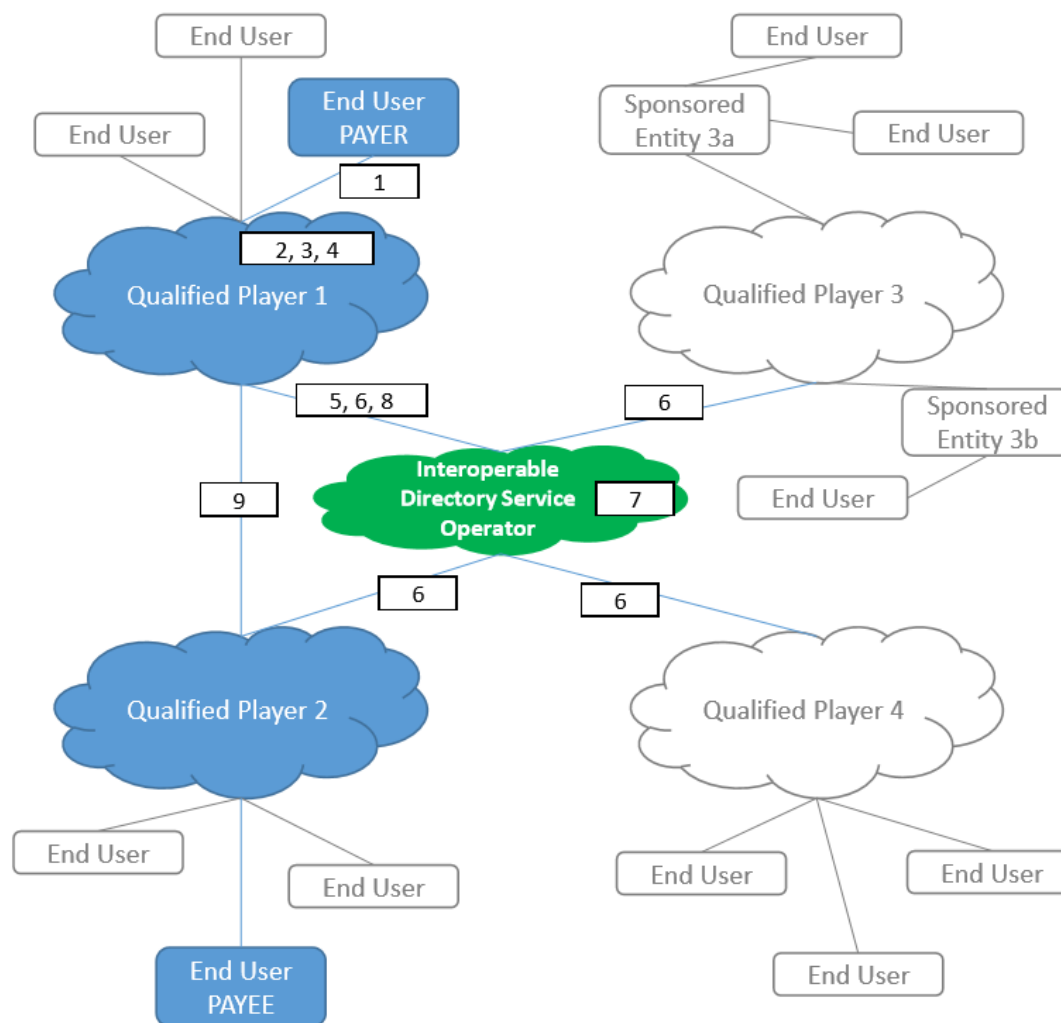
Option 1: Interoperable Directory Service holds no data, queries every other Directory for every transaction

1. Payer initiates and authorizes credit push payment and provides payee's identifier to QP
2. Payer's QP authenticates payer
3. Payer's QP approves transaction (good funds)
4. Payer's QP determines on-us or on-them
 - a) If on-us, complete internally [end this scenario]
 - b) If on-them, query Interoperable Directory Service [next step]
5. Payer's QP sends query request to Interoperable Directory Service
6. Interoperable Directory Service runs internal logic
7. Interoperable Directory Service sends look-up request to all federated Directory QPs
8. Other federated Directory QPs respond to Interoperable Directory Service to confirm payee match or no match
9. Interoperable Directory Service runs logic to resolve multiple matches. (For example, if QP2 and QP4 both claim a payee match)
10. Interoperable Directory Service sends response message to Payer's QP with either
 - a) A single match for the payee
 - b) Multiple matches for the payee (if the payee is registered with multiple QPs)
 - In option (a) the Interoperable Directory Service runs some kind of hierarchy logic to resolve multiple matches.
 - In option (b) the Interoperable Directory Service returns *all* matches to the payer's QP and lets that QP choose.
11. The payer's QP executes the transaction with the payee's QP outside of the Interoperable Directory Service – payment message, Alias detokenization, clearing, receipt, settlement, and reconciliation



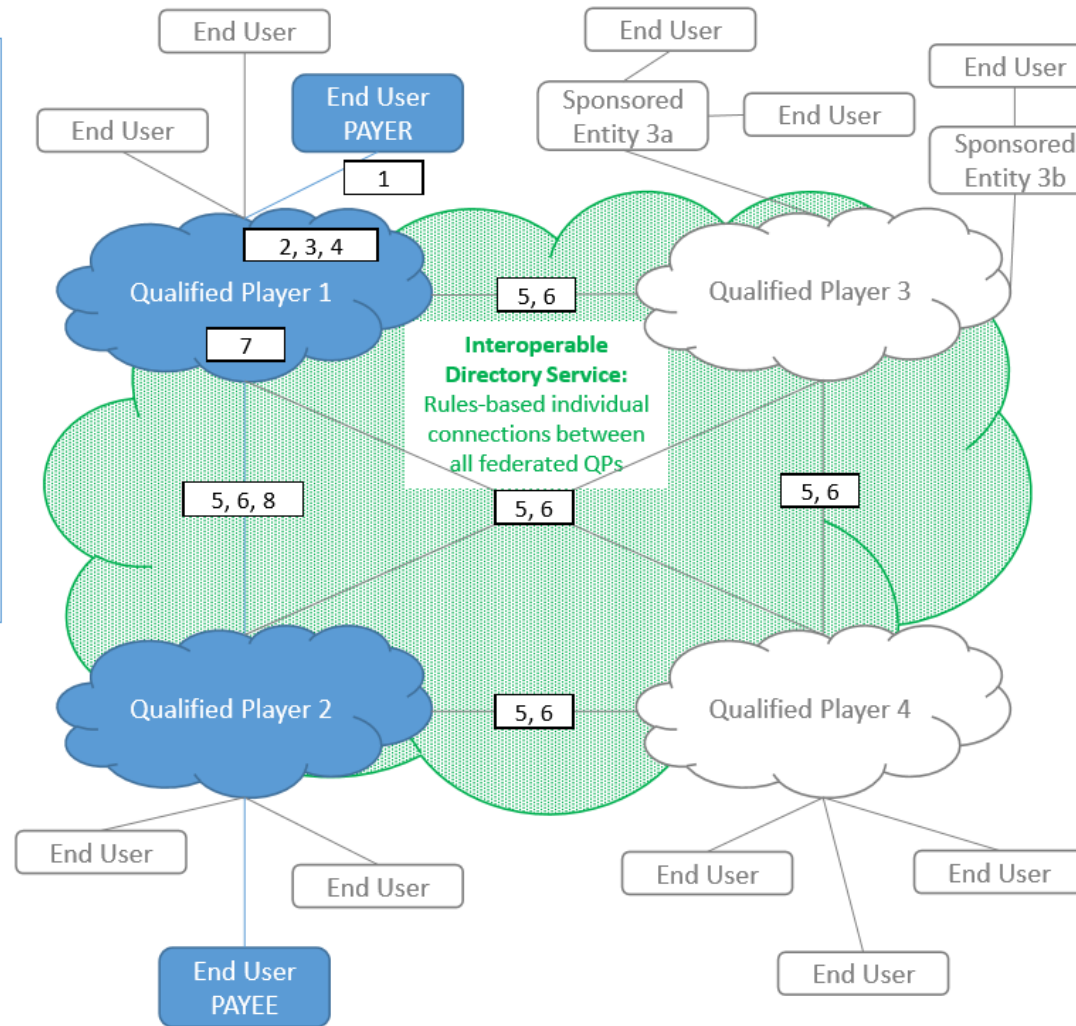
Option 2: Interoperable Directory Service pre-populated with data from other Directories

1. Payer initiates and authorizes credit push payment and provides payee's identifier to QP
2. Payer's QP authenticates payer
3. Payer's QP approves transaction (good funds)
4. Payer's QP determines on-us or on-them
 - a) If on-us, complete internally [end this scenario]
 - b) If on-them, query Interoperable Directory Service [next step]
5. Payer's QP sends query request to Interoperable Directory Service
6. The Interoperable Directory Service is pre-populated with data from all other Directories in the federation. Other QP Directories send data updates to the Interoperable Directory Service as needed.
7. The Interoperable Directory Service runs internal logic to resolve multiple matches. (For example, if QP2 and QP4 both claim a payee match)
8. Interoperable Directory Service sends response message to Payer's QP with either
 - a) A single match for the payee
 - b) Multiple matches for the payee (if the payee is registered with multiple QPs)
 - In option (a) the Interoperable Directory Service runs some kind of hierarchy logic to resolve multiple matches.
 - In option (b) the Interoperable Directory Service returns *all* matches to the payer's QP and lets that QP choose.
9. The payer's QP executes the transaction with the payee's QP outside of the Interoperable Directory Service – payment message, Alias detokenization, clearing, receipt, settlement, and reconciliation



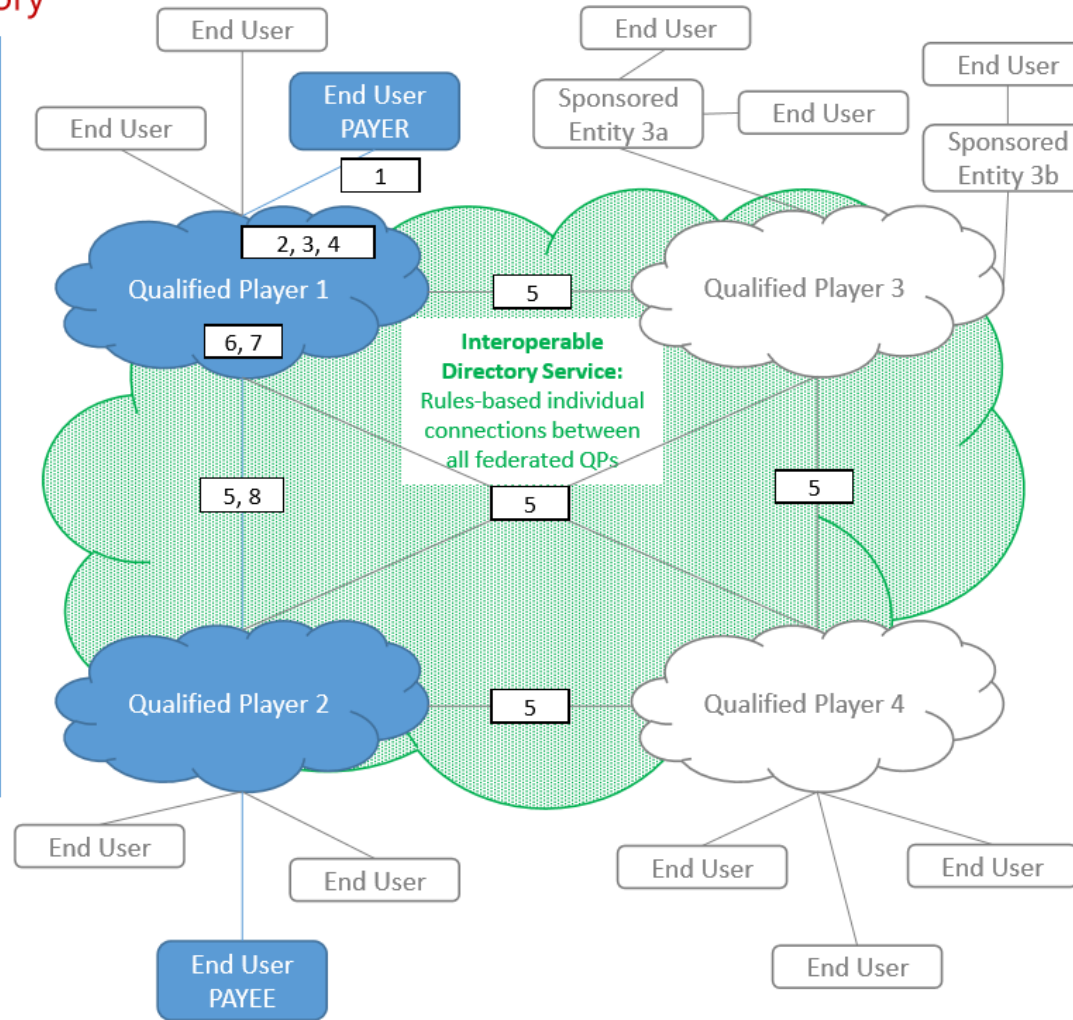
Option 3: Individual connections between all federated QP Directories; a QP queries every other QP for every transaction

1. Payer initiates and authorizes credit push payment and provides payee's identifier to QP
2. Payer's QP authenticates payer
3. Payer's QP approves transaction (good funds)
4. Payer's QP determines on-us or on-them
 - a) If on-us, complete internally [end this scenario]
 - b) If on-them, query internal Directory of other QPs [next step]
5. Payer's QP sends query request to all federated Directory QPs
6. Other federated Directory QPs respond to Payer's QP to confirm payee match or no match
7. Payer's QP runs logic to resolve multiple matches. In the diagram, what happens if QP2 and QP4 both claim a payee match?
8. The payer's QP executes the transaction with the payee's QP outside of the Interoperable Directory Service – payment message, Alias detokenization, clearing, receipt, settlement, and reconciliation



Option 4: Individual connections between all federated QP Directories; a QP stores a full copy of every other QP's Directory

1. Payer initiates and authorizes credit push payment and provides payee's identifier to QP
2. Payer's QP authenticates payer
3. Payer's QP approves transaction (good funds)
4. Payer's QP determines on-us or on-them
 - a) If on-us, complete internally [end this scenario]
 - b) If on-them, query internal Directory of other QPs [next step]
5. Each QP maintains an internal Directory with pre-populated data from all other QPs in the federation. QPs send data updates to the all other QPs as needed. Through operating rules, the QPs would communicate directly with each other. Every QP would know and cache the customers that every other QP services. When a new QP signs up they would broadcast those details.
6. Payer's QP queries its internal Directory of other QPs to determine payee's QP.
7. The payer's QP runs internal logic to resolve multiple matches. In the diagram, what happens if QP2 and QP4 both claim a payee match?
8. The payer's QP executes the transaction with the payee's QP outside of the Interoperable Directory Service – payment message, Alias detokenization, clearing, receipt, settlement, and reconciliation



Outstanding Questions / Challenges

Challenges

- “One of the key challenges in achieving interoperability across distinct faster payment directories is the diversity of directory architectures. There are several paradigms used for describing payment directory networks—distributed, centralized, hybrid. Each network type has its own unique transaction data elements and processes. Most faster payment directories share certain features such as real-time payment data availability, use of account aliases, API integration and ISO 20022 standards. However, they may differ with respect to customer relationship models and data ownership agreements, alias formats and identifiers, and capabilities in terms of real-time anti-money laundering and know-your customer screening, as well as contextual payments data (e.g., hyperlinks to external data sources and image files, such as JPEGs).”


Remaining Questions

- How would the industry implement message formats and business process standards in a manner that allows payments to traverse faster payment solutions while meeting the needs of individual solutions and allowing for differentiation and competition?
- How would the industry address the challenges associated with the existence of multiple proprietary directories that perform different functions?
- How would the industry achieve real-time inter-provider settlement in a way that is fair, safe, and efficient?
- What types of entities should be allowed to become Qualified Players?
- To what extent will various stakeholders be allowed to use the data assets and productize the information in the directory?
- How will the FPC go about gathering detailed user requirements for the faster payments directory?

Interoperability

Interoperability requires coordination on various rules and standards

- Technical specifications
- Message formats
 - ISO 20022 is flexible on implementation
- Roles and responsibilities of operators, PSPs, vendors, end users
- Allocation of liability
- Resolution of fraud, errors
- Credit/liquidity requirements
- Details on remittance information
- Security standards
- Timing of funds availability
- End user protection



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