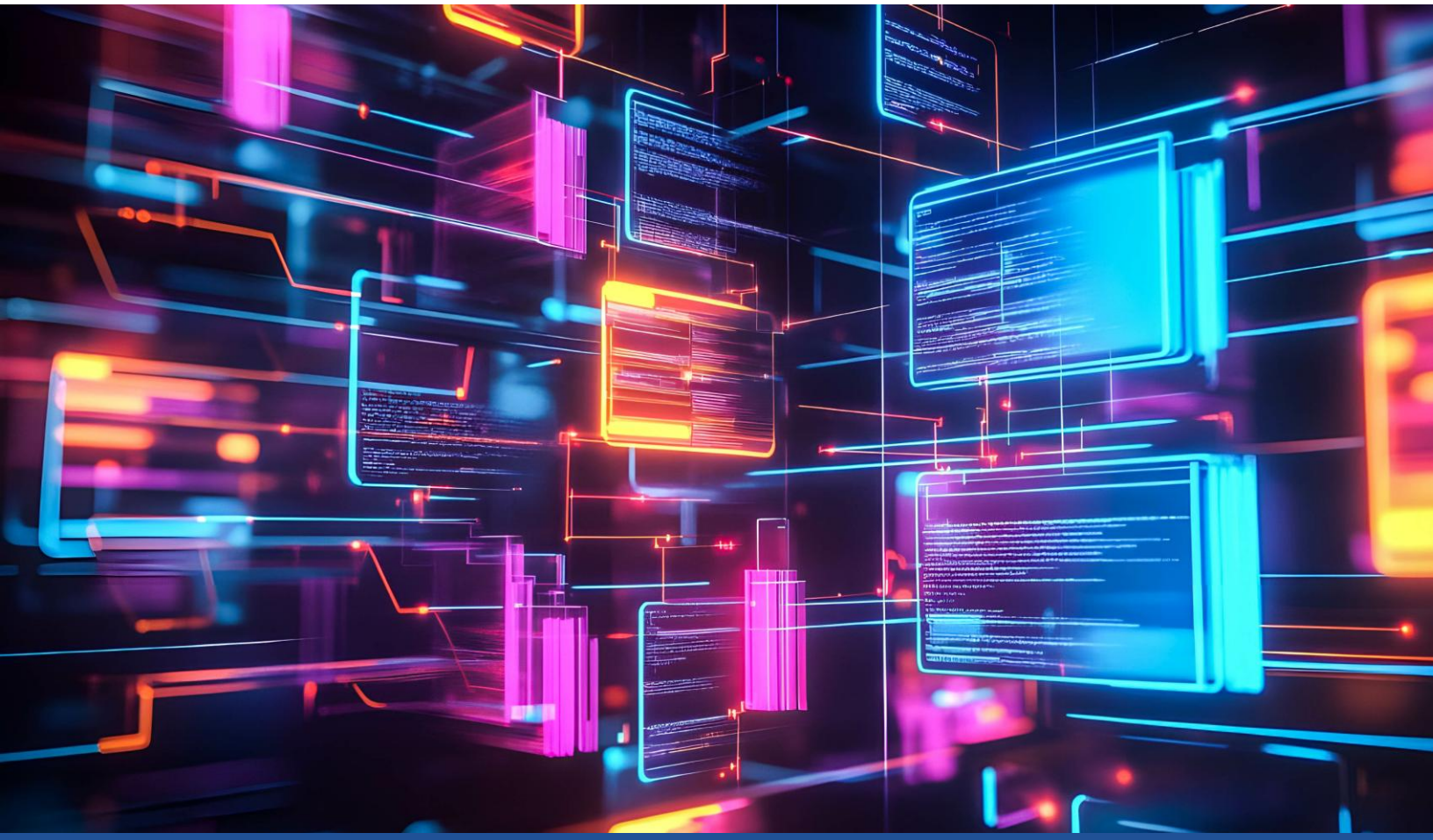

How a Directory Service Accelerates Instant Payments: Consumer Bill Pay Example

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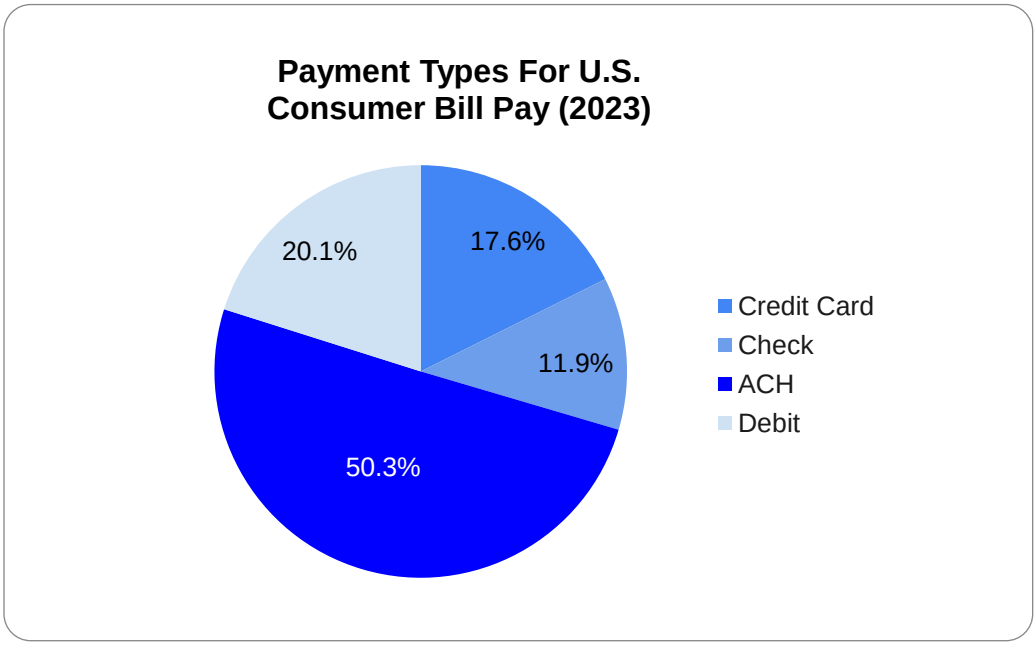
Introduction

As the digital payments ecosystem continues to innovate and grow, and financial institutions, merchants, fintechs, and consumers look for more flexibility and choice in accepting payments and sending payments, alias directories could play a more integral role in many different use cases. Refer to the U.S. Faster Payments Council (FPC) Use Case repository for a full listing of faster payments use cases.[1] This brief takes a deep dive into the consumer bill payment use case to show how an open directory service could streamline the consumer bill payment workflow and accelerate the use of instant payments.

The Challenge with Consumer Bill Pay in the United States

There is one thing all businesses agree on - getting paid is critical, but also increasingly complicated. Businesses can be paid in many ways - ACH, check, credit, debit, cash among other methods. Each payment method is handled differently with varied processes and settlement timelines.

U.S. consumers pay nearly seventeen billion bills per year. Nearly one third of those are paid using check or credit cards, two particularly complicated and expensive methods due to the potential for fraud, chargebacks, and reconciliation challenges. In the case of cards, interchange adds an extra layer of cost which may or may not be passed on to consumers. Billers also must wait several days or more for payments via card, check, or ACH to get deposited into their bank account which impacts their cash flow management.[2]



Open Directory Service

An open directory service could be available for use by any participating payment solution using common standards and methods to facilitate ease-of-use and adoption of faster payments by associating an alias to a specific account.

An open directory service would not replace existing closed-network alias-based capabilities, but rather, could function alongside of and outside of these solutions where payment aliases do not currently exist.

An open directory service can operate and be governed in a myriad of ways. It could be one giant database and service managed by one entity; it could be multiple directories connected by technology or some other functionally equivalent distributed directory of directories solution.

The intent of this brief is not to suggest one way is better than another, but to showcase how the existence of an open directory service (of any type) can facilitate faster payments.

The consumer side of the bill pay experience is equally challenging. Datos found that over 30% of consumers would consider changing payment methods for faster payment processing. Additionally, 54% of consumers had paid a bill late in the previous twelve months, which could be attributed to forgetting to pay the bill, a deficiency in funds, or other reasons.[3] Both billers and consumers would benefit if bills could be paid easily and instantly.

But leveraging the FedNow Service® or RTP® instant payment rails to pay a bill is challenging today. A biller must share sensitive bank account credentials so the consumer can push credit to the biller's account. If the biller were only required to share an alias (e.g., mobile phone or email) that was tied to their bank account, this would make for a much more secure and seamless transaction.

An open directory service can enable this type of alias-based payment (see **Open Directory Service** side bar).

It is true that in today's world, large billers store consumers' financial account credentials in a directory upon initial setup so bills can be paid by ACH debits or cards automatically on a recurring basis. While 60% of bills paid are one-time payments, small to medium businesses (SMBs) are willing to offer a discount of more than 4% for early payments, and 54% of SMBs indicated they would pay a fee to receive instant payments.[4]

Moreover, these payments which are sent via ACH can take one to three days to settle and can be disputed up to sixty days after the payment. Payments sent via ACH debit can fail due to insufficient funds.

This report takes a deep dive into the consumer bill payment use case to show how an open directory service could streamline the consumer bill payment workflow and accelerate the use of instant payments. It also compares how the user experience is different when a directory service is NOT part of the process.

Directories in the United States

Many robust directories already exist in the United States. For example, P2P solutions typically have their own directory so consumers using their service can pay each other by sharing a phone number or email. Similarly, many large billers have already invested in and manage a robust directory.

Directory vs. Directory Service

A **directory** is often associated with a file system – a place to store information about people, organizations, or resources. A **directory for payments** is not a simple list of people and related information in a database. A **payment directory** associates an alias and other pertinent information with financial account credentials. It securely maintains information, and there are rules governing what data is included, in what format, who has access, how they can and cannot use it among other things.

Directories that facilitate payments provide a "service" that enable people and businesses to pay each other without having to share sensitive bank account credentials. Thus, a **directory service** is a tool to make instant payments easy for consumers and businesses, and which can accelerate the adoption of instant payments.

The challenge is that little interoperability exists between these closed-loop P2P systems. For example, if a consumer manages their funds in a PayPal® digital wallet, but one of their billers only accepts Zelle®, the consumer has no ability to apply their PayPal funds to pay the biller. These P2P directories do not facilitate every type of payment transaction.

In addition, there are many payments that happen outside of these closed directories. Millions of small businesses do not have the resources to either support their own directory service or participate in one or more directory services. Furthermore, 60% of bill payments are one-time payments which may obviate the need for directory services at all.[5]

Open Directory Service

To illustrate the power of an open directory service for instant bill payments, the following is a deep dive into how this model could work. One type of open-directory service is a centrally managed directory. It is typically operated by a single governing entity who securely maintains a database with consumer and business financial information. This entity also manages the services surrounding this information so others can securely access it, update it, and leverage it to efficiently move money from one bank account to another.

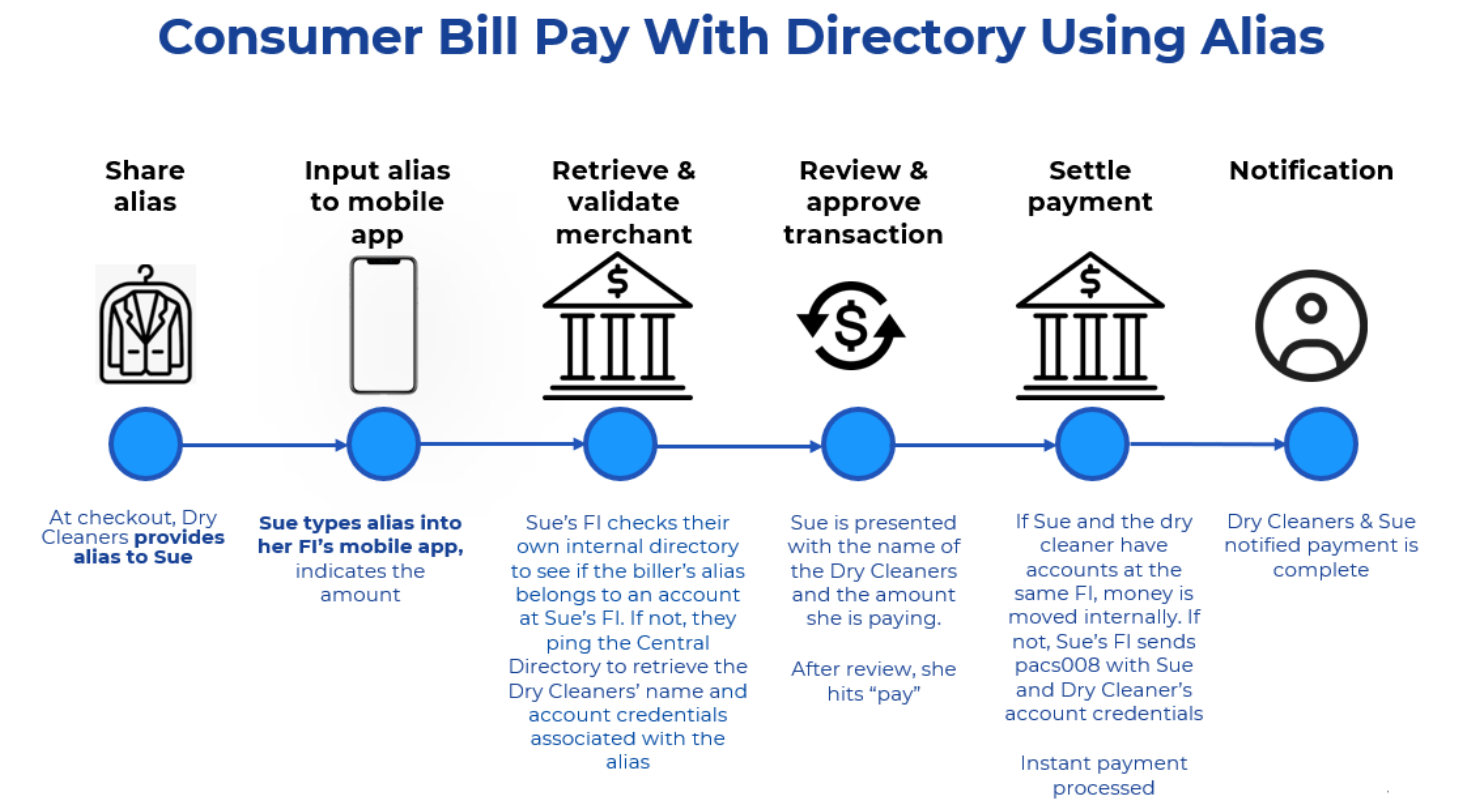
Financial information in the centrally managed directory could include the following:

- Alias: e-mail, phone number, SSN/EIN, or a random number
- Account credentials (e.g., RTN and account number)
- Consumer/business name
- Name of the financial institution that registered the alias
- Public tax identifier like an SSN or EIN
- Number of fraud transactions associated with that alias

Fraud data could be particularly useful in protecting consumers such that instant payment transactions related to an alias and found to be fraudulent are added to the central-directory. When a financial institution starts an instant payment transaction, they query the central directory and are returned all the information related to that alias. If there are too many fraud incidents associated with that alias, the financial institution can decide not to process that transaction.

Along with this centrally managed directory, every financial institution can keep a local copy of the directory with only the aliases linked to their accounts. This is useful to speed up transaction processing when both the sender and the receiver accounts are held in the same financial institution.

Once consumers and businesses establish with their financial institution a unique alias associated with their account, they can easily pay each other using this alias or a QR code that is embedded with the alias.



When a consumer (Sue) wants to pay her local dry cleaner instantly from funds in her DDA, the dry cleaner gives their alias to her. She types it into her financial institution's mobile app, indicates the amount and reviews the transaction to make sure she is paying the correct merchant and amount. She then hits "pay." Sue's FI checks their own internal directory to see if the biller's alias belongs to an account at Sue's FI. If so, they move the money internally. If not, they make a real-time API call to the central directory to validate the merchant's alias is legitimate and get the associated bank account credentials so the money can be moved from Sue's to her dry cleaner's bank account. This all happens in under six seconds.

If there was not a directory service, Sue would have to ask her dry cleaner for their bank account and routing number every time she needed to make a payment. She would somehow give this information to her FI and ask them to move money from her account to the dry cleaner's account. Even if the dry cleaner were willing to share their account credentials, it is unlikely this transaction could happen quickly, so the consumer would likely use another form of payment.

Conclusion

For the simple bill pay use case, it is easy to see how an open directory service facilitates instant payments. While the dry-cleaning example listed above is hypothetical, there are real-world examples of instant payments schemes like UPI in India and Pix in Brazil that have benefitted from an open directory service.

India has a directory of directories	**Brazil has a central directory**
The Unified Payments Interface (UPI) is a revolutionary, user-friendly, real-time payment solution that facilitates inter-bank transactions, and enables greater digital payments adoption in the country. Developed and launched by the National Payments Corporation of India in 2016, UPI is now one of the most preferred payment solutions in India, with over a billion transactions every month. Payments can be initiated by either the sender (payer) or the receiver (payee). UPI allows for full interoperability between multiple identifiers such as a mobile number and new UPI ID across all UPI-based payment apps and the institutions that participate in the UPI ecosystem. It allows money to be transferred instantly across UPI linked bank accounts in the ecosystem.	Pix is an instant payment platform created and managed by the Central Bank of Brazil (BCB). The Pix directory has over 500 million Pix aliases. There are now more than 5 billion Pix instant payments per month, and Pix launched less than four years ago.[6] Pix transactions are already 45% more than credit and debit card transactions combined.[7] Over 170 million Brazilian adults (> 90%) and 17 million companies use Pix. While it was mandated for Brazilian banks to offer Pix, consumers were not mandated to use it. They can still choose to pay with credit, debit, or any other payment instrument. But many choose to use Pix because it is so easy to use – largely because this central directory enables payments with the simple share of an alias or swipe of a QR code.[8]

Consumer bill payment is just one use case that would see the rapid adoption of instant payments if an open directory service were available. Person-to-person payments would certainly be much easier than other transaction types. If just the largest of the United States' existing directories could achieve interoperability, that would go a long way to increase instant payment adoption.

Appendix

A recent study issued by *Datos Insight – How American Pay Their Bills; Sizing Bill Pay Channels and Methods (2023)*[9], revealed a series of interesting insights related to consumers' bill payment behavior. Key findings from the report include:

- Among the 16.8 billion bills paid in the last year, approximately 10 billion, or 60%, are made as one-time payments, and 6.8 billion, or 40%, are set up on a recurring basis.
- Among the 16.8 billion bills, approximately 10.6 billion, or 63%, are made online via a biller, FI, or third-party website.
- The percentage of online payments made on biller websites has grown from 62% in 2010 to 77% in 2023, and bank bill pay declined from 38% in 2010 to 21% in 2023.
- Payments made through ACH debit neared 8 billion, and Americans still write close to 1.9 billion checks, provide their debit card information to pay nearly 3.2 billion bills, and use their credit card information to pay another 2.8 billion bills. The annual growth rate for standard consumer bill payment processed via ACH debit transactions (one-time and recurring) is 5.2%.[10]

The *Datos Insight* survey also revealed a critical challenge within the existing consumer bill payment model, addressing late payments. According to the survey, 54% of consumers paid a bill late in the previous twelve months, which could be attributed to forgetting to pay the bill, a deficiency in funds, or additional reasons.

A recent *ACI Pulse Survey (2023)*[11] provided additional evidence of challenges associated with the existing consumer bill payment solutions:

- 26% of consumers have made an urgent or same day bill payment in the last 12 months.
- 28% of consumers are frustrated with the length of time it takes for companies to process bill payments.
- 35% of consumers would consider changing payment channels or methods for faster payment processing.
- 34% of consumers are interested in billers offering "Request for Payment" features.

The survey results are a clear indication of a consumer's desire for an innovative bill payment model that streamlines data exchange, provides access to faster payment networks, and extends a higher degree of transparency to the payment status leveraging enhanced user experiences enabled through the Request for Payment feature.

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About the Faster Payments Council and the Directory Models Work Group

The Faster Payments Council (FPC) is an industry-led membership organization whose vision is a world-class payment system where Americans can safely and securely pay anyone, anywhere, at any time and with near-immediate funds availability. To further this vision, the Faster Payments Council established the Directory Models Work Group with the mission to identify and assess an approach for best practices across directory models and/or dependent platforms for the faster payments ecosystem.

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