International Journal of P2P Network Trends and Technology
ISSN: 2249–2615 / https://doi.org/10.14445/22492615/IJPTT-V15I2P401

Volume 15 Issue 2, 1-10, May-Aug 2025

Review Article

Introduction to Digital Payments in the United States of America

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Received: 17 June 2025 Revised: 26 July 2025 Accepted: 10 August 2025 Published: 29 August 2025

Abstract - *Digital Payments in the USA are revolutionizing, and to be ahead in the growing sector, it is essential to understand how digital payments in the USA work, which is significantly different from how some other countries, like India, process payments. At the core of USA digital payments is the Authorization and Capture, which is not followed in countries like India. This article will summarize core digital payment concepts and provide an overview of how digital payments work in the USA. We will review Payin, Payout, Refund, Authorization Reversal, Void, Chargebacks, and Reversal Adjustments. The article will then explain payment flows in offline and online environments. It will then introduce advancements in online payments, which use merchant-initiated captures along with partial voids, partial Capture, and partial refunds. This article will focus only on credit and debit card transactions. In the future, the article will discuss 1) wallet-based transactions such as Apple Pay, Google Pay, Venmo Card, 2) Account-to-Account transfers or p2p transfers such as Zelle, Venmo Wallet, 3) Settlement, Payout, Chargebacks & Reconciliation in more detail.*

Keywords - *Digital Payments, Authorization, Capture, Void, Refund, Chargebacks.*

1. Introduction

The digital payments in the United States are undergoing rapid transformation, which is driven by a rapid increase in fintech innovation, consumer behaviour, and evolving regulatory frameworks. In recent years, the US has seen an exponential shift from legacy cash-based transactions, which include checks, cash, and transferring to advanced online digital transactions which includes Credit Card, Debit Card, Apple Pay, Google Pay, Paypal The Clearing House RTP, FedNow, ACH, Zelle, Venmo, Paypal Wallet, Amazon Pay Balance, Klarna, Venmo Wallet, CashApp etc. This shift is not just a technological change but a critical pillar defining how money moves in an economy, giving consumers, merchants, and governments access to digital payments.

From a macroeconomic perspective, digital payments are integral to financial inclusion, tax compliance, and real-time economic monitoring. The growing use of APIs, open banking standards, and embedded finance platforms has created opportunities for startups to become Payment Service Providers (PSPs) and provide Payment Processing capabilities, Ref [1]-[2].

Payment Service Providers (PSPs) are companies that allow digital payment transactions between peers, such as banks, businesses, merchants, and customers. It makes it possible for businesses to accept multiple forms of payment methods, such as credit cards, bank transfers, debit cards, and wallets, such as Venmo and Google Pay, all through a single platform integration. It provides all the security measures, necessary infrastructure, and platform to comply with regulatory compliance, which makes it possible for businesses to process payments efficiently and securely. In this way, PSPs allow payment Processor services.

Payment Processor (or Acquiring Processor) is a service that helps execute transactions between customers and merchants by facilitating the processing and Authorization of the credit and debit card or any other form of digital payment methods, such as wallets. It performs fraud checks, verifies transaction details, and makes sure sufficient money is available in the customer's bank accounts.

Companies like Amazon and TikTok have multiple sub-businesses, and to prevent each of those businesses from having its own infrastructure to communicate with PSPs, they develop a single infrastructure to communicate with PSPs for all of these sub-businesses and act as Technical Service Providers (TSPs) Ref [3] for these businesses. TSPs are not payment processors themselves but

provide features like storing already used payment methods so that customers do not have to give their card information again. Similarly, it can provide features to bind Apple Pay, Google Pay, PayPal, Venmo, and other payment methods for faster payments. TSPs can also provide fraud checks before routing the request to PSPs to prevent fraud, reduce costs from PSPs, and prevent litigation and sanctions from PSPs and the government. Since TSPs store card and user information, they have to comply with PCI and OFAC compliance, respectively.

Use cases for digital payments in the US span across industries: e-commerce, subscription billing, in-store point-of-sale, gig economy disbursements, remittances, online marketplaces, and more. The flexibility of payment orchestration allows companies to offer seamless checkout experiences, support recurring billing, reduce fraud via tokenization, and scale across regions..

The Authorization & Capture model defines how digital payments are performed in the United States. Unlike many countries, such as India—where most transactions, particularly through Unified Payments Interface (UPI), settle in real time and are often irrevocable—US payment systems tend to decouple the Authorization of a transaction from the actual transfer of funds.

Allowing this 2-step process and introducing a delay between these two steps makes introducing features like fraud checks, preauthorizations, and flexible settlement timing possible. Cons of this are that it adds complexity and increases the overall time of the fund flow.

Let us briefly introduce the important institutions involved in processing card payments:

1. **Payment Service Providers:** It is explained above.
2. **Technical Service Providers:** It is explained above.
3. **Acquirer Banks:** These are banks or financial institutions that facilitate merchants or PSPs to collect funds from issuers—Ref [4]-[5].
4. **Issuing Bank:** The issuer, also called the issuing Bank or card issuer, represents the customer in a transaction. A financial institution supplies an individual with a credit card or debit card to perform transactions. An issuer can be a bank, credit union, or other financial institution Ref [6]-[7].
5. **Card Schemes / Card Networks:** These are the payment networks, such as Visa, Mastercard, American Express, etc., that govern the rules and infrastructure for processing card payments. These schemes act as a centralized entity that makes sure transactions are authorized, cleared, and settled between the issuer (cardholder's Bank) and the acquirer (Merchant's Bank). Ref [8]

This article provides a high-level overview of how digital payments work in the US. It begins by demystifying the Authorization-Capture model and the various payment flows. We will walk through different scenarios of operations such as Pay-in, Payout, Refund, Cancel, Void, Capture, Chargebacks, Settlement, and Reversal Adjustments. The goal is to deepen technical understanding and empower aspiring entrepreneurs, product managers, and engineers to build or improve payment solutions within the US ecosystem. A follow-up article will focus on Settlement, Payout, Chargebacks, and Reconciliations, which are essential for ensuring financial integrity and operational scalability.

2. Authorization Capture Model

The US digital payments landscape includes a broad spectrum of payment stages and different players. These payments can also be reversed at any stage of the payment.

Payment reversals occur when a Payment is canceled and the funds need to be returned to the original payment method. Payment reversal can also happen to other payment methods, including, but not limited to, payout, gift cards, or vouchers. It amounted to USD 743 billion in 2023, accounting for 14.5% of sales Ref [9]. It happens for a variety of reasons, including but not limited to service or product issues, customer dissatisfaction and complaints, return of services or products for any reason, or erroneous transactions. It can be categorized into different scenarios depending on at what stage reversal starts. It can also be seen as a reversal of Authorization to varying stages of the payment. The following are the various types of payment reversals:

1. Authorization Reversals
2. Voids
3. Refunds
4. Chargebacks
5. Reversal Adjustments

Now we will discuss each of these stages in brief detail.

2.1. Authorization

It is a process of getting approval from the issuing Bank. It happens through a Point-Of-Sale (POS) terminal or PSPs. Sometimes PSPs also serve as business acquirers. Stripe, for example, offers payment processing, business accounts, and acquirer bank functionalities.

Here is an example showcasing how Authorization happens. Customer taps or swipes their credit card or debit card at the point-of-sale terminal or enters the card details at the payment gateway in an online transaction. In case of a POS terminal, the request goes to the acquiring Bank, and in case of online transactions, the request goes to the acquiring Bank through PSPs or TSPs.

The acquirer bank then routes the request to the issuing Bank through the card network. At this stage, the issuing Bank checks the following details:

1. Credit card or debit card details are valid and correct.
2. There is enough credit limit or balance in the account to cover the cost of the transactions.
3. The transaction is not fraudulent.

The issuing Bank returns one of the two decisions to the acquiring Bank after checking three conditions:

1. Approved with an authorization code: This is returned if all three conditions mentioned above are satisfied.
2. Declined with an error code: If any of the above three conditions are not satisfied, Authorization is declined.

It is a process of getting approval from the issuing Bank, whereby the issuing Bank makes sure:

1. Credit card or debit card details are valid and correct.
2. There is enough credit limit or balance in the account to cover the cost of the transactions.
3. The transaction is not fraudulent.

This entire authorization request takes just a few seconds. There are 2 types of Authorizations that the Card Schemes supports support two types of Authorizations:

1. Final Authorization: This is the default authorization type that works as explained above, and it does not allow you to adjust the authorized amount later. The final amount is agreed upon upfront, and the transaction will be captured in full.
2. Pre Authorization: We will discuss this in section 2.1.1

2.1.1. Pre-Authorization

It is similar to Final Authorization except that the final captured amount may differ from the initially authorized amount. This is usually used at hotels and gas stations. The final captured amount is less than or equal to the initially authorized amount. For example, if a customer is staying at a hotel, then the hotel may hold extra funds from your account to take care of damages to the room or services used by the customer.

Here is how it typically works:

1. Initiating the preauthorization & holding funds: This is the same as Final Authorization, except the hold is temporary; the final capture amount may be less than the held amount. The amount of time it takes to finalize the amount for Capture depends on the Merchant.
2. Releasing unused funds: If the final amount to deduct from the customer's account is less than the funds held initially, then the unused funds are released and will be available for the customer to use in the future.

2.2. Batching

Batching is when businesses send all the authorized transactions from that day, grouped together as a batch, to their payment processor at the end of the day. It is the precursor to Settlement.

2.3. Capture

Once Authorization is completed, Capture is initiated, where the acquiring Bank sends a request to the issuing Bank to start transferring authorized funds to the acquiring Bank. The Merchant can undertake Capture through a Point-Of-Sale (POS) terminal, or by PSPs or by TSPs, after merchants finalize that the authorized amount is ready to be transferred to the business account, and no VOID and Authorization Reversal is required. It must happen before the Authorization expires in 5-10 days.

2.4. Clearing and Interchange

Once the acquiring Bank receives all the transactions to capture, it forwards those transactions to the card networks. Card networks now route these transactions to the respective issuing banks and deduct the interchange fees, which are charged by the issuing Bank, acquiring Bank, the card networks, or any other applicable charges for card-based transactions.

2.5. Settlement

Once the capture request is sent to the issuing Bank, the issuing Bank transfers the funds to the card networks, which then transfers the funds to the acquiring Bank. Settlement is considered to be completed at this stage, but the business has not yet received the money.

2.6. Authorization Reversal

If a merchant wants to cancel an Authorization that has not yet been captured, then the Merchant can send a reversal request to the issuer bank via the merchant terminal or PSPs.

Upon receiving this request, the issuer will release the funds that were held as part of the Authorization, making the funds available in the customer's account and restoring the credit limit or account balance.

2.7. Void

If a merchant wants to cancel an Authorization before it is captured, then the Merchant can also initiate a void. So in this scenario, it is exactly the same as Authorization Reversal. However, void scope goes beyond Capture. That means the Merchant can initiate a void anytime before the transaction is settled.

2.8. Funding

Once the Settlement is completed, the business account will be credited with funds, which will be lower than the gross amount because of the charges that were deducted during the settlement phase. At this stage, money becomes available in the business's account.

2.9. Refunds

If a business needs to return money to the customer after the transaction is settled, then refunds are initiated, whereby money is transferred back to the customer. Business process refunds are processed through the point-of-sale (POS) system or payment gateway and are sent directly to the customer's original payment method. Some businesses also allow refunds in the form of gift cards, vouchers, or different payment methods via payouts. Refunds can be done for several reasons, such as return of products, customer dissatisfaction, wrong items, excess charge, etc. As per FTC requirements, refunds should be completed within seven business days.

2.9.1. Use Case

If a customer returns a product due to dissatisfaction, defects, or receiving the incorrect item, the business can issue a refund. If the customer was overcharged, the business can also issue a refund for the extra amount charged.

2.10. Chargebacks

This transaction is initiated by the issuing Bank upon receiving a request from the customer that the transaction is fraudulent, the product and services are not received, or the services and products are not damaged, etc. The issuing Bank initiates the Chargeback and sends the request to the card network, which then sends the request to the acquiring Bank. From there, the request goes to the Merchant through PSP or TSP. The acquiring Bank debits the business account and credits the customer's account. And after this, the Merchant can also dispute the Chargeback with the required proof, which leads to a potentially complex arbitration process.

2.11. Reversal Adjustments

It is similar to a refund, and it happens after the Settlement, except that here, merchants make the correction by themselves without the customer's involvement because of the mistake made by the Merchant itself. So no refund initiation is required here. It includes correcting erroneous transactions such as incorrect amounts, duplicate amounts, or any other incorrect details in the transaction.

2.12. Payouts

These refer to business-to-consumer (B2C) or business-to-business (B2B) transfers, typically involving payroll disbursements, refunds, affiliate commissions, or contractor payments. Payouts may leverage ACH, instant push-to-card methods, real-time payments (RTP), or checks.

Not every stage defined above happens for all kinds of payments. Depending on the merchant integration for the payment, some stages might not apply. We will discuss these scenarios in the Authorization Scenarios Section.

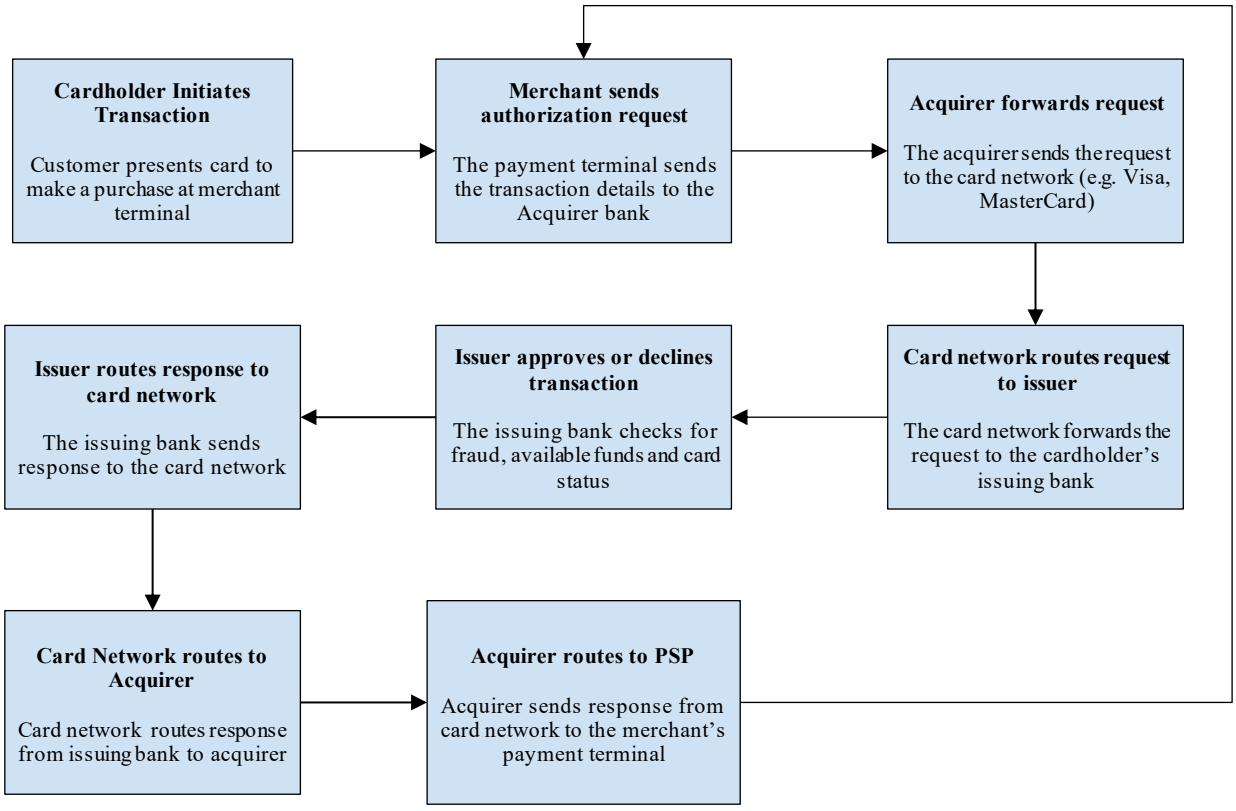

Fig. 1 Explain offline card payment through the Merchant's payment terminal machin

3. Authorization Scenarios

Now, there can be multiple scenarios in which Authorization can happen. In this section, we will discuss most of the possibilities in which Authorization can happen.

3.1. Offline Payments

This scenario involves a customer swiping or tapping their credit or debit card at the merchant terminal. Here, the terminal is issued by the Merchant's Bank, where the Merchant wants to store its funds. In this case, Figure 1 summarizes how the Authorization happens. In this scenario, all the steps typically happen since the Merchant can control each step.

Transaction status. The following are the steps involved:

1. Authorization
2. Authorization Reversal (Optional)
3. Capture with or without Batching
4. Void (Optional)
5. Clearing and Interchange
6. Settlement

3.2. Online Payments

This scenario involves customers providing their credit or debit card information at the Merchant's website or app. Customer inputs information such as card number, expiration date, 3-digit pin, name, address, zipcode, city, and country information. Here authorization flow depends on how the Merchant has integrated with the payment processor (PSPs) and how the payment processor has integrated with the acquiring Bank.

Since companies like Amazon and TikTok have their own payment infrastructure and act as TSPs, payment flow also depends on whether the Merchant has its own TSP or not. So, based on these different cases, we have the following sub-scenarios for online payments.

3.2.1. Case 1

The customer initiates a transaction on the Merchant's website, and the Merchant has integrated directly with payment processors like Stripe, Adyen, PayPal, etc. These payment processors have partnered with Acquirer Banks. Figure 2 explains this scenario in detail.

The following stages are involved in this case:

1. Authorization
2. Authorization Reversal (Optional)
3. Capture with or without Batching
4. Void (Optional)
5. Clearing and Interchange
6. Settlement

Stage 3, 5. 6 can happen together, depending on how the PSP implements the logic of Capture and Settlement. So, because of that, Void might not be possible after Capture. In that case, merchants need to do an Authorization Reversal, and sometimes merchants call Authorization Reversal in such cases as Voids. Some companies, like Adyen, do not specifically provide Authorization Reversal; they provide Void for such scenarios. While companies like Stripe provide both Authorization Reversal and Void.

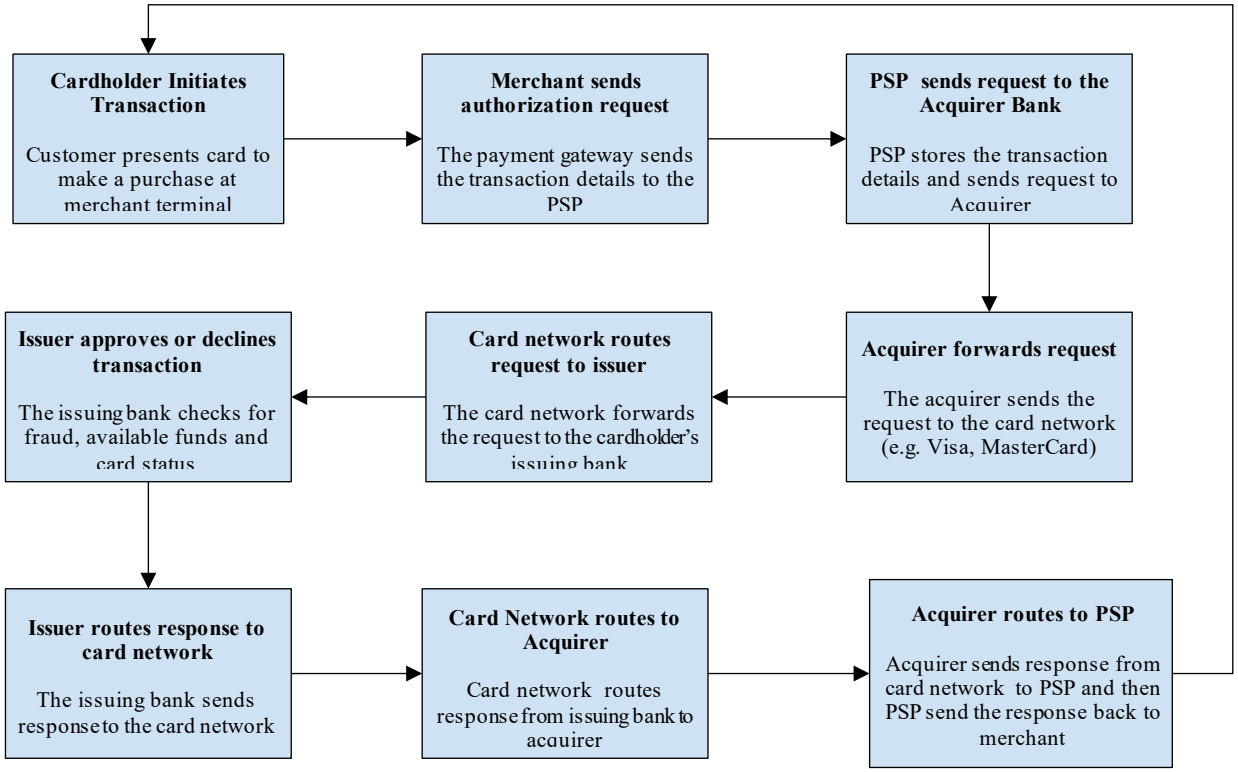

Fig. 2 Explain online card payment through the Merchant's payment website/app, where PSP partnered with Acquirer Banks

3.2.2. Case 2

The customer initiates a transaction on the Merchant's website, and the Merchant has integrated with 3rd party providers like Stripe, Adyen, etc. These payment processors also act as Acquirer Bank. Figure 3 explains this scenario in detail.

The following stages are involved in this case:

1. Authorization
2. Authorization Reversal (Optional)
3. Capture with or without Batching
4. Void (Optional)
5. Clearing and Interchange
6. Settlement

Stage 3, 5. 6 can happen together, depending on how the PSP implements the logic of Capture and Settlement. So, because of that, Void might not be possible after Capture. In that case, merchants need to do an Authorization Reversal, and sometimes these Authorization Reversals are also called Voids. Some companies, like Adyen, do not specifically provide Authorization Reversal; they provide Void for such scenarios. While companies like Stripe provide both Authorization Reversal and Void.

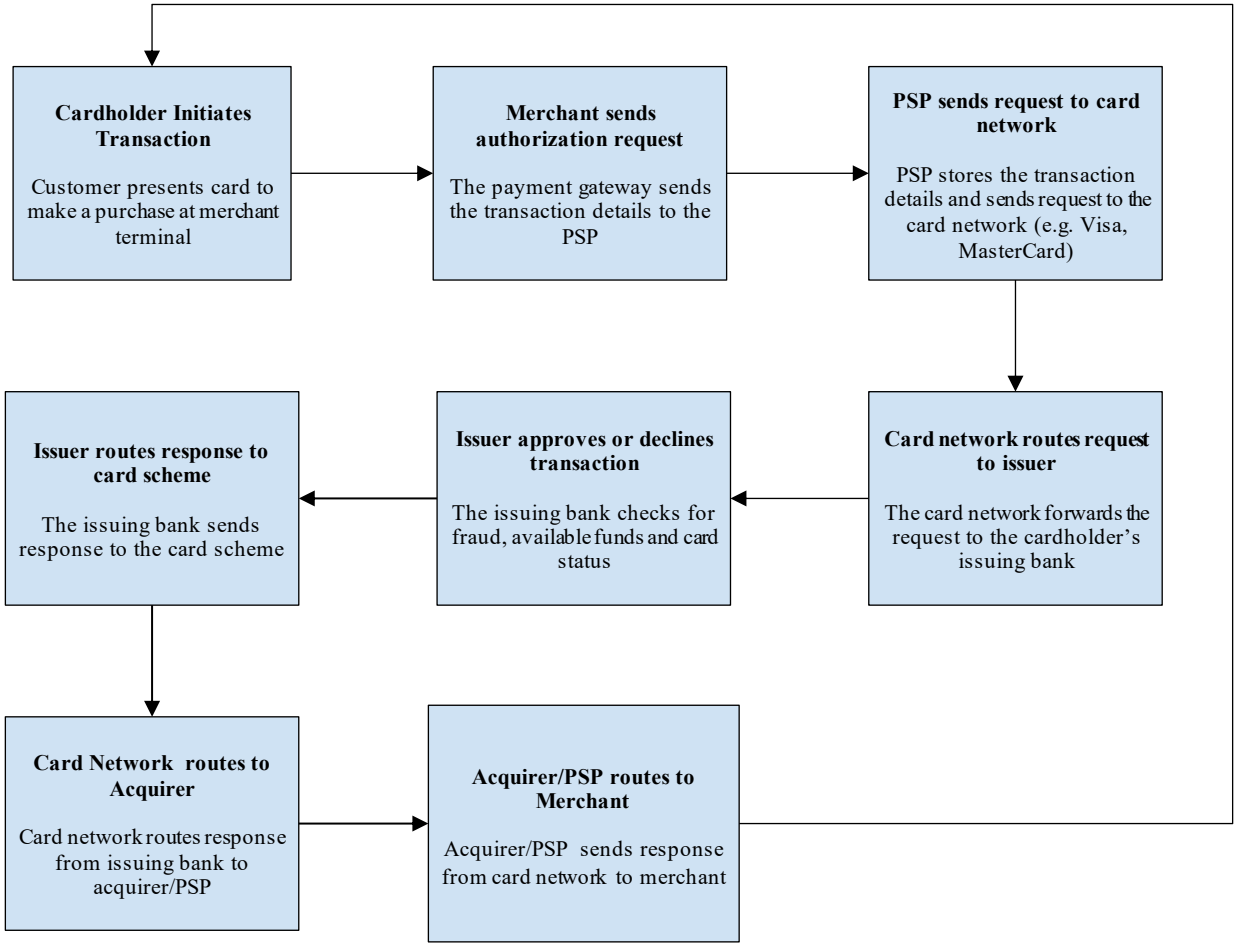

Fig. 3 Explain online card payment through the Merchant's payment website/app, where PSP is also acting as Acquirer Banks

3.2.3. Case 3

The customer initiates a transaction on the Merchant's website, and the Merchant has its own infrastructure (i.e., Merchant is TSP) to store payment transaction details, card information, perform fraud checks, etc., before routing the request to payment processors (PSPs).

Here, we assume PSPs also act as acquiring banks. A case where PSP is not acting as the acquiring Bank will be similar to Case 1. Figure 4 explains this scenario in detail.

The following stages are involved in this case:

1. Authorization
2. Authorization Reversal (Optional)
3. Capture with or without Batching
4. Void (Optional)
5. Clearing and Interchange
6. Settlement

Stage 3, 5. 6 can happen together, depending on how the PSP implements the logic of Capture and Settlement.

So, because of that, Void might not be possible after Capture. In that case, merchants need to do Authorization Reversal, and sometimes these Authorization Reversals are also called Voids. Some companies, like Adyen, do not specifically provide Authorization Reversal; they provide Void for such scenarios. While companies like Stripe provide both Authorization Reversal and Void.

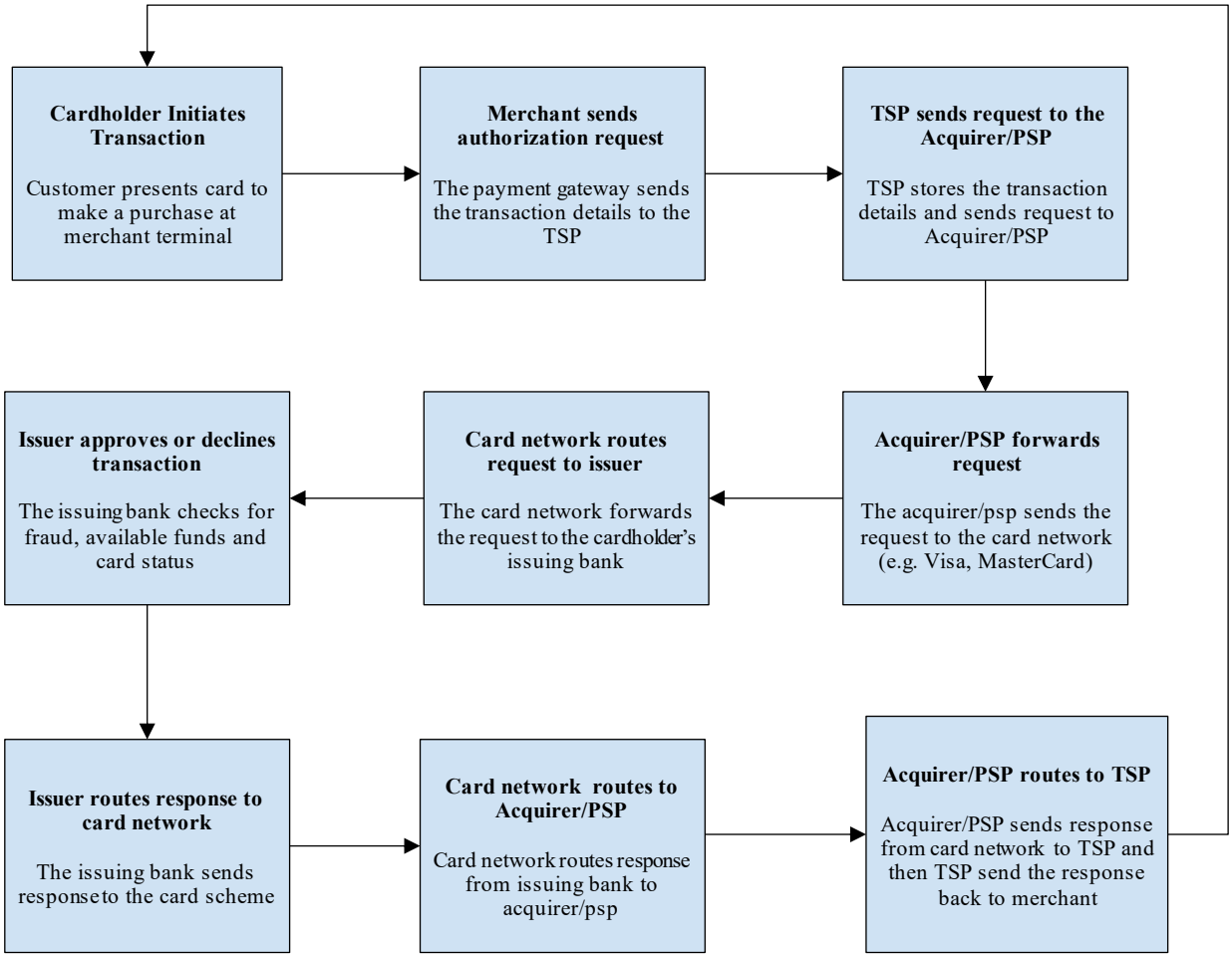

Fig. 4 Explain online card payment through the Merchant's payment website/app, where the Merchant is TSP and PSP is also acting as Acquirer Bank

4. Capture Scenarios

Now, once the Authorization is finished. Capture can be initiated by different entities depending on the payment scenarios. Following the cases for offline and online payments:

1. **Offline Payment**: Capture is initiated by a merchant through its payment terminal. This mode of Capture is called **Manual Capture** since the Merchant manually initiates the Capture after verifying the transactions.
2. **Online Payment**: This mode of Capture is called **Auto Capture** since PSP or TSP is auto-initiating the Capture as per the SLA
   a. **Case 1**: Capture is automatically initiated by PSP after a certain amount of time, depending on the SLA agreed upon between Merchant and PSP.
   b. **Case 2**: Same as in Case 1.
   c. **Case 3**: Capture can be initiated by both TSP and PSP. TSP can initiate Capture using the payment APIs provided by PSP after a certain amount of time, depending on the SLA agreed upon between TSP and PSP. PSP can also initiate Capture as in Case 1.

In case of online payments, Capture, Batching, Clearing, and Interchange usually happen together, depending on the PSP implementation. Once Capture is finished, Settlement transfers money from the acquirer bank to the Merchant's account registered with the PSP.

In the later section, we will see that even in the case of Online Payments, Capture can be Manual Capture. This

feature gives more granular control to the Merchant over the transactions in case of online payments.

5. Authorization Reversal, Void, Refund, Chargeback scenarios

Let us say the original Authorization amount was $100, and then due to some reason, merchants initiate Authorization Reversal of $20 and Void of $35, then final Capture will be initiated for $100 - $20 - $35 = $45. After that, if the customer initiates a refund, then the refund is possible only from the remaining value of the Capture, which is $45. So the maximum refund possible is $45.

Also, if the customer is not able to get refund from the Merchant or raises dispute with the Bank before raising the refund then in that case total amount of Refund and Chargeback cannot exceed $45 and PSP and TSP need to properly handle before the scenario to make sure total amount of Refund and Chargeback does not exceed $45.

Following is the high-level view for Authorization Reversal and Void:

1. Merchant initiates Authorization Reversal or Void and sends a request to the Acquiring bank, PSP or TSP
   a. If the Merchant sends a request to TSP, then TSP forwards the request to PSP
   b. If the Merchant sends a request to PSP, then PSP forwards the request to the Acquiring Bank
2. The Acquiring Bank sends the request to the card network to change the authorization amount
3. The card network sends the request to the issuing Bank
4. The Issuing Bank changes the authorization amount and sends back the response to the card network
5. The card network confirms to the Acquiring bank, and then the acquiring Bank sends back a response to PSP or Merchant (in case of offline payments)
6. PSP sends back a response to Merchant or TSP (if TSP exists)

The following is the high-level view for refund:

1. Customer initiates refund request at Merchant. The Merchant sends this request to the PSP or TSP
   a. If TSP exists, then TSP will send the request to PSP
2. PSP will send the request to the acquiring Bank to initiate a Refund from the acquiring Bank to the issuing Bank via the card network

Following is the high-level view for Chargeback:

1. The customer initiates a Chargeback with the customer's Bank, which is the issuing Bank.
2. The Issuing Bank sends the chargeback request to the acquiring Bank through the card network.
3. The acquiring Bank sends the request to the PSP (or Merchant in case of offline payment).
4. From PSP, the request goes to TSP if TSP exists. TSP will perform an investigation and inform PSP about the result of the investigation and whether to release funds or not.
5. If TSP does not exist, PSP will send requests to merchants, and based on the Merchant's investigation, funds will be released to customers, or requests will be denied.

6. Payouts

Let us take an example of Amazon to explain Payouts. In cases like Amazon E-commerce, where Amazon acts as TSP, sellers are onboarded to Amazon, and Amazon registers them with PSP. All the funds flow to Amazon's account with the PSP. Amazon can then settle the funds into the registered account of sellers with Amazon. These accounts are binded by sellers on Amazon's seller page.

Now, sellers can initiate payouts to their accounts based on the funds available from Amazon. This is called Merchant Initiated Payouts.

Depending on its implementation, Amazon can auto-initiate payouts to the Merchant's account. This is called Auto Payouts.

7. Advancement in Authorization and Capture Scenarios

Now let us go through some use cases of the Authorization & Capture that we discussed above, and see how we can use innovative ideas to make these card payments more efficient with overall lesser cost.

Let us say in an E-commerce platform where sellers can sell the product to buyers. Let us consider a case where a buyer orders 5 products in their cart, as shown in Table 1

Table 1. Gives an example of cart items that constitute one order

Product	Price
A	$10
B	$12
C	$14
D	$16
E	$18

Now, if the order is placed, we will have the following possibilities for legacy payments:

1. Authorization = $70
2. Authorization Reversal = $70 before the product is shipped
3. Void = $70 before the product is shipped
4. Capture = $70
5. Refund = $70
6. Chargeback = $70

Most e-commerce websites do not allow partial cancellation of items, so orders are either fully cancelled or fully captured. So the captures are in the full amount, and the subsequent refunds and chargebacks are in the full order amounts.

However, companies like Amazon E-commerce have allowed partial cancellation of items from the order. So this allows merchants to reverse an Authorization or partially perform a Void. This means performing the partial captures on the remaining authorization amount, and a partial Refund on the partially captured amount.

Note, even in this case, a partial Chargeback on the partially captured amount is not possible since, from the issuing Bank's side, they do not see individual entries of the Capture on their side. They only see the final partial capture amount.

This makes a case of Manual Capture Ref [10] in an online payment scenario, which we discussed in Section 4. Table 2 discusses multiple possibilities on how an order can pan out. Note here we mentioned Authorization Reversal & Void as separate, but for the payment processor like Adyen, they are the same, and for payment processors like Stripe, they are different. However, even in the case of Stripe, TSPs or merchants mostly use Void to avoid duplication since the effects of these 2 operations are the same in an online payment scenario.

In Table 2, we also restrict Voids after Capture has started, since that can lead to more technical complexities because PSPs often perform Capture, Clearing & Interchange and Settlement together, depending on the implementation at the PSP side, unlike the offline payment scenario where merchants have control over when to start Settlement.

Table 2. Gives the example of different payment scenarios that can happen in case of a feature where items can be individually cancelled before shipping

Case Id	Authorization	Partial Authorization Reversal for item cancelled	Partial Void for item cancelled	Partial Capture to settle on remaining Authorization amount	Max refund possible on which partial refunds can be made	Max Chargeback Possible
1	$70	$12 + $14 = $26	$0	$10 + $16 + $18 = $44	$44	$44
2	$70	$12 + $14 = $26	$0	$10 + $16 + $18 = $44	$44	$44
3	$70	$12 + $14 = $26	$16	$10 + $18 = $28	$28	$28
4	$70	$0	$16	$54	$54	$54
5	$70	$0	$0	$70	$70	$70

Now, from Table 2, the Refund column signifies the following:

1. Max Refund of $44 corresponds to items: A, D, E
2. Max Refund of $44 corresponds to items: A, D, E
3. Max Refund of $28 corresponds to items: A, D, E
4. Max Refund of $54 corresponds to items: A, B, C, E
5. Max Refund of $80 corresponds to items: A, B, C, D, E

So in each of these cases, these items can be cancelled, and partial refunds can be initiated for these items.

However, a chargeback will be initiated for the full captured amount in each of these cases.

8. Analysis

Figure 5 shows the trend of Authorization, Authorization Reversal, Void, Capture and Refund from 2021 to 2025 till now. From this figure, we can observe the following points:

1. There is growing interest in the usage of card payments, as the Authorization amount is increasing year by year
2. PSPs and merchants use more Void than Authorization Reversal, as Void gives an extended period of control before Settlement.
3. Decreasing chargebacks indicate improvements in fraud detection systems, which disallow fraudulent chargebacks.

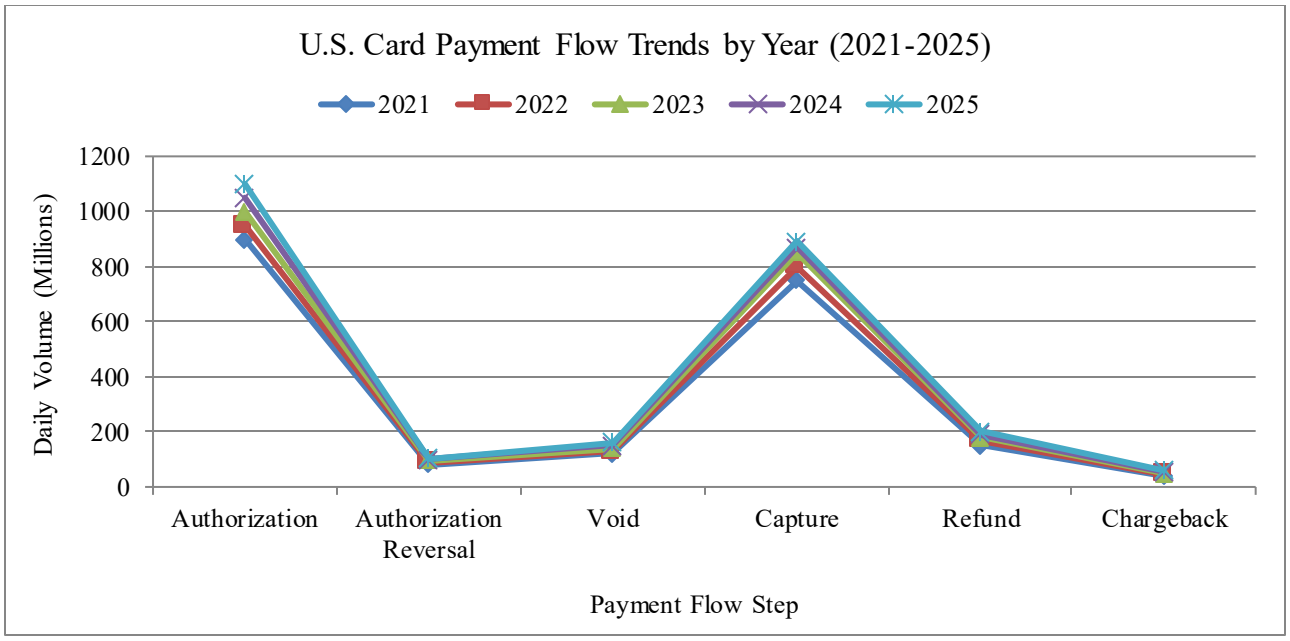

Fig. 5 It shows the volume in million USD for each payment action from 2021 to 2025

9. Conclusion & Future Scope

This article introduced how digital payments work in the United States. We discussed the payment terminologies, offline and online payment scenarios, different payment actions like Authorization, Authorization Reversal, Void, Capture, Refund, Chargebacks, Settlements, etc.

We saw how payment flows differ depending on the merchant integration with PSP and PSP integration with the Acquiring Bank. Then we discussed how payments can be made efficient by allowing partial cancellation of Authorization using partial Void and partial authorization reversal. We briefly spoke about payouts and the role of TSP.

In the future article, we will discuss how wallet-based transactions and Account-to-Account (or p2p transfer) transactions, such as Apple Pay, Google Pay, PayPal, Venmo Card, Venmo Wallet, and Zelle, happen. We will also discuss Chargeback, payout and the importance of reconciliation in the payment domain.

References

[1] Payment Service Providers Explanation, WikiPedia. [Online]. Available: https://en.wikipedia.org/wiki/Payment_service_provider
[2] Payment Service Providers Explanation, Stripe, 2024. [Online]. Available: https://stripe.com/resources/more/payment-service-providers
[3] Susanne Grohé, Technical Service Providers, PayTechLaw, 2017. [Online]. Available: https://paytechlaw.com/en/lets-distinguish-technical-service-provider-or-payment-initiation-service/
[4] Acquiring Bank Explanation, WikiPedia. [Online]. Available: https://en.wikipedia.org/wiki/Acquiring_bank
[5] Acquiring Bank Explanation, Stripe, 2023. [Online]. Available: https://stripe.com/resources/more/acquirer-vs-issuer
[6] Issuing Bank Explanation, WikiPedia. [Online]. Available: https://en.wikipedia.org/wiki/Issuing_bank
[7] Issuing Bank Explanation, Stripe, 2023. [Online]. Available: https://stripe.com/resources/more/acquirer-vs-issuer
[8] Card Schemes, WikiPedia. [Online]. Available: https://en.wikipedia.org/wiki/Card_scheme
[9] Payment Reversal Stats, National Retail Federation, 2023. [Online]. Available: https://nrf.com/research/2023-consumer-returns-retail-industry
[10] Adyen, Partial Manual Capture. [Online]. Available: https://docs.adyen.com/online-payments/capture/#partial-capture