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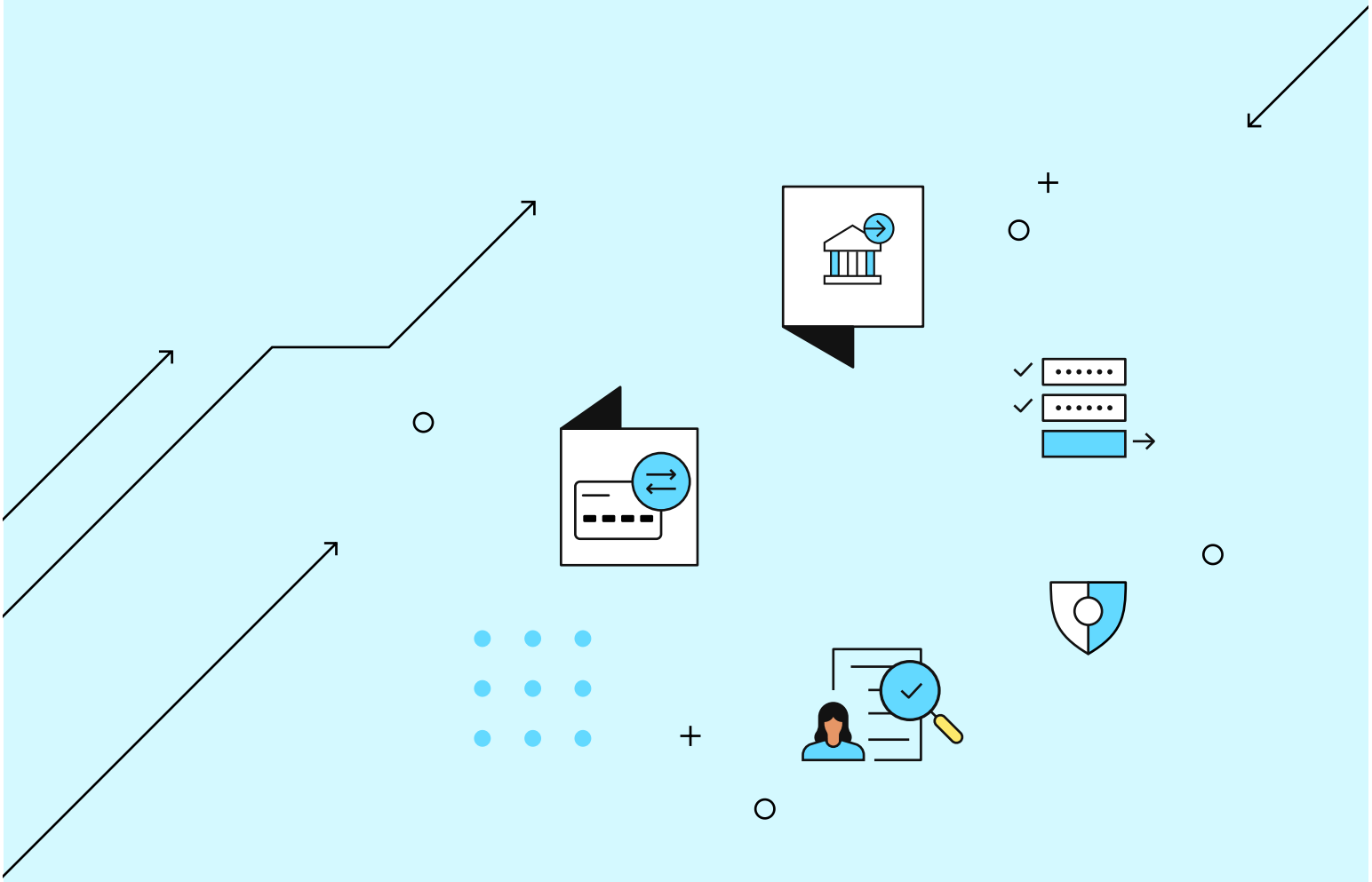
A modern guide to ACH

How to add ACH to your platform and reduce losses and risks



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Executive summary

Although new financial services and technologies such as peer-to-peer payments apps, digital wallets, and cryptocurrency trading platforms are on the rise, an older financial technology is rising alongside them. ACH dates back to the 1970s, but today serves as the backbone for many new financial technologies.

The union between ACH and new financial services leaves startups in the space with questions on what exactly ACH is and how to get started with it. This whitepaper is for those who are either interested in ACH or new to it and looking for answers on how to effectively use it in their financial products and services.

In this whitepaper, we'll cover:

- What ACH is, how it works, and why businesses use it
- How to get started with ACH
- The risks and liabilities of ACH and how to minimize them

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What is ACH?

The Automated Clearing House (ACH) is a financial network for interbank electronic payments and money transfers in the US. Along with card networks (Visa, Mastercard) and wire transfers, it's one of the dominant payment rails in the country.

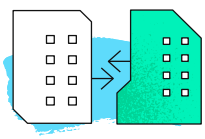
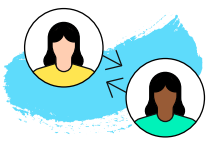
ACH enables businesses and people to transfer money directly from one bank account to another, without any physical checks, cash, or cards. Instead, ACH uses bank account details (account and routing numbers) to facilitate bank-to-bank transfers.

The ACH network was formed in the early 1970s as a way to help banks that were struggling to keep up with a high volume of paper checks. To remedy this, a group of banks in California turned to newly-created computer technology and created an automated solution. Named the Automated Clearing House (ACH) as a nod to the 'clearing house' where bank employees traditionally went to exchange checks and settle transactions, the first automated clearing house was operated by the Federal Reserve of San Francisco.

Due to its low cost and ease-of-use, the ACH network processes a large volume of transactions and has seen high growth rates in recent years. In 2020, ACH processed 26.8 billion transactions with a total value of $61.9 trillion, an increase in value of 10.8% over 2019.

While ACH has been traditionally used for transactions such as direct deposit paychecks, government benefits payments, and electronic tax payments, it's growth in other areas such as peer-to-peer (P2P) payments and internet-initiated transactions has been on the rise. This is particularly true for account funding on new digital platforms such as trading (e.g. Robinhood) and banking (e.g. Chime).

ACH volume growth by payment type (2019 to 2020)

B2B	Direct Deposit	Internet	P2P	Healthcare
				
+10.7%	**+12%**	**+15%**	**+42.2%**	**+5.4%**
4.4B	8B	7.7B	217.6M	361.6M

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Why businesses use ACHs

Compared to the other dominant payment rails (checks, cards, and wire transfers), ACH has some clear benefits that make it the right choice for a variety of use cases.

1 **Lower processing costs:** ACH fees vary based on several factors, but they are generally much lower than credit cards and wire transfers. For businesses with high-volume transactions, such as those that process monthly billing cycles for their customers, using ACH instead of credit cards can provide significant cost savings. Additionally, if used instead of checks, ACH can help save on administrative overhead as transactions are paperless and automated.

For example, if a business uses Stripe to process a $500 transaction, they could save over $10 on processing fees by choosing ACH over credit cards.

Stripe credit card fees	Stripe ACH fees	Fee comparison on a $500 transaction
2.9% + $0.30 fixed fee	$0.8% up to $5 max	ACH: $4 Credit Card: $14.80

Comparing processing fees of credit cards versus ACH. Source: Stripe.

2 **High transaction success rate:** Payment churn, which is usually caused when a customer's credit card is lost or expired, can cause companies to lose large chunks of revenue. With ACH, payment churn is lessened because customers use their bank account for payments instead of a credit card. On average, a bank account is held for 14 years compared to only 3 years for a credit card, making the bank account a more stable payment method.

3 **Fewer errors and returns:** To link an account for ACH payments, bank account information typically only needs to be entered once. Then, it can be repeatedly used for payments. Other payment methods like credit cards and wire transfers often need information to be repeatedly entered for payments, which increases the chances for errors and returns. Credit cards are also declined for a host of reasons including maxed out limits, typos, holds, and suspicious purchases—further increasing the likelihood of returns compared to ACH.

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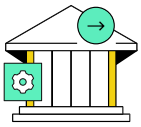
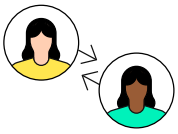
What ACH is used for

ACH is the most used payment method for government benefits payments, direct deposit paychecks, and electronically paying taxes to the IRS. However, it's use is growing for exciting new types of financial services, such as P2P payments and account funding for brokerage and cryptocurrency trading accounts.

Common use cases for ACH include:

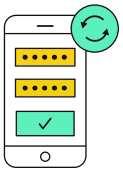


Account funding and disbursement: For companies offering brokerage, banking, digital wallet, or cryptocurrency trading services, giving customers an easy option to fund their accounts is crucial to success—and ACH provides that. Once a customer connects their outside financial account, they can easily transfer funds to their new account. Conversely, ACH can also be used for disbursements—which means passing funds back to a customer's financial account from their digital wallet or other digital account.



Peer-to-peer (P2P) transfers: P2P transfers are one of the fastest growth areas for ACH. Bank transfers via ACH provide a safe and inexpensive way for people to send money, which has fueled the growth of P2P money moving apps like Venmo and CashApp. Technically, P2P transfers are another form of account funding and disbursement where ACH is used to transfer funds from one person's account to another, then is used again to disburse those funds to the receiver's checking account.

One-time payments: While most consumers still use credit cards to make payments, ACH is increasingly used to pay for goods and services. One example is SmartPay Rewards, a mobile app for a chain of gas stations and convenience stores that offers customers discounts and rewards for paying with ACH. Another example is Catch, an e-commerce platform that offers shoppers store credit in exchange for paying via ACH. In both cases, the businesses offer incentives for paying with ACH because it lowers their payment processing fees (while at the same time building brand loyalty).



Recurring payments: ACH is the perfect tool for automatic payments. Using ACH direct debit, also called 'auto-pay', businesses can easily facilitate 'set it and forget it' payments for recurring bills such as software subscriptions or insurance premiums. Once it's set up, ACH auto-pay is a cost-effective, reliable, and easy way for customers to make automatic payments, and has less payment churn than other methods. Importantly for developers, this reduced churn can lead to higher ongoing transaction success rates.

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How long ACH payments take

ACH transaction timelines vary based on three factors:

1. The time of day the transaction is initiated
2. The day of the week the transaction is initiated
3. Whether or not same-day ACH was used
4. Whether or not the transaction returns an error code

While standard ACH used to take 3-5 days to settle, the process is now generally completed within 1-2 business days. ACH transactions are only processed during the work week (Monday-Friday, non-holiday), transactions submitted on the weekend will be processed during the Monday window.

Same-day ACH can be added on for a small fee to each transaction, which moves funds within the same day if the transfers are submitted before the 10:30 AM ET or 2:45 PM ET processing windows (otherwise they will go through as standard ACH).

New technology has emerged in recent years that enables bank-to-bank payments to settle instantly. Real-time payments (RTP) is a new interbank payment network from The Clearing House that offers instant settlement, but it currently only supports 'credit push' transactions, meaning that senders can only move money from their own account. The Clearing House is developing a "request for payment" functionality, however this is still in the early stages. RTP costs more than ACH but typically costs less than wire transfers. It's also relatively new and has not yet seen ubiquitous adoption from banks or developers.

For more on how long ACH payments take and how money moves via ACH, check out Plaid's article on how ACH transfers work.

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The risks and liabilities of ACH

ACH is among the safest payment rails available, but that doesn't mean it comes without risk. The most common risks and liabilities associated with ACH are:

Insufficient funds returns: Since ACH payments don't settle immediately, purchases made without sufficient funds in the buyer's bank account can go temporarily unnoticed until they are later rejected by the ACH network (sometimes after physical goods are exchanged). To deal with this issue, some ACH solutions—including Plaid—have implemented 'balance check' tools that use API endpoints to check if a customer has enough funds in their account before making a purchase. Without this insight, there is some risk of providing goods without receiving a payment.

Fraud risk: ACH boasts the lowest fraud rate, by value, among major payment rails, but it still happens. Bad actors can attempt to use stolen financial information to authorize compromised accounts for ACH transactions. Because consumers have up to 60 days to dispute a transaction, there is a risk of hard dollar losses associated with returns due to fraud. Different ACH solutions have varying ways to combat this, such as multi-factor authentication and security checks to ensure that a human, rather than a computer program (also known as a script), is the one entering financial information.

KYC/AML requirements: Before getting started with ACH, businesses need to know their Know Your Customer (KYC) and Anti-Money Laundering (AML) requirements. These regulations mandate that organizations verify a customer's identity, establish their risk factor, and ensure funds aren't being used in money laundering or terrorism, before an ACH transfer occurs. Usually, businesses can check with their ACH payment processor or bank to determine how to meet these requirements. Not complying with KYC and AML regulations can result in significant fines.

Customer expectations: Because most people are used to instant settlement via credit and debit cards, the idea that ACH payments don't settle immediately can take some getting used to. If a customer forgets that they made an ACH payment before it settles, they can be surprised when it comes out a couple of days later, and may have even spent those funds on something else. In order to get around this, it's best for businesses to proactively inform customers about how long it will take for funds to be withdrawn, which will depend on whether same-day ACH is used.

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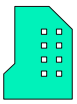
ACH vocabulary terms to know:

Originator

When using the ACH network, the rules and requirements that apply to your organization will be determined by whether you're classified as an 'originator'. The originator is an entity or individual that starts a transaction on the ACH network. They designate whether the transaction is a debit or a credit, and work directly with a bank to initiate the transaction.

ODFI

The bank that the originator works with to initiate the transaction is the Originating Depository Financial Institution (ODFI). The ODFI is required to follow operating rules set by Nacha, the organization that governs the ACH network and ensures that member institutions are compliant with federal regulations.



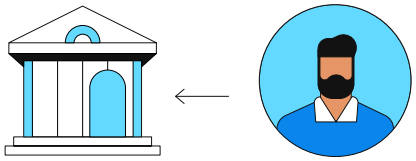
TPS

A Third Party Sender (TPS) is a business that acts as an intermediary for transactions. In order to be classified as a TPS, the business can't have an underlying responsibility to pay or be paid by the end user. For example, a company that streamlines rent payments by collecting funds from the renter and sending them to the landlord would qualify as a TPS. Nacha's interactive tool can help you figure out if your business qualifies as a TPS.

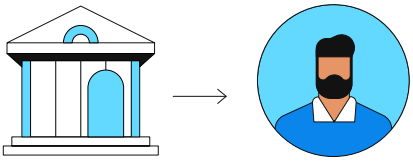
TPSP

A Third Party Service Provider (TPSP) is a vendor, usually a payment processor, that works with ODFIs or TPSs to initiate bank-to-bank transactions on an organization's behalf.

ACH debit
Originator pulls money from an outside account to their own



ACH credit
Originator pushes money from their account to another



ACH credits and debits

ACH transactions can be categorized as either ‘debits’ or ‘credits’. An easy way to think about it is that a credit is a ‘push’ from an end-user’s account, and a debit is a ‘pull’ from that end-user’s account. Here’s the difference:

ACH debit: This is when the originator (the person or organization initiating the transaction) asks the ACH network to ‘pull’ money from another account, such as their customer’s. This is often used in auto-pay for pre-authorized bill payments.

ACH credit: This is when the originator ‘pushes’ money from their account to another, such as for a direct deposit paycheck or a P2P payment made on Venmo, for example.

How ACH works

ACH transactions are processed in bulk. Each individual transaction is packaged as part of a larger bundle, then passed through the ACH network at five regular intervals each business day. An example of an ACH transaction could look like this:

- The originator (the fintech developer) initiates a payment (a credit or a debit from one bank account to another)
- The payment is transferred to the Originating Depository Financial Institution (ODFI); the fintech developer’s bank
- The payment is then cleared by the “network operator,” either the FedACH or the Electronic Payment Network (EPN)

- Funds are either credited or debited to the end-user's financial institution—also called the Receiving Depository Financial Institution (RDFI)—depending on the type of transaction.
- Funds are also either credited or debited from the ODFI, again depending on the type of transaction
- The RDFI settles the funds and deposits them to the receiver's (the end user's) account

See how ACH transfers work for a deeper dive on this topic.

How much ACH transactions should cost

ACH transaction fees vary by processor and/or ODFI. The base price is the network fee, which is usually fractions of a cent. However, the processing partners or banks that most companies use typically add a flat fee between $0.20 to $1.50 per transaction. Higher-value payments may see a percentage based charge between 0.5-1.5%, but this is usually capped at $5.

The cost of ACH transfers can also vary based on whether same-day ACH is used, which can be up to double the cost of standard ACH.

ACH is almost always less expensive than credit cards. For example, a $5,000 ACH transaction might cost a maximum of $5, whereas the same transaction would cost between $100-$150 via card networks that charge the typical 2-3% fees.

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Getting started with ACH

While it can feel overwhelming to get started with ACH, many organizations are already using it, and the ACH infrastructure is well set up for those who are just starting out. Here are the three steps to start your ACH journey:

Three steps to start accepting ACH

1 Choose a customer verification method
Onboarding new customers to ACH requires that they share their account and routing numbers and that the business verifies them. This can be achieved in several different ways. In the past, banks asked customers to provide a voided check or manually verify microdeposits, but these traditional methods can take several days to complete and impede ACH adoption. Today, new methods like instant account verification reduce this time from days to seconds, and have opened the door for ACH to be used in more areas.

2 Find a payment processor
Many payment processors (e.g. Dwolla, Square) provide ACH services. Additionally, some banks can provide these services, but they may take longer to integrate with than a payment processor. When deciding on who to partner with on ACH, it's important to ask the right questions, as different ACH processors will vary on the following factors:

- Time it takes to go live
- The speed at which they process payments
- Control over the process that they give to businesses
- ACH processing fees
- Fraud prevention capabilities
- Compliance processes

3 Add ACH to your product experience
Once a verification and payment processor is chosen, you should decide how you want to incorporate ACH into your money movement experiences. This depends on whether you choose to use it for signing up new customers for account funding, payment over an e-commerce platform, or something else.

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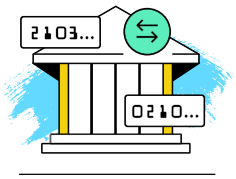
How Plaid helps businesses get started with ACH

Plaid provides ACH verification and bank account linking services and partners with a host of vendors to process ACH payments. Using Plaid, organizations can get started with ACH in one of two ways:

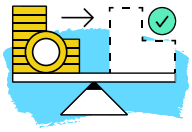
1. **ACH enablement:** Verification is the first and most important step for creating a frictionless ACH onboarding experience. Plaid Auth enables instant account verification in as little as seven seconds for about 90% of financial accounts and has fallback options for the remaining 10%. Using Auth, customers simply choose their financial institution from a list and enter the username and password associated with the account. Once verified, they're routed to the next step of the ACH transaction.

   In addition to Auth, Plaid Identity can pull the address, name, phone, and email associated with a connected financial account and compare it against what a user has provided, which complements the KYC process. On top of that, Plaid Balance can check account balances in real-time to ensure that a customer has enough funds to make a transaction, reducing both ACH returns and overdraft/NSF fees.



Auth
Instantly authenticate bank accounts

Identity
Verify users' identities to mitigate fraud risk



Balance
Verify account balances to prevent NSFs

2 **Full ACH solution:** For businesses that want one ACH solution for everything from verification to transaction, Plaid is integrated with over 50 payment processing partners—each with their own unique specialization—for the following business models:

- ACH transfers for account funding and payments
- Digital asset custody and settlement
- Card issuing
- Invoicing and bill payment

In addition to providing ACH enablement and full solutions, Plaid also offers risk reduction through Signal—a data insights tool that helps companies make smarter, faster decisions about the potential return risk of ACH transactions. Signal provides real-time analysis and returns risk signals indicating the likelihood of an ACH return. These insights help companies streamline the ACH decisioning process and confidently make funds available to low-risk users more quickly, while reducing operational costs by minimizing the risk of ACH returns.

Along with our partners, Plaid's goal is to provide a best-in-class ACH onboarding experience that converts into more paying customers and funded accounts.

chime®

Case study: Chime

When new members of the neobank Chime connect an external bank account for ACH funding with Plaid, they're 3x more likely to fund their account than those who choose other methods.

7s Plaid connects user bank accounts in as little as 7 seconds.

3x Chime's new customers are 3x more likely to fund their accounts.

Managing ACH operations and risks

Understanding ACH compliance

As you onboard with your ACH processing partner and/or ODFI, you will need to undergo an initial compliance process. During this process, you'll need to provide documents to your processing partner and/or ODFI such as your corporate information, flow of funds, audits and litigations, and others. This will help them gauge your risk tolerance. If the documents are ready to go, compliance approval can be achieved in as little as 30 days, although sometimes longer.

To make initial compliance go as quickly as possible, it's important to get all documents, policies, and other requested information into the hands of your ACH partners in a timely fashion so they can complete their due diligence without delay. Additionally, any potential roadblocks should be communicated in advance so they can be addressed as soon as possible.

ACH returns and holds: What to be aware of

After getting started with ACH, you might encounter your payment processor putting a five-day hold on funds before dispersing them. That's due to ACH returns. Some of the most common ACH return codes are:

- R01: Insufficient funds
- R02: Closed account

- R03: No account
- R04: Invalid account number
- R10: Unauthorized account

Many processors put a five-day hold on the funds because the transaction may not be posted until 24 hours after it was requested, and the bank has 48 hours to respond. The five-day hold accounts for this lag time between when the error is detected and resolved, giving enough time to process a return, if necessary.

When a receiving bank chooses to return a transaction, they send a message via a network operator to pull the funds back from the ODFI. When this happens, the originator receives a notification of a return and the ODFI will pull funds from the originator's account. Nacha provides a notification of returned transactions at each of their return windows.

What to do after you receive an ACH return

Different returns require different treatment. The most common returns such as data entry errors and insufficient funds are received within 48 hours of posting. However, returns due to unauthorized accounts can come in up to 60 days later. Next-best actions to take after the most common returns can be grouped as follows:

Insufficient funds (R01): These transactions can be retried up to two times. It's best to work with your customer to understand the ideal time (and use a balance check prior to initiation) to ensure that you don't impose multiple returns, which can hit them with multiple NSF/overdraft fees.

Administrative (R02-R04): Because these errors are generally due to the account being closed or invalid, it's best to reach out to your customer and ask them for an alternative bank account to use.

Unauthorized (R10): In this case, the customer has up to 60 days to dispute the transaction. If they do so, there isn't much you can do. At a minimum, you'll need to provide evidence to the RDFI that you had consent to initiate the transaction, in order to maintain good standing with Nacha.

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Nacha 2021 Rule

Businesses that originate online ACH debits must include account validation as part of a commercially reasonable system for fraud detection.

Mitigating the risks of ACH returns and losses

There are measures you can take to reduce the risk of ACH returns and losses. The most effective of which can be taken when onboarding new customers, as taking the necessary steps before the first transaction can have the biggest impact.

Bank account verification: When a new customer provides their bank account information for ACH transfers, it's not only critical to verify that the information is correct, but it's also a Nacha rule for internet-initiated transactions (WEB debits). The rule, which was introduced in 2021, states that bank account information must be verified as a part of a commercially reasonable fraudulent transaction detection system. This helps businesses both stay in compliance and reduce the likelihood of ACH returns due to faulty information or invalid accounts.

To achieve bank account verification quickly and efficiently, electronic verification services are the most effective method. With Plaid Auth, users can verify their accounts in as little as seven seconds by selecting their financial institution from a list and entering their online banking credentials (username + password).

Identity verification: Going beyond account verification is identity verification, which helps protect organizations against bad actors using stolen account credentials to make purchases. This step seeks to validate the bank account holder's identity by matching the identity information that a new customer has provided—such as name, phone, and email address—with what their bank has on file. Plaid Identity can do this in conjunction with bank account verification using pre-built API integrations.

Check the establishment of a bank account: It's possible for a fraudster using either a stolen or fabricated identity to open a 'real' bank account with an established financial institution, which could potentially lead them towards attempting to conduct business with your organization via ACH. In this case, traditional bank account verification and identity checks won't be enough to stop them. To go one step further, seeing a bank account's transaction history can give insight into whether an account is legitimate or fraudulent. Plaid Transactions can provide up to 24 months of transaction history, helping businesses decide whether or not to trust the account opener.

Proof of authorization: In the event of an unauthorized account return (R10) on an internet-initiated (WEB) ACH transaction, originators will be asked to provide proof that they authorized the account. If they can't provide this proof, they can be exposed to R10 returns for up to 1 year, as opposed to 60 days. There is no specific format or language for how this proof should be retained, but originators—at a minimum—should maintain documentation of the following:

1. Express authorization language (e.g. "I authorize X organization to debit my account)
2. Transaction amounts
3. Dates and frequency of transactions
4. Customer account numbers
5. Customer routing numbers
6. Revocation language (when recurring payments are scheduled in advance)

Nacha has provided further guidelines on how to prove authorization for WEB ACH transactions.

Creating new financial possibilities

For those creating new financial products and services, ACH is one of the most effective and reliable ways to get money moving. It provides a cost-effective way to allow customers to fund new accounts, set-up recurring payments, pay for goods and services, and more.

Just like other payment rails, it isn't perfect and carries some risk, but with the right partners and ACH solutions, those risks can be minimized. Effective ACH use allows businesses with innovative new financial solutions to get their customers in the door without breaking the bank—helping businesses create more of the new financial possibilities they seek to offer.

If you're interested in getting started with ACH, Plaid has resources that can help your business get off on the right foot. Fill out the short form on our contact page and a Plaid representative will be in touch.

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Plaid is a technology platform that enables applications to connect with users' bank accounts. We focus on lowering the barriers to entry in financial services by making it easier and safer to use financial data.

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