

stripe

# How AI is transforming payments

Strategies for unlocking revenue growth



AI is transforming payments and creating new opportunities for businesses looking to increase revenue and reduce costs.

Whether you're just getting started with applying AI in payments or expanding your usage, you'll discover in this guide how AI can be used to optimize each stage of the payment lifecycle to turn payments into a revenue growth driver.

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# The AI opportunity in payments: Insights from 2,000+ business leaders

Businesses face increasing pressure to grow profitably while managing rising customer expectations, sophisticated fraud threats, revenue-draining false declines, and growing transaction costs.

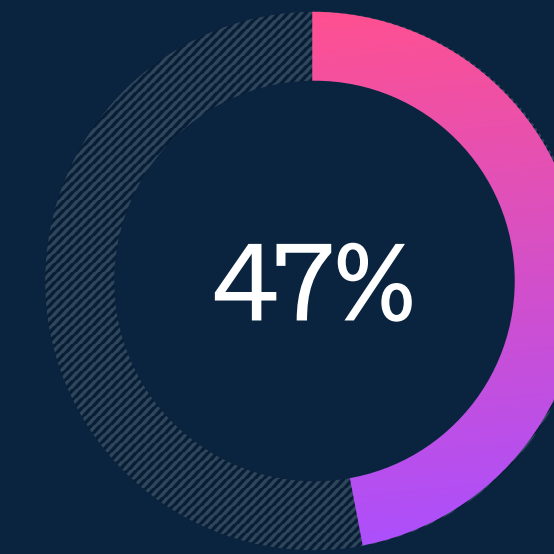
AI is well suited to solve these payment challenges because it can make real-time decisions using hundreds of signals—from determining fraud risk and optimal routing to applying the right security measures and retry strategies—that maximize conversion while minimizing fraud and costs.

To understand the current landscape and how businesses are applying AI in payments, we surveyed more than 2,000 business leaders across global markets, spanning diverse industries, business models, and company sizes—from SaaS startups to enterprise retailers.

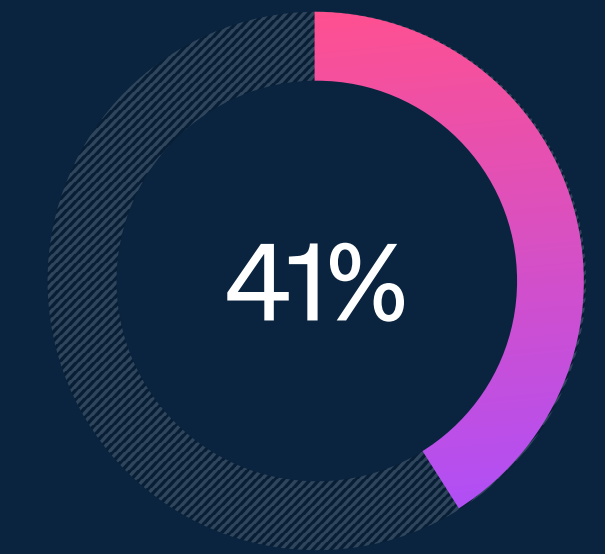
## Business leaders are increasingly turning to AI to improve their payments performance

We found that companies are rapidly embracing AI in payments, with 43% already using AI solutions in payments and 32% moving quickly toward implementation within two years.

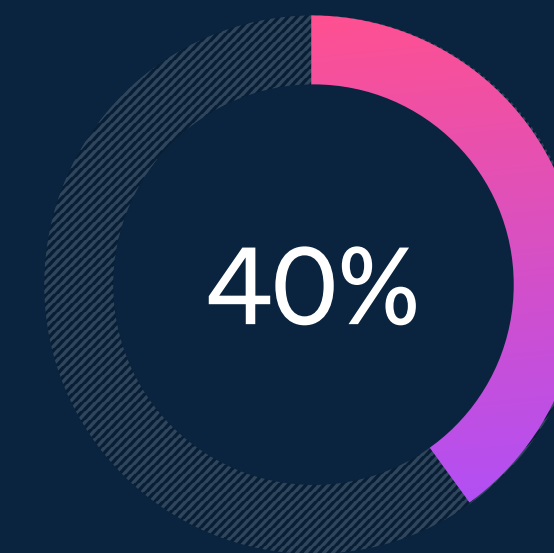
### Top ways businesses apply AI to payments today:



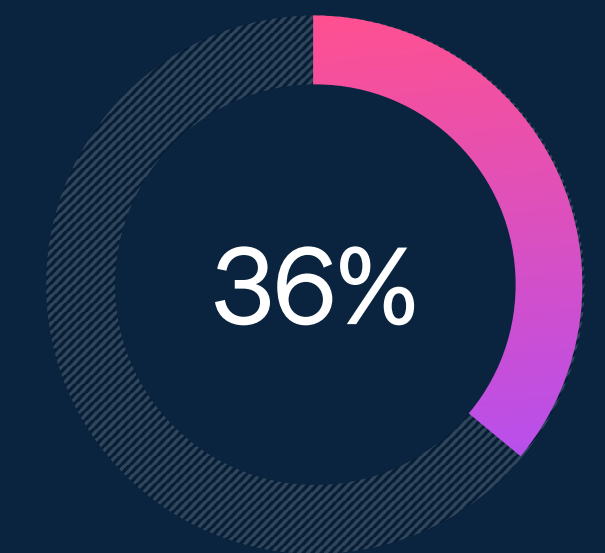
Fraud detection



Payments compliance



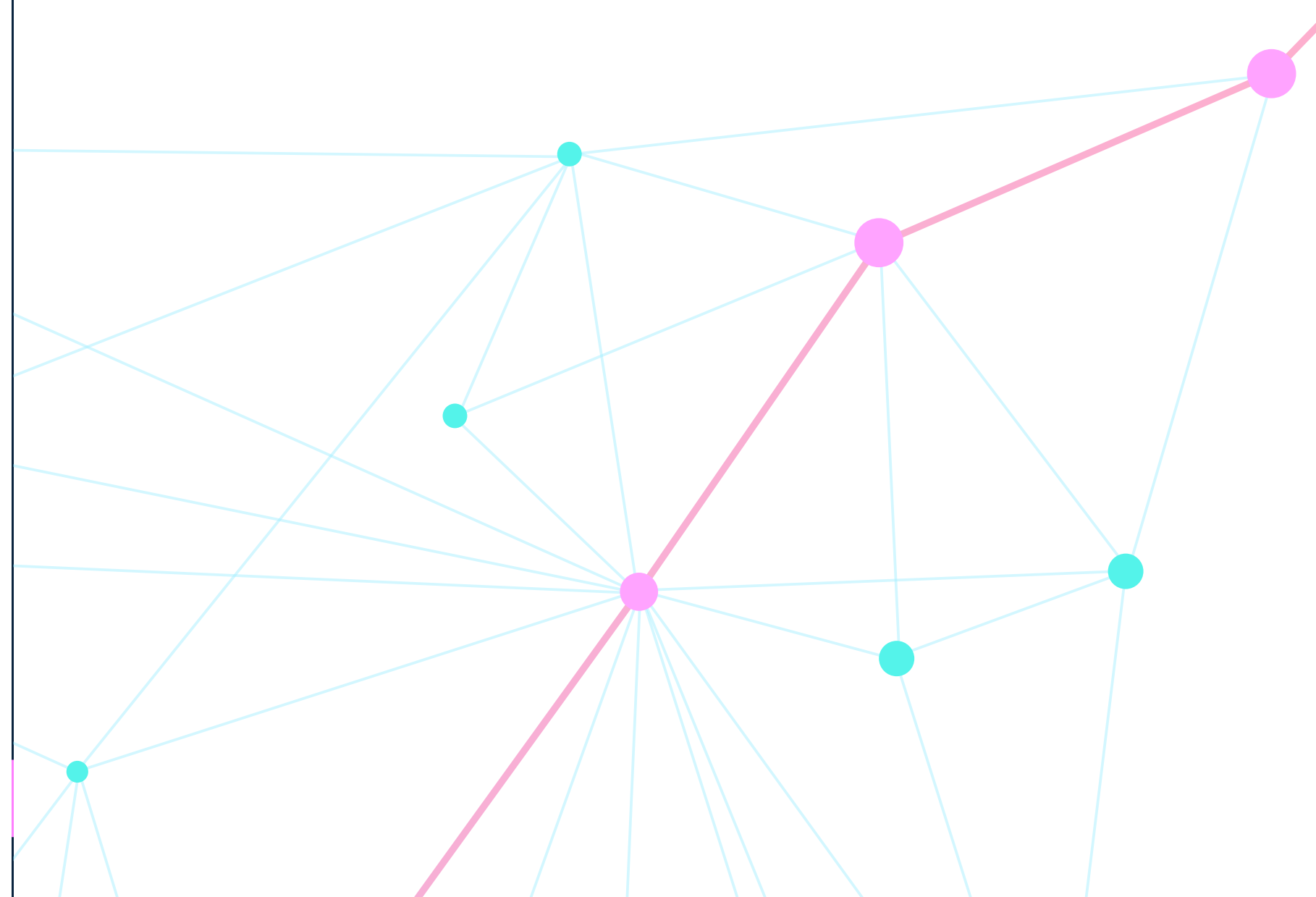
Performance monitoring



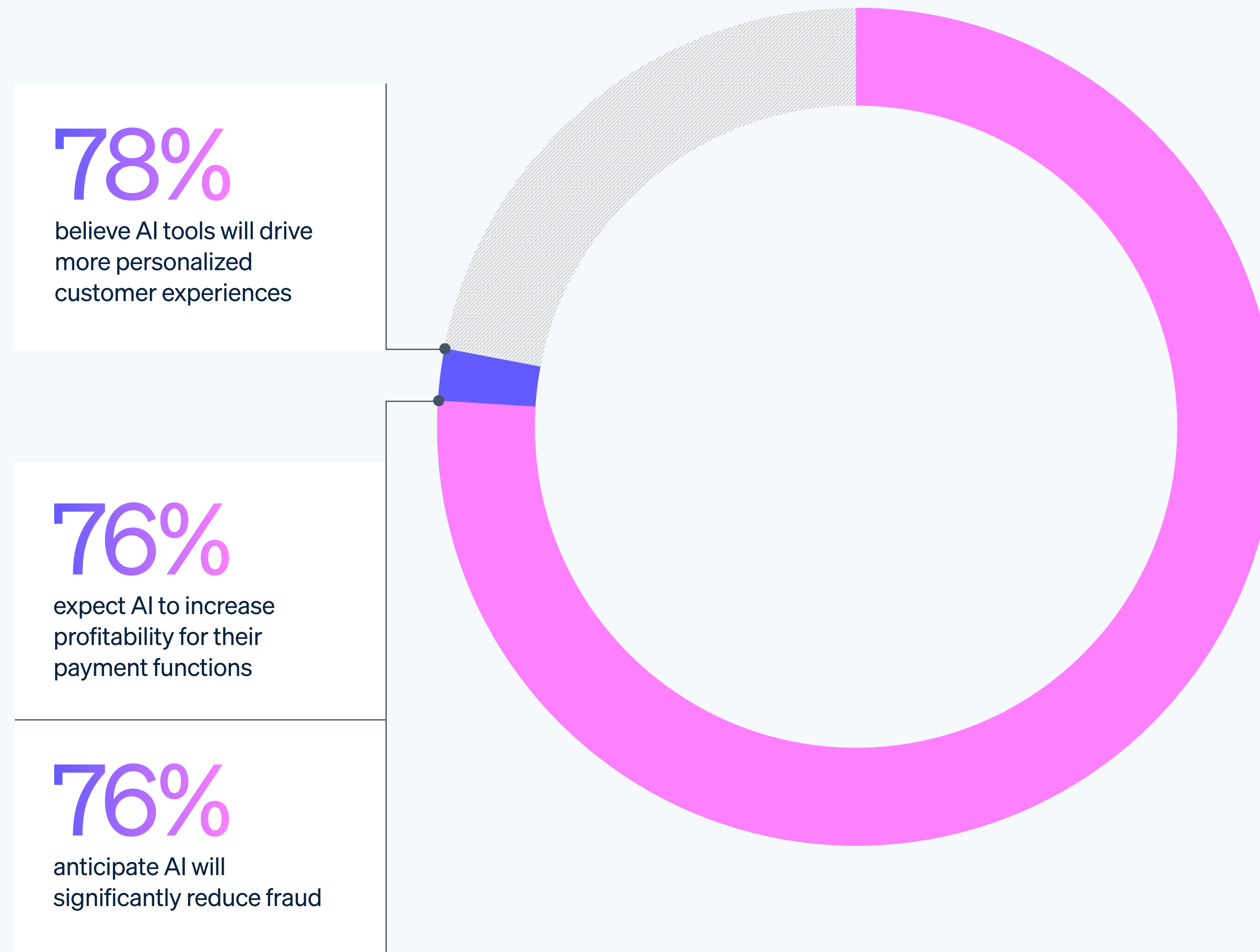
Customer communication

## AI is expected to deliver strategic advantages

This growing adoption is fueled by widespread confidence in AI's ability to transform payment operations—not just as a cost-cutting tool, but as a strategic advantage that can drive revenue growth. Our survey reveals business leaders are optimistic about AI's impact, regardless of whether they're currently using AI in payments.



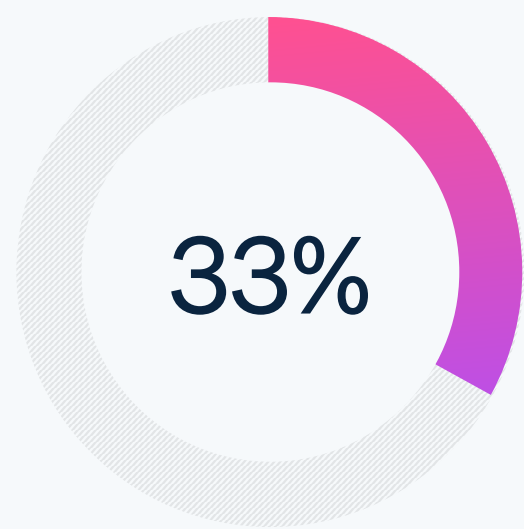
## Top ways businesses expect AI will transform payments:



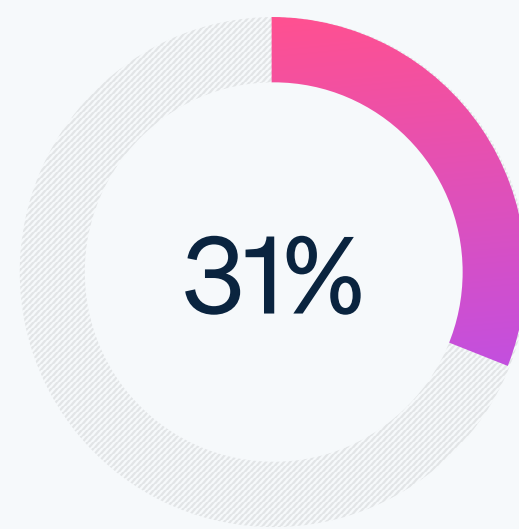
## Businesses are concerned they're falling behind on AI implementation

Despite this enthusiasm, many businesses are worried they're falling behind. In fact, 59% of respondents believe they're lagging behind their peers in AI adoption.

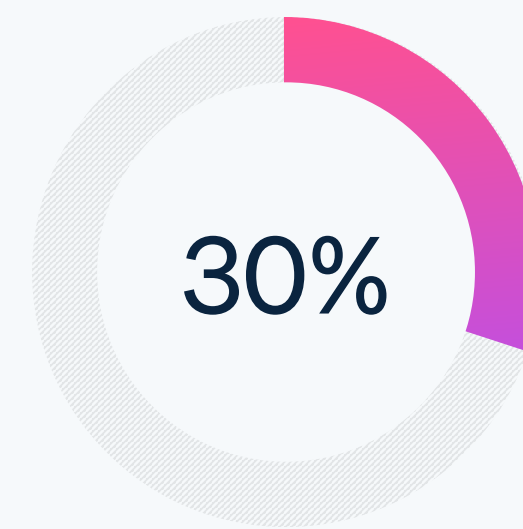
### Top concerns businesses have for adopting AI in payments:



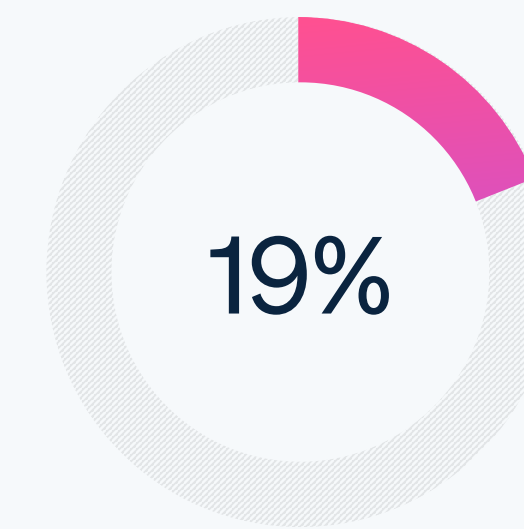
worry about the accuracy of AI tools in payment operations



are uncertain how to measure AI's impact to justify their investment



believe their data quality is insufficient to fully leverage AI capabilities



don't know where to begin

# How AI can be used to optimize payments

Accepting and managing payments involves complex decisions at each stage of the transaction lifecycle, from determining the relevant payment methods at checkout, to tailoring payment requests based on issuer-specific preferences, and more. AI helps businesses optimize these decisions to maximize revenue while minimizing fraud and costs.

## Strategies for using AI to maximize payments performance:

### Optimize checkout experiences

Analyze factors such as customer characteristics, device types, location data, and transaction details to create personalized experiences that drive higher conversion.

### Simplify authentication compliance

Evaluate transaction risk factors and selectively apply security measures to minimize customer friction while ensuring regulatory compliance.

### Reduce fraud

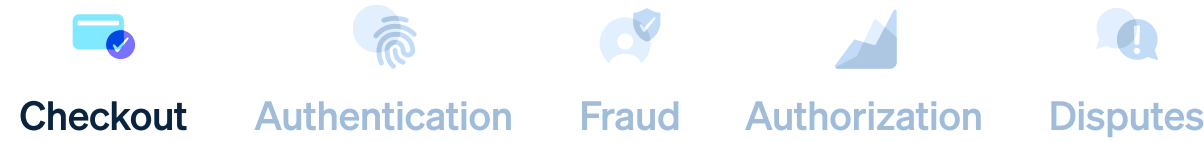
Detect subtle patterns and anomalies across hundreds of signals that indicate fraudulent activity, continually learning and adapting to new threats.

### Boost authorization rates

Determine optimal routing, formatting, and messaging—and strategically retry declined payments.

### Prevent and manage disputes

Identify risky transactions for refunds before disputes happen, and automatically respond with the right evidence when they do.



# Personalize checkout experiences

CHALLENGE

## Meet customer expectations in a complex payment environment

Today’s customers expect checkout experiences that are fast, convenient, and tailored to their preferences. At the same time, the growing number of payment methods makes personalization more challenging—in just the past year, we saw a 40% increase in noncard payment volumes on Stripe. With so many options available to shoppers, selecting the right payment methods to display is key to maximizing conversion. Our experiments found that showing just one payment method that’s not geographically relevant can reduce conversion rates by up to 15%.

Beyond payment method selection, businesses need to balance security and conversion at checkout. Too much friction can lead to cart abandonment, while insufficient security measures risk fraud—making intelligent, contextual decisions important for maximizing both conversion and fraud protection.

SOLUTION

## Use AI to personalize the checkout experience

AI makes it possible to optimize the checkout experience in real time by analyzing the many potential factors unique to each checkout session. Every transaction differs based on who’s buying, what they’re buying, and how they’re buying it. For example, a luxury shopper in London might have different checkout preferences than a commuter making a quick mobile purchase in Tokyo.

These variations in customer profiles, device types, purchase values, and local payment method preferences create countless variables that AI can analyze in real time to personalize the checkout flow dynamically to maximize conversion.

## How Stripe can help

Stripe’s Optimized Checkout Suite uses more than 100 signals to dynamically:

**Present the most relevant payment methods first:** By incorporating on-session signals, as well as broader network signals, Stripe can personalize payment methods in real time for every checkout session. We’ve found that when one additional relevant payment method beyond cards was dynamically surfaced, businesses saw a 12% increase in revenue and a 7.4% increase in conversion rates, on average.

**Tailor fraud prevention measures:** Optimized Checkout Suite works with Stripe Radar to adjust checkout interventions based on the likelihood of different types of risk. Our experiments indicate that applying these interventions selectively can reduce fraud rates by 32% on average for Stripe Checkout users, with minimal impact on conversion.



20%

increase in conversion from implementing Optimized Checkout Suite and dynamically surfacing payment methods with AI



# Adapt authentication for fewer challenges and less fraud

## CHALLENGE

### Navigate regulatory requirements and minimize customer friction

Global regulations increasingly require businesses to authenticate payments as a means of fraud prevention. From the EU's Strong Customer Authentication (SCA) mandates<sup>1</sup> to the Federal Financial Institutions Examination Council's multifactor guidance for high-risk US transactions<sup>2</sup> and Japan's newly mandatory 3D Secure (3DS) protocols<sup>3</sup>, managing global regulations is getting more complex.

These requirements and guidelines, while improving security, can also harm conversion because they add friction to checkout. Businesses face a challenging balance between compliance and customer experience.

## SOLUTION

### Use AI to simplify authentication compliance

AI can be used to make authentication decisions based on real transaction risk rather than a one-size-fits-all approach. By analyzing various factors—including customer behavior, device information, and transaction details—it can determine which payments need additional verification and which can safely proceed without additional steps. This targeted approach helps businesses meet regulatory requirements and prevent fraud while reducing checkout friction that can lead to abandoned carts.

## How Stripe can help

Stripe's integrated authentication solution helps businesses:

**Automatically request available SCA exemptions:** By doing so, you'll only authenticate customers when necessary, creating a more seamless customer experience.

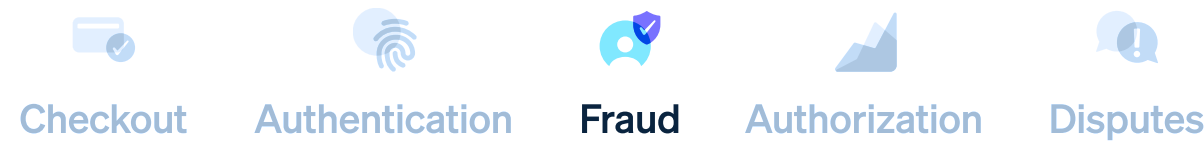
**Intelligently trigger 3D Secure authentication to reduce fraud:** Stripe's authentication solution can trigger 3DS for risky transactions that don't meet Radar's block threshold, shifting liability to issuers. Early users have seen over a 30% reduction in fraud disputes on eligible transactions.

**Recover legitimate transactions:** When a transaction is initially rejected for suspected fraud, Stripe can recover legitimate transactions by applying authentication.



“ We've used Stripe's machine learning-based authentication engine to offer frictionless 3DS and exemption flows. It not only reduces fraud risk, but genuinely elevates our customers' shopping experience.”

Jean-Cédric Costa, Chief Information Officer, La Redoute



# Reduce fraud and prevent card testing attacks

CHALLENGE

## Adapt to new fraud patterns

Fraud is getting increasingly more sophisticated as bad actors adopt new strategies, including using AI tools to find and exploit vulnerabilities in payment systems. One example is card testing attacks, where fraudulent actors run small transactions with stolen cards to identify active accounts before making larger fraudulent purchases. Last year alone, global ecommerce fraud grew by 15%<sup>4</sup>, representing both financial losses and damage to customer trust.

SOLUTION

## Use AI to combat fraud

AI can be used to prevent fraud by detecting suspicious patterns in real time. When suspicious activity is detected—based on factors such as timing, location, or purchase characteristics—AI can flag or block transactions before they’re completed. Unlike static rule-based systems, AI can continuously learn to stay ahead of evolving fraud tactics without disrupting legitimate transactions.

## How Stripe can help

Stripe Radar, Stripe’s fraud prevention solution, uses AI to:

**Reduce fraud by 38%:** Radar automatically identifies and blocks fraudulent transactions, while continuously adapting to new threats.

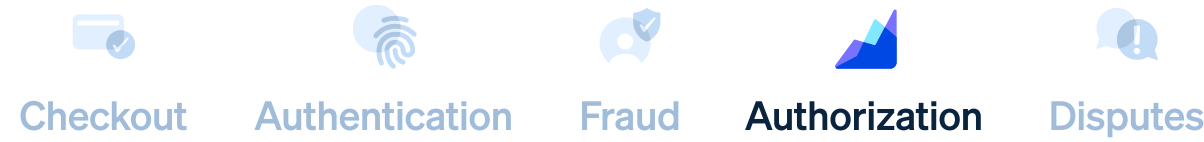
**Prevent losses from card testing attacks:** Radar detects and blocks coordinated efforts across the Stripe network. Card testing attacks are rising, but on Stripe, they’re down 80% over the last two years.

**Boost approval rates with AI-powered, risk-based rules:** These rules combine Stripe’s initial risk score with the issuer’s response to identify and allow safe transactions that would be blocked based on verification issues, such as an incorrect CVC or postal code. Businesses using these rules see a 1.3% increase in payment success rates with minimal impact on fraud.

## KICKSTARTER

\$9.5M

in fraudulent transactions blocked using Radar



# Boost authorization rates and recover revenue

CHALLENGE

## Manage the rise in false declines

As fraud increases, some businesses are responding with stricter security measures—often at the expense of blocking legitimate payments from real customers. These false declines are projected to reach \$265 billion by 2027<sup>4</sup>, costing both immediate revenue and long-term customer relationships.

SOLUTION

## Use AI to maximize authorization

AI can increase authorization rates by identifying legitimate transactions that might otherwise be rejected and taking specific actions to get them approved. This includes optimizing how payments are routed, adjusting transaction details to meet issuer requirements, retrying failed payments at ideal times, and applying other targeted interventions.

## How Stripe can help

Stripe's AI-powered authorization solutions help businesses:

**Increase authorization rates and recover legitimate transactions:** Authorization Boost, our AI-powered product, increases revenue by 2.2% on average with card lifecycle management and payments messaging, formatting, and routing optimizations.

**Recover failed subscription payments:** Smart Retries determines the optimal time to retry declined transactions. With Smart Retries, businesses can recover 57% of failed recurring payments on average and can significantly reduce involuntary subscription churn.

**Catch performance issues early:** AI-driven **anomaly alerts** can identify card authorization rate declines with over 90% precision, so businesses can address potential issues before they impact revenue.

eucalyptus

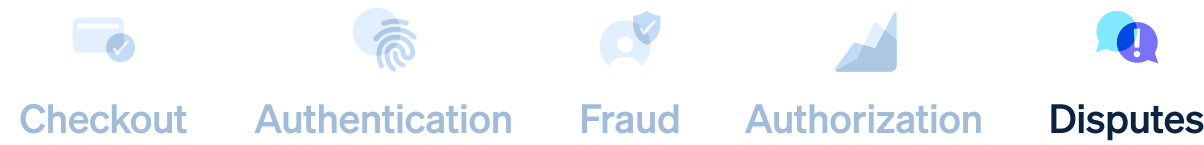
↑ 4.83%

increase in authorization rates using Authorization Boost and Smart Retries

TURO

\$114M

of revenue recaptured through authorization optimizations



# Save time and money on disputes

CHALLENGE

## Mitigate the surge in chargebacks

Global chargebacks are surging, costing businesses approximately \$55 billion annually.<sup>5</sup> Over 75% of chargeback managers report year-over-year increases in their dispute rates.<sup>6</sup> This escalating trend costs businesses both money and time, as teams struggle to manage rising dispute volumes.

SOLUTION

## Use AI to prevent and resolve disputes

AI can turn dispute management from reactive to proactive by identifying risky charges before they become disputes and determining which cases are worth fighting and what evidence to submit. This helps businesses make smarter decisions about when to issue preemptive refunds and when to challenge chargebacks.

## How Stripe can help

Stripe's AI-powered dispute solutions help businesses:

**Prevent chargebacks before they happen:** Smart Refunds identifies high-risk transactions and recommends proactive refunds before customers initiate chargebacks. By analyzing additional signals that Radar receives after a payment is submitted but before a dispute is filed, Smart Refunds catches 26% more fraud on eligible payments.

**Automate dispute management:** Smart Disputes compiles and submits evidence tailored to the dispute reason on behalf of businesses, helping save time and recovering more revenue through AI trained on Stripe's extensive dispute data.



13%

more chargebacks recovered using Smart Disputes

# Looking ahead: AI agents and the future of commerce

We're entering an era where **AI agents will transform commerce**, acting on behalf of both businesses and customers to research products, complete purchases, manage subscriptions, and handle support requests—all with minimal human involvement.

This shift creates new challenges across the payments lifecycle. Traditional payments infrastructure was built for human shoppers—from checkout flows designed for human decision-making to fraud systems trained to identify suspicious human activity. Now, businesses have to rethink how their payments infrastructure supports AI agents.

## How to prepare for agentic commerce

1

Build AI agents that can safely make purchases and automate back-office financial tasks—improving efficiency, saving time, and reducing operational costs.


2


Adapt payment systems for AI agents—from creating machine-readable checkout experiences to evolving fraud prevention in order to distinguish legitimate AI activity from automated attacks.


## How Stripe can help

Stripe has been optimizing payments using AI for humans for over a decade. Now we're doing the same for AI agents.

We're making it easy and secure to integrate payments into and monetize agentic workflows on Stripe with our **agent toolkit**, which allows you to:


 Enable AI agents to safely make purchases online using virtual cards with programmatic guardrails through Stripe Issuing

 Charge for AI agent usage with usage-based billing

 Add select Stripe services to any chat or agentic workflow you create, including Payment Links to accept funds, Stripe Billing to charge for AI agent usage, and Order Intents to enable your AI agents to programmatically make purchases online

We're future-proofing your payments infrastructure by rethinking how money moves when it's an AI agent completing a transaction, with upcoming capabilities to:

 Make your checkout machine-readable

 Allow AI agents permissioned access to your product catalog



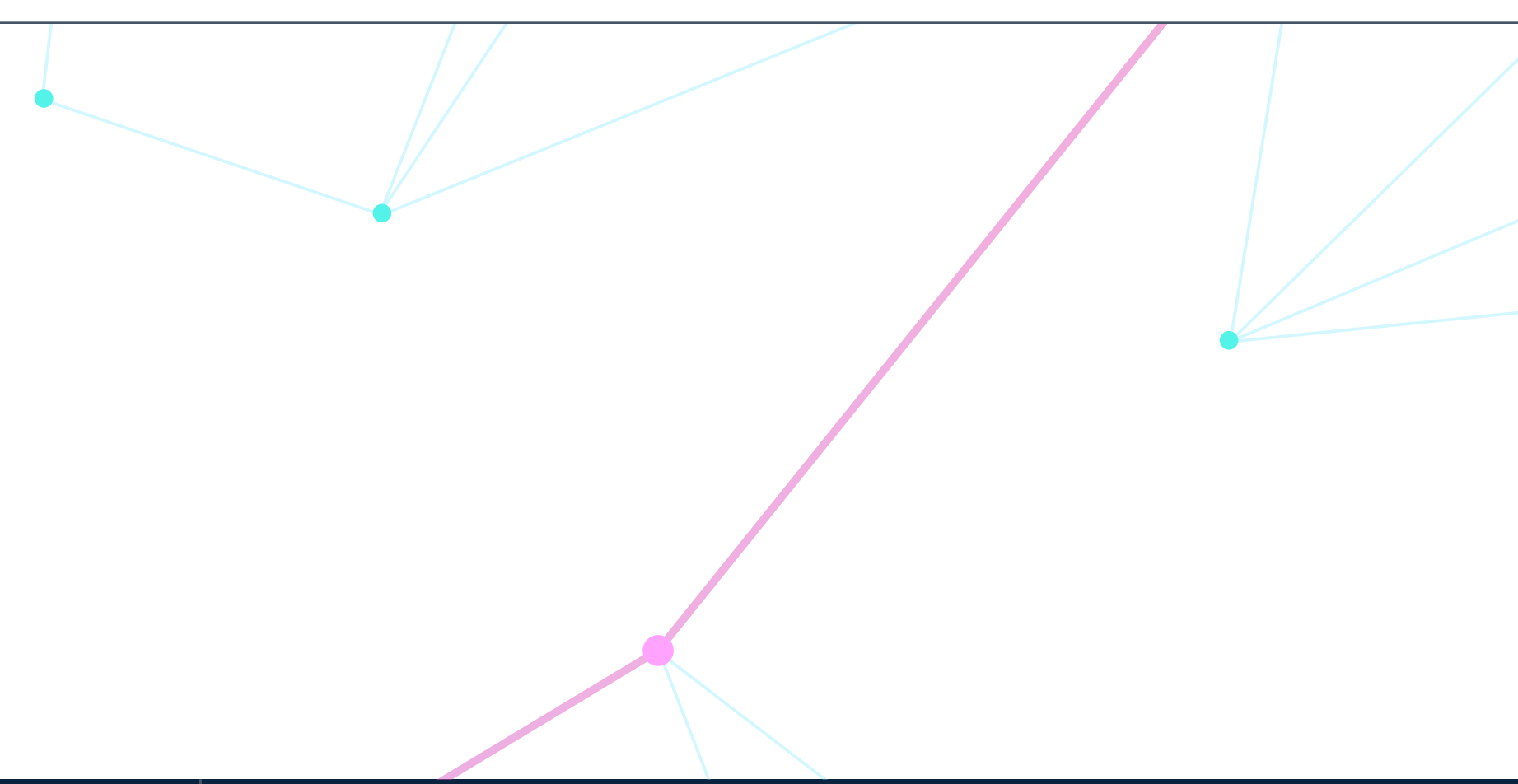
ElevenLabs, a global leader in AI audio research and technology, uses Stripe's agent toolkit to enable voice agents that handle customer service or sales workflows—such as issuing a refund or completing a transaction by sending a checkout link.

550,000

conversational AI agents created on the platform

# Stripe's AI advantage

The power of AI in payments depends on the quality of data and the models behind it. Stripe's AI advantage comes from our unique dataset combined with the world's first Payments Foundation Model—trained on tens of billions of transactions and capturing hundreds of subtle signals that specialized models can't. Together, they enable us to drive significant performance improvements across the payments lifecycle.



## Stripe's unique dataset:



SCALE

**\$1.4 T**

in total payment volume processed in 2024, up 38% year over year



DENSITY

**>92%**

of card payments on Stripe were on cards we've seen before



BREADTH

**Millions**

of businesses across virtually every market segment and geography—from emerging startups to global enterprises—including 15,000 SaaS platforms serving 10 million customers

# Getting started with Stripe's AI-powered payment optimizations

- ✓ **Maximize conversion and increase revenue by 11.9%** on average with Optimized Checkout Suite.
- ✓ **Decrease checkout friction while maintaining compliance** with intelligent authentication.
- ✓ **Reduce fraud by 38%** on average with Radar.
- ✓ **Boost authorization rates by 2.2%** on average with Authorization Boost.
- ✓ **Recover 57% of failed recurring payments** on average with Smart Retries.
- ✓ **Address authorization issues proactively** with over 90% precision via anomaly alerts.
- ✓ **Resolve chargebacks before they happen** with Smart Refunds.
- ✓ **Recover more disputes and save time** with Smart Disputes.

**Connect with a Stripe expert** today to explore how our AI-powered payment solutions can address your unique business challenges.

## Survey methodology

In March and April of 2025, Stripe worked with Milltown Partners (in partnership with their data provider, Focldata) to survey 2,052 business and payments leaders in 9 markets around the world (Australia, Brazil, France, Germany, Japan, the Netherlands, Singapore, the United Kingdom, and the United States of America).

## Sources

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