

**stripe**

# Latest perspectives: implementation of SCA

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**stripe**

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**stripe**

- 1 What is Stripe?
- 2 Reflections on SCA 'launch weekend'
- 3 Our observations: issuer implementation challenges
- 4 Lessons learned & best practice: preparing Stripe for SCA
- 5 Industry collaboration: jointly defining best practice
- 6 Q&A

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# We build payments infrastructure for the internet economy

## Acquiring

Acquirer (CP & CNP)

Acquirer Processor

3DS Server

## Issuing

Issuer

Issuer Processor

ACS Provider

## Tech stack

Risk & Fraud Tools

Marketplace software

Biz Ops software

WHAT IS STRIPE?

# Delivered via a few lines of code



```
1 Stripe.api_key = "sk_test_YbHfZs7fD0DXAxsDCwveh4CF"
2
3 token = params[:stripeToken]
4
5 charge = Stripe::Charge.create(
6   :amount => 10000,
7   :currency => "usd",
8   :description => "Example charge",
9   :source => {
10    :number => "4242424242424242"
11    :exp_month => 9,
12    :exp_year => 2017,
13    :cvc => "314"
14  },
15 )
```



- Merchant account
- Gateway
- ISO
- Visa
- Mastercard
- American Express
- JCB
- Global payment methods
- PCI compliance
- Reporting
- Chargebacks
- Declines
- Fraud
- Tokenization
- Security
- Uptime
- Pre-processing
- Card updates
- Business analytics
- Payment routing
- Payouts
- Instant transfers
- Subscription billing
- Webhooks
- Versioned API
- Developer support
- Multiple libraries

WHAT IS STRIPE?

Over 1 million businesses build on Stripe

amazon

shopify

Uber

Google

Expedia

wework

Booking.com

Microsoft

slack

KICKSTARTER

DiDi

lyft

salesforce

airbnb

Grab

BIRD

TARGET

OpenTable

MINDBODY

stripe

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## Overall, September 14th was peaceful...

**21  
NCAs**

CONFIRMED LOCAL  
DELAYED ENFORCEMENT

**40+  
issuers**

ACROSS EUROPE  
TESTED SOFT-DECLINES

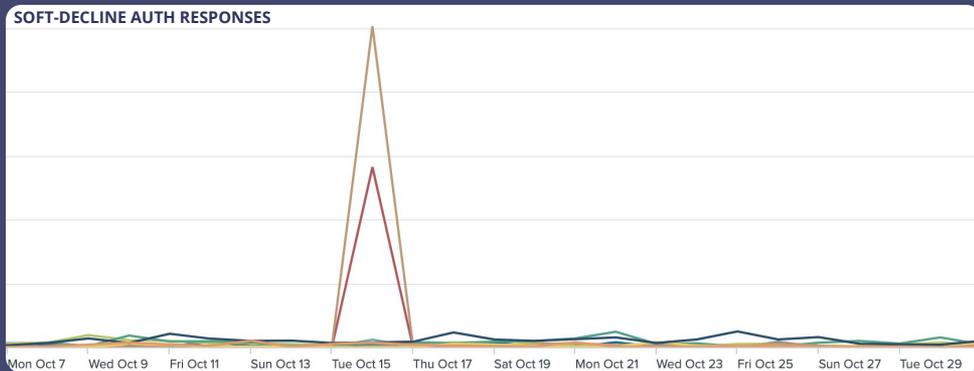
**< 3bps**

OF IN-SCOPE AUTHO'S  
WERE SOFT-DECLINED WITH  
SCA-RELATED CODES

**Issuer  
processing  
errors**

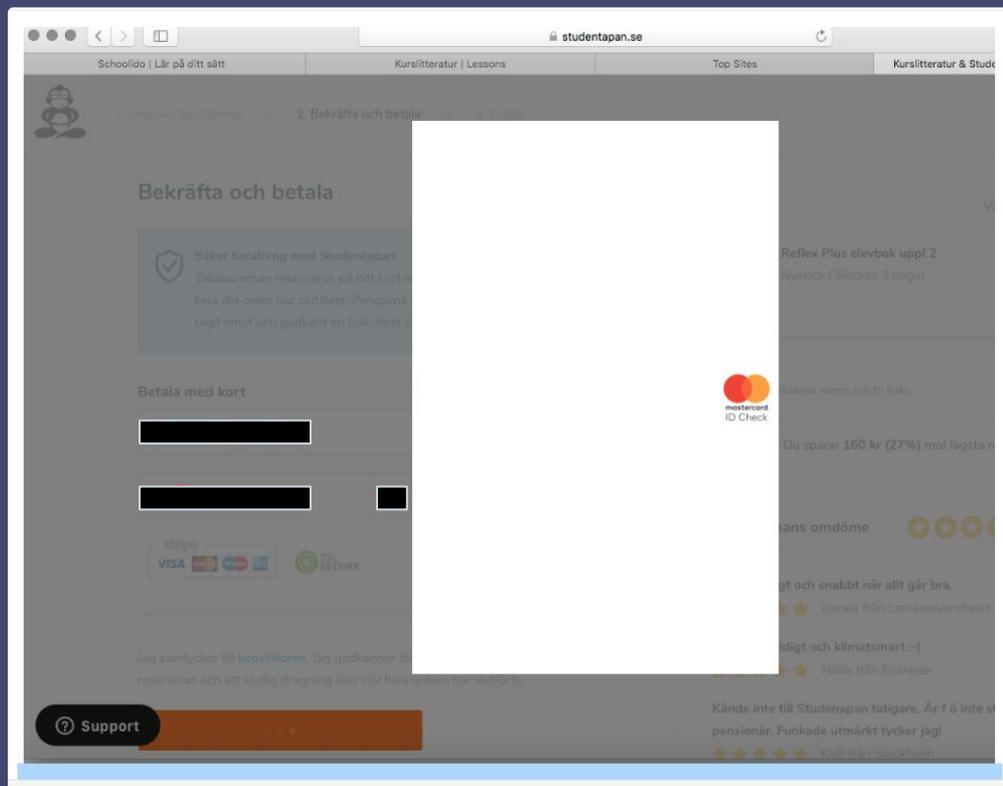
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# Authentication-related soft-decline testing and misuse



- ! Misaligned issuer roadmaps for SCA related testing leads to unpredictable events & spikes (e.g. for soft-declines) for Acquirers and Merchants to manage.
- ! Poor implementation of soft-decline logic has led to out-of-scope transactions being wrongly declined.
- ! We have even seen fully authenticated transactions soft-declined at authorisation.

# 3DS rendering problems break the checkout flow



Above: a lack of browser / extension compatibility prevents customer from completing checkout

- ❗ Lack of compatibility with certain browsers and browser extensions means that 3DS challenge flows aren't presented
- ❗ Issuer web security policies often do not support framing on 3DS1, damaging the user experience for their cardholders by showing a blank 3DS step-up at checkout.
- ❗ 3DS2 specifications require issuers to support framing to improve UX, but many have not applied the changes to 3DS1.
- 🔊 This example is from a Swedish merchant & issuer, but we see this challenge with many (large and small) issuers across EU.

## Among other challenges...

**Poorly  
optimised  
step-up flows**

**Roadmap  
fragmentation  
remains**

**Outage  
handling:  
conversion  
impact for  
attempts**

**Limited  
support for  
3DS2 native  
flows**

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# Making Stripe SCA-ready



## OPTIMISE EXEMPTIONS

- ✓ Identify if a payment requires SCA
- ✓ Optimise the use of exemptions and request type
- ✓ Adapt to reflect industry changes

## IMPROVE AUTHENTICATION

- ✗ Stripe 3DS2 Server for improved reliability & UX
- ✗ Unified API for all major authentication protocols
- ✗ Merchant parameters and controls & custom dynamic authentication rules

# Supporting merchant migrations to SCA-ready APIs

## SCA preparation tools for Stripe users (merchants)



### Emails

informing our users about SCA and encouraging them to take action



### SCA Dashboard

teaching our users about their integrations and providing instructions on how to migrate



### SCA Toolkit

teaching our users about new payment flows and enabling them to design their own



### Docs

instructing our users how to integrate Stripe's new APIs

## Learnings

### Comms should explain why they were received:

Users may be unsure whether SCA comms actually relate to them. We managed this by being transparent about why a user is receiving each communication (e.g., *"You're receiving this because 40% of your payments in the past year would have been affected by SCA."*)

### Users may expect help with third-party services:

Stripe users collectively utilize *more than 400* unique plugins & providers, increasing complexity for migrations. Map complexity early & plan accordingly.

### Engagement correlates with migration intent:

Many users waited until the last few weeks to migrate. In order to monitor our progress ahead of the deadline, we tracked user engagement as a proxy, which proved to be a strong indicator of intent to migrate in time.

# Merchant migrations between processors: import & export

SCA presents challenges for merchant migrations

  
**Merchant's existing payment provider**

  
**Merchant file**

e.g. card-on-file data for existing repeat customers, subscribers and MIT series

Today, a lack of standardised and SCA-ready data elements within the export introduces risks for merchants (e.g. reauthenticate existing customers)

  
**Merchant's new (or additional) payment provider**

## Learnings

### Existing data limitations

Varied file structure and data limitations today make identification of existing MIT series challenging (i.e. MIT mandate is in place, or MIT series was grandfathered).

### Customer impact & conversion risk

As a result, new transactions within an existing MIT series cannot be flagged by the new provider without re-authenticating the customer & introducing conversion risk.

### Opportunity for standardised & SCA-ready files:

Collaboration on a standardised, SCA-ready format for merchant export files would improve the experience for merchants migrating between payment providers.

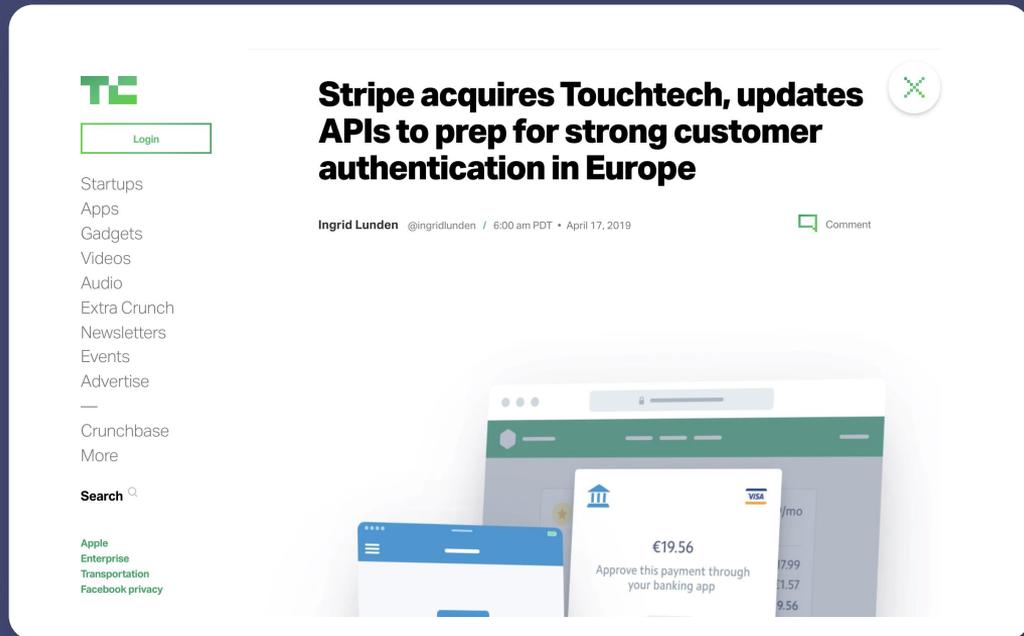
# Preparing issuers for SCA

Merchants and their payment providers are dependent on quality issuer implementations to preserve the existing user experience.

Issuers will increasingly depend on their ACS providers for modern authentication factors and rapid support for new 3DS protocols.

Currently, as noted by many issuers as a factor delaying readiness, providers are slow moving.

We saw an opportunity to to address SCA from both sides – acceptance and issuance.



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# Partnering to support industry optimisation of SCA



## Growing our issuer and acquirer partnerships

Collaboration to define SCA-ready standards where these are missing today (e.g. for merchant migrations).

Identifying best practices that deliver a better customer experience and achieve the security ambitions of SCA while mitigating the risks to conversion and ecommerce growth.

Supporting issuers with test tools to optimise 3DS2; identifying implementation issues during the delayed enforcement window.



## Investing in better authentication

Even the best designed SMS for app-notification-based authentication flows have meaningful conversion drop. We're participating in W3C's *Web Payment Security Interest Group* to enhance security and reduce friction.

### For example, to improve 'desktop' payments:

Web authentication used for payment authentication (e.g., using built in biometrics or security keys/secure hardware).

Customizable UI within the browser to integrate more closely with the merchant checkout (similar to mobile native 3DS).

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**Thank you!**

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