

The Impact of SCA

SHAKING UP EUROPE'S ONLINE ECONOMY

COMMISSIONED BY

stripe

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Europe's Online Economy is Set to Lose €57bn from SCA

The mechanics of Europe's online economy are about to change forever. While this may be beneficial in the long run, 451 Research estimates that European businesses stand to lose €57bn in economic activity in the first 12 months after Strong Customer Authentication (SCA) takes effect due to a reduction in conversion rates (see Figure 1). This figure represents nearly 10% of the €592bn in online sales we forecast in the European Union for 2019.

Figure 1: SCA will drive an increase in checkout abandonment

Source: 451 Research

In the first year, SCA will result in an estimated

€57 billion

in purchase volume being abandoned as a result of added friction at checkout



SCA is being introduced as part of the second Payment Services Directive (PSD2) with the intention of reducing fraud rates and enhancing the overall security of online payments. It will require online businesses in Europe to capture two mutually independent forms of authentication for most customer-initiated online payments starting on September 14.

While these objectives are laudable, SCA brings with it deep consequences for the customer experience and a far-reaching impact on Europe's online economy. Online businesses that fail to abide by these requirements to build additional authentication into their checkout flow will see a dramatic drop in approvals as banks become obligated to decline their transactions outright.

We surveyed 500 payments decision-makers at European businesses with more than 50% of their annual revenue occurring online and 1,000 European consumers, and their responses underscore the extensive market impact that SCA will have:

European businesses underestimate the complexity and impact of SCA and are racing against the clock to become compliant in time.

- SCA's complexity will disproportionately impact small businesses. Three in five businesses with fewer than 100 employees are unfamiliar with SCA, don't plan on being compliant before September, or are unsure when they will be ready.
- While most payments leaders at online businesses are at least familiar with SCA, preparedness is remarkably low. Just two in five respondents aware of SCA said they feel prepared to address its requirements. Outside this sample of highly qualified payment professionals working for online businesses, awareness in the broader market is alarmingly low.
- There's a difference between being ready in terms of having a fully optimized checkout flow for SCA and exemptions and being ready in terms of meeting basic compliance. We're concerned that many merchants are overlooking this and, therefore, are at risk of a material impact to conversion upon SCA enforcement. Only one in two anticipate being SCA-compliant prior to September. Another 44% plan to cut it close, anticipating they will be compliant only at the time SCA goes into effect.

It's an 'all hands on deck' effort to address the SCA compliance burden as businesses prepare for a major strain on customer experience with long-term implications.

- Building authentication into the checkout flow and creating processes for managing transactions that are exempt from SCA will be an 'all hands on deck' effort for many IT teams that will last long after September.
- IT integration complexity, implementation cost and customer experience impact are the top three concerns online businesses have about SCA, which shows the variety of challenges it will pose.

The customer experience is under siege – businesses should expect a material impact to their bottom line.

- The low tolerance for checkout friction among online shoppers has serious consequences for businesses that fail to deliver. Just 47% of European consumers feel today's online checkout process is 'very easy.'
- More troubling is that more than half of online shoppers (52%) that abandon a purchase end up completing the transaction with a different merchant. As a result, we expect SCA to drive a material spike in cart abandonments as consumers quickly eschew merchants with unoptimized authentication flows.
- Still, it's surprising that 60% of European consumers said they would prefer to be authenticated by every online business while just 17% say they'd prefer no authentication.

Businesses wildly underestimate the criticality of sophisticated exemption engines and are running dangerously behind schedule in their efforts to implement 3D Secure 2.

- Many merchants are underestimating the complexity and resource burden of managing exemptions, with 50% of respondents planning to handle management of exemptions completely in-house. These merchants are at high risk of conversion loss.
- While 3D Secure 2 (3DS2) is emerging as the primary framework by which online businesses will address SCA's requirement, 25% of online businesses are not yet familiar with it. Further, for those that are familiar, 24% believe they will be implementing after the September deadline, or not at all, while 45% will be cutting it close.
- 3DS2 is not the panacea for SCA. Payment providers and merchants that plan to rely solely on 3DS2 to address SCA are putting themselves at risk, especially considering not all issuers will be in a position to support a fast and viable 3DS2 flow by September.

SCA reaffirms the increasing strategic importance of payments for online businesses

- Well over three-quarters (87%) of online businesses in Europe agree that SCA will increase the importance of payments as a competitive differentiator, rising to 95% of those with more than 5,000 employees.
- Providers with sophisticated exemption engines, 3DS2 expertise and an ability to minimize shopper friction will be best positioned to mitigate SCA's complexity and convert it into an opportunity for competitive differentiation.

The 451 Take

Many businesses – especially smaller ones – have yet to fully grasp the disruptive impact SCA will have on Europe's online economy. Our surveys with payments decision-makers indicate low levels of preparedness and, most troubling, a lack of appreciation for the consequences SCA presents to the customer experience. Effectively addressing SCA will require deep payments expertise, especially as it relates to implementing 3DS2 and handling exemptions. Online businesses are underestimating the importance of these areas, putting themselves at risk of experiencing a dramatic drop in conversions as online shoppers confront enhanced friction. To avoid disruption and distraction, we advise online businesses to align with payment partners that can enable them to offload the burden of SCA compliance. Providers with sophisticated exemption engines, 3DS2 expertise and an ability to minimize shopper friction will be best positioned to mitigate SCA's complexity and convert it into an opportunity for competitive differentiation.

Many merchants are underestimating SCA's complexity and impact

With SCA's go-live date now being measured in months, our survey has revealed that awareness among payments professionals at online-centric (i.e., more than 50% of annual revenue online) European businesses is improving. German and Spanish businesses stood out with the highest familiarity while UK businesses, which will also be impacted by SCA, had the lowest level of familiarity.

Outside this sample of highly qualified payment specialists working at online businesses, awareness in the broader market is alarmingly low. Industry feedback and discussions with payment networks, business owners and professionals whose organizations have a more traditional mix of online and offline payment volume demonstrate that European merchants are largely unaware of SCA.

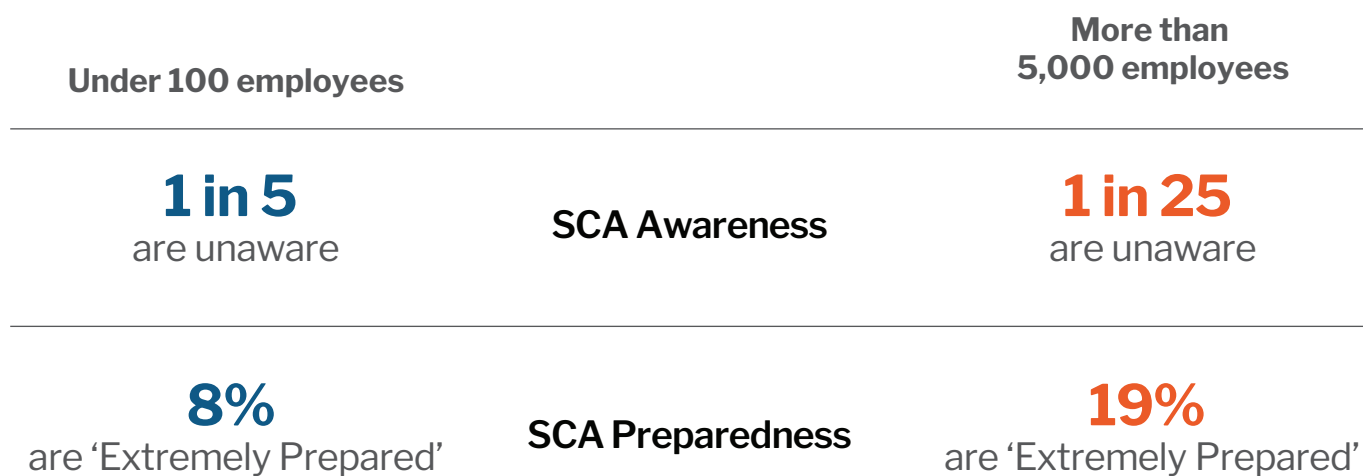
It is important to note that SCA awareness does not equate to preparedness. Just 15% of online businesses aware of SCA said they feel 'extremely prepared' to address the new requirements that it entails while two in five said they are prepared. Further, **only one in two anticipate being SCA-compliant prior to September**. Another 44% plan to cut it close, anticipating they will be ready only at the time SCA goes into effect.

With this in mind, it was surprising that 85% of respondents aware of SCA believe it will have a 'very' or 'somewhat' positive impact on their business. This disconnect indicates to us that many online businesses are vastly underestimating both the complexity of SCA and the consequences of inadequately addressing it. Further, it provides evidence that SCA is largely being viewed through the lens of fraud reduction while the impact on conversions is being dramatically underestimated.

SCA's Complexity Will Disproportionately Impact Small Businesses

Company size has a significant bearing on a merchant's level of SCA awareness and preparedness. While awareness is nearly universal for online businesses with more than 5,000 employees, one in five of those with fewer than 100 employees have not heard of SCA (see Figure 2). Small online businesses – the ones that will need the most support to reach SCA compliance due to resource constraints – also feel significantly less prepared to address SCA compared to large enterprises. In total, three in five businesses with under 100 employees are either unfamiliar with SCA, don't plan on being compliant before September, or are unsure when they will be ready.

Figure 2: SCA awareness and preparedness varies by company size
Source: 451 Research



Low Consumer Awareness Increases SCA’s Threat to Online Businesses

Consumer awareness of SCA paints a bleak picture. Nearly three-quarters (73%) of shoppers are unaware of new authentication requirements coming to the online checkout experience in September, meaning card issuers have not yet begun cardholder outreach initiatives in a meaningful way. This should be taken as a major concern for online businesses. Low consumer awareness magnifies the threat of SCA because it increases the likelihood that shoppers will abandon shopping carts in September when they encounter unexpected obstacles while completing a purchase. Proactive education in the months leading up to September will be critical to minimize some of the up-front disruption that the sudden onset of more rigorous authentication protocols will cause for European shoppers.

SCA Amplifies the Compliance and Fraud Management Burden

Regardless of company size, regulatory compliance is a major headache for Europe's online economy. Addressing it often means siphoning off resources from across the organization, creating distractions as engineers shift their focus from the core business, and capital is redirected from innovation and product development efforts. It's no surprise that 71% of online businesses say that compliance is a resource burden for their organization. More than two in five (44%) said that the burden is significant, rising to 62% of fintech services businesses and 56% of those with fewer than 100 employees.

We also find that fraud management is already putting a major strain on Europe's online businesses. Fraud rates are on the rise: 54% of respondents said that their fraud level has increased year-over-year, and 1 in 10 stated that fraud losses represented more than 1% of overall online sales last year. The challenge comes in implementing preventative measures that don't create friction for legitimate shoppers. Nearly half of respondents said that they often or sometimes must sacrifice their user experience to minimize fraud. Further, 'customer experience impact' ranks as the number one concern online businesses have today when it comes to fraud, topping fraud losses and the cost of managing it.

Reaching SCA compliance will only amplify the existing challenges online businesses face from compliance and fraud management. Figure 3 shows that the top three concerns online businesses have about SCA point to its far-reaching business impact. IT integration complexity is top of mind for Europe's online economy, and especially for businesses with more than 5,000 employees. Building authentication into the checkout flow and creating processes for managing transactions that are exempt from SCA will be an 'all hands on deck' effort for many IT teams that will last long after September. Implementation cost is also a primary concern because many online businesses will be required to hire additional engineering headcount or contract with consultancies and systems integrators to help address SCA's intricacies. But aside from the up-front impact of SCA on human and capital resources, the strain SCA puts on the customer experience is likely to have the most consequential long-term implications.

Figure 3: Top concerns point to extensive business impact of SCA

Source: 451 Research



SPECIAL REPORT | THE IMPACT OF SCA

The Customer Experience is Under Siege by SCA

SCA’s impact is particularly concerning when you consider the emphasis European shoppers place on the user experience of the checkout flow. Ideal online checkout experiences are characterized by speed and efficiency while negative experiences are characterized by delays and payment-related issues (see Figure 4). SCA will weigh heavily on these attributes. For instance, poor integration of authentication into the checkout flow will stand in the way of page load speed and mobile optimization while not using the latest authentication technologies (e.g., 3D Secure 2) could drive up the rate of false declines.

Figure 4: Online shoppers place significant emphasis on the user experience

Source: 451 Research

Top attributes of good and bad online checkout experiences

Ideal online checkout experience		Bad online checkout experience
Fast page loads	1	Pages loading slowly
Checkout page optimized for mobile device	2	Lack of payment options to choose from
Checkout form with autofill	3	Transaction getting mistakenly declined

The low tolerance for checkout friction among online shoppers has serious consequences for businesses that fail to deliver. Just 47% of European consumers feel today’s online checkout process is ‘very easy,’ and as shown in Figure 5, many of the most attractive target audiences for online businesses are highly prone to abandoning a purchase when encountering a poor checkout experience. More troubling, however is that over half of online shoppers (52%) that abandon a purchase end up completing the transaction with a different merchant. As a result, we expect SCA to drive a material spike in cart abandonments as consumers quickly eschew merchants with unoptimized authentication flows.

Figure 5: Attractive target audiences are most impatient when it comes to checkout experience

Source: 451 Research



have abandoned an online purchase
in the past six months due to a bad
checkout experience

Off-Session Payments and Card Transactions Stand to See the Most Disruption from SCA

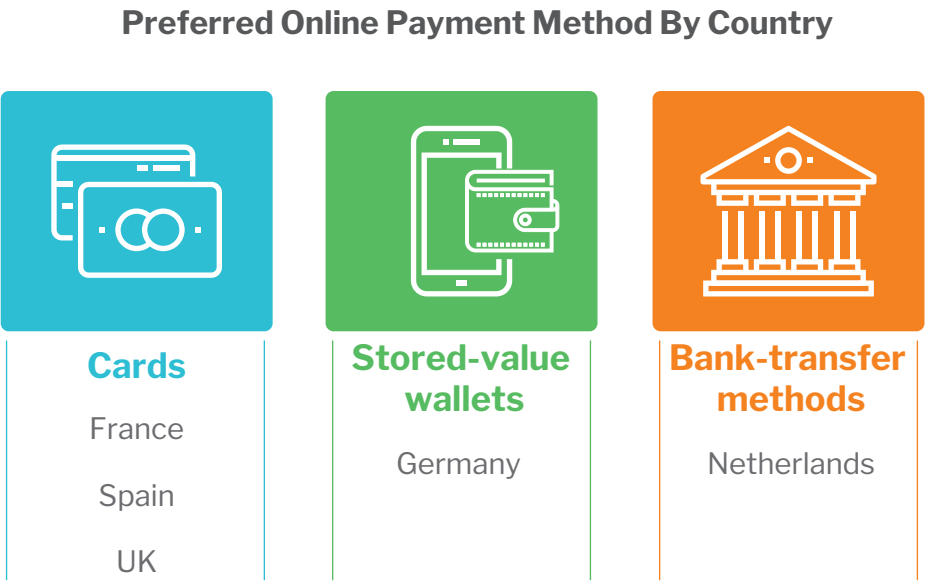
SCA will impact online businesses differently based on a variety of factors. A critical variable will be when a business charges its customers. For merchants that charge customers when they are in the checkout flow (i.e., on-session payments), an authentication request can be served up while the shopper is making a purchase. Those businesses that charge customers when they are not present in the checkout flow using their saved payment credentials (i.e., off-session payments), such as fixed-amount subscription merchants and hotels, qualify as merchant-initiated transactions and technically fall outside the scope of SCA. One-leg-out transactions (i.e., where either the merchant or the cardholder's bank is not located in the European Economic Area), and mail order and telephone order transactions are also out of scope for SCA.

While we anticipate issuers will generally not apply SCA to out-of-scope transactions, poor SCA optimization and implementation by issuers could lead to challenges on these transactions, requiring customers to return to the merchant's website or app to reauthenticate the purchase. The implications here are many and include heightened customer friction, integration hurdles, management challenges and a high risk of failed transactions. Of the 500 online businesses we surveyed, 44% of their overall online card volume was derived from off-session transactions.

The types of payment methods that characterize an online business's revenue mix will be another key variable. As Figure 6 shows, consumer payment method preferences vary across Europe. For instance, while cards are the dominant method in the UK, France and Spain, this is far less the case in Germany and the Netherlands. Consider that while 88% of UK shoppers said they use credit and debit cards at least monthly when shopping online, just 30% of consumers in the Netherlands do the same.

Payment method preference and utilization is important because customers paying with wallets and bank-transfer methods are already accustomed to an SCA-like authentication (e.g., entering a username/password or biometric) flow. While familiar with two-factor authentication in principle, consumers that primarily use payment cards are more accustomed to a low level of friction and no additional authentication, meaning that the user experience introduced by SCA is likely to be seen as intrusive and unacceptable. Businesses must also be mindful that enforcement of SCA is likely to vary by bank, card network and country, adding further complexity.

Figure 6: Payment method preferences differ across Europe
Source: 451 Research



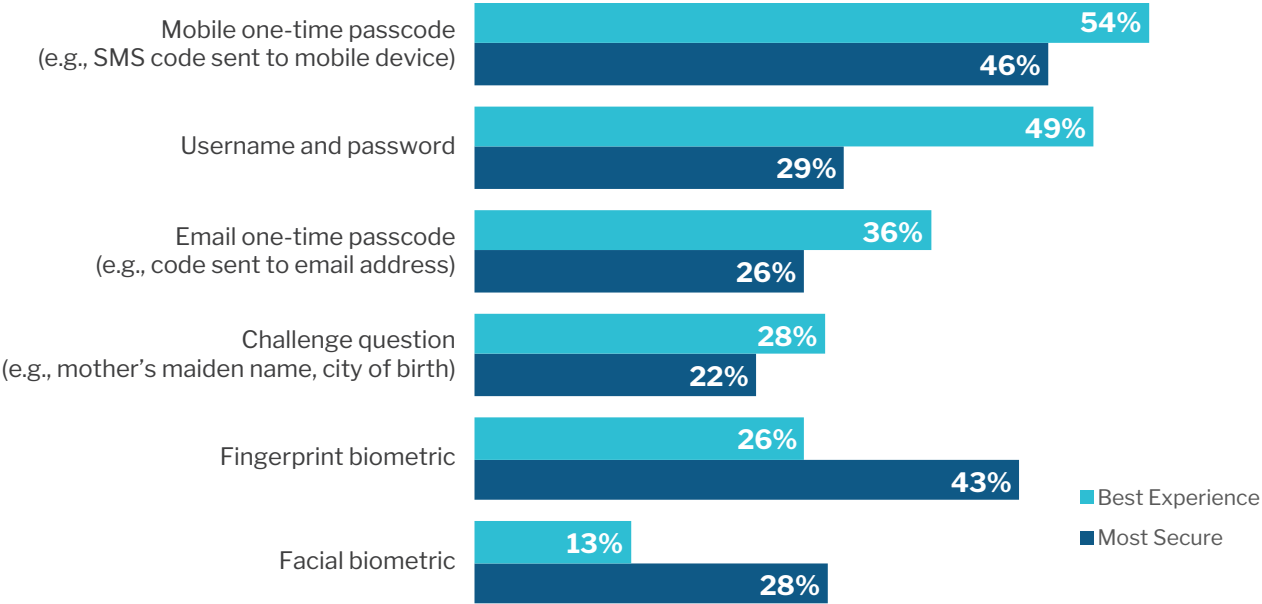
Consumers Have Yet to Grasp the Impact of Ubiquitous Authentication Requests

The extent to which an online business’s customer base tolerates authentication will be another important determinant of SCA’s impact. For instance, ‘no need for any authentication’ was cited by 26% consumers as an attribute of an ideal online checkout experience, but if you look just at Spanish customers, that number rises to 36%, and 30% of Baby Boomers. Further, more than one in five (21%) said that ‘having to enter a one-time passcode’ is an attribute of a bad online checkout experience, which increased to more than one in four (26%) of UK consumers.

Still, it’s surprising to see that 60% of European consumers said they would prefer to be authenticated by every online business while just 17% said they’d prefer no authentication. Further, many consumers said they prefer more friction-prone forms of authentication, such as one-time passcodes, over streamlined forms of authentication such as fingerprint biometrics (see Figure 7). This indicates a need for increased market education to enhance consumer comfort with biometrics, which will be vital as authentication requests increase significantly.

It's worth emphasizing that the impact SCA will have on the online checkout experience across Europe will be difficult for consumers to visualize until it becomes reality. We suspect the majority of online shoppers will see the sudden and universal requirement of authenticating most online purchases as burdensome.

Figure 7: Many authentication methods have a disconnect between user experience and perceived security
Source: 451 Research



The Strategic Importance of Payments is Increasing

Well over three-quarters (87%) of online businesses in Europe agree that SCA will increase the importance of payments as a competitive differentiator, rising to 95% of those with more than 5,000 employees. We share this sentiment and believe SCA will enhance the strategic power of payments by magnifying their impact on conversions and the overall checkout experience. Two areas in particular – 3D Secure 2 and exemption management – will require deep payments expertise to effectively address SCA.

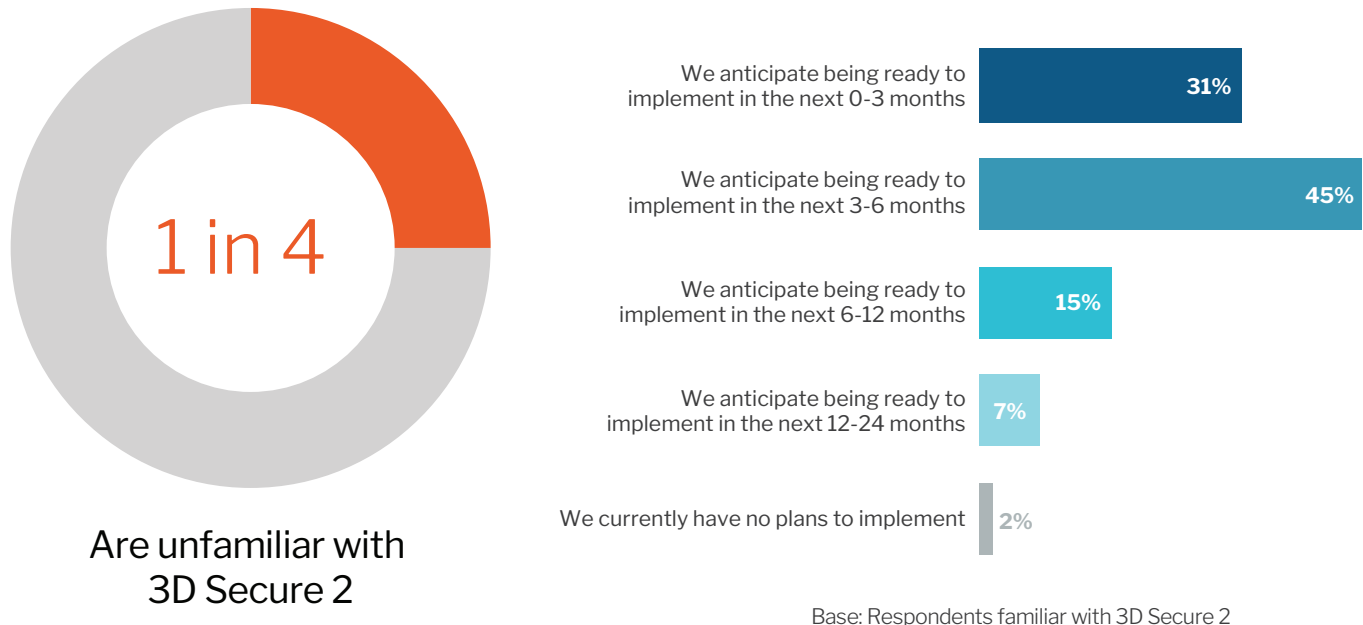
The Race to Integrate 3D Secure 2

3D Secure, which to date has been known by consumers under names such as Verified by Visa and Mastercard Secure Code (and has recently been rebranded to Visa Secure and Mastercard Identity Check), will be the primary framework by which online businesses address SCA's requirements. A critical success factor for optimizing the SCA checkout flow will be implementing the most recent version of the specification, 3D Secure 2. 3DS2 solves many of the shortfalls seen in previous versions of 3D Secure (i.e., 3DS1), bringing to the forefront support for SCA exemptions, mobile optimization, enhanced data sharing between merchants and issuers, and support for biometric authentication.

However, one in four online businesses are not yet familiar with 3DS2, which is deeply unsettling given that respondents were payment professionals hailing from online businesses. Further, of those that are familiar, 24% believe they will be implementing after the September deadline, or not at all, while 45% will be cutting it close (see Figure 8). Based on these results, we anticipate that the majority of businesses that claim they will be ready for SCA by September will be running an unoptimized authentication flow predicated on 3DS1. This is not synonymous with compliance in the eyes of regulators, and the concerns here are many. Consider that issues commonly associated with 3DS1 – slow page loads, mistaken transaction declines and lack of mobile optimization – register as top-five attributes of a bad online checkout experience, according to our consumer survey. These attributes translate to cart abandonment and ultimately lost business for merchants.

Figure 8: Many businesses that meet the September deadline will be running an outdated version of 3D Secure

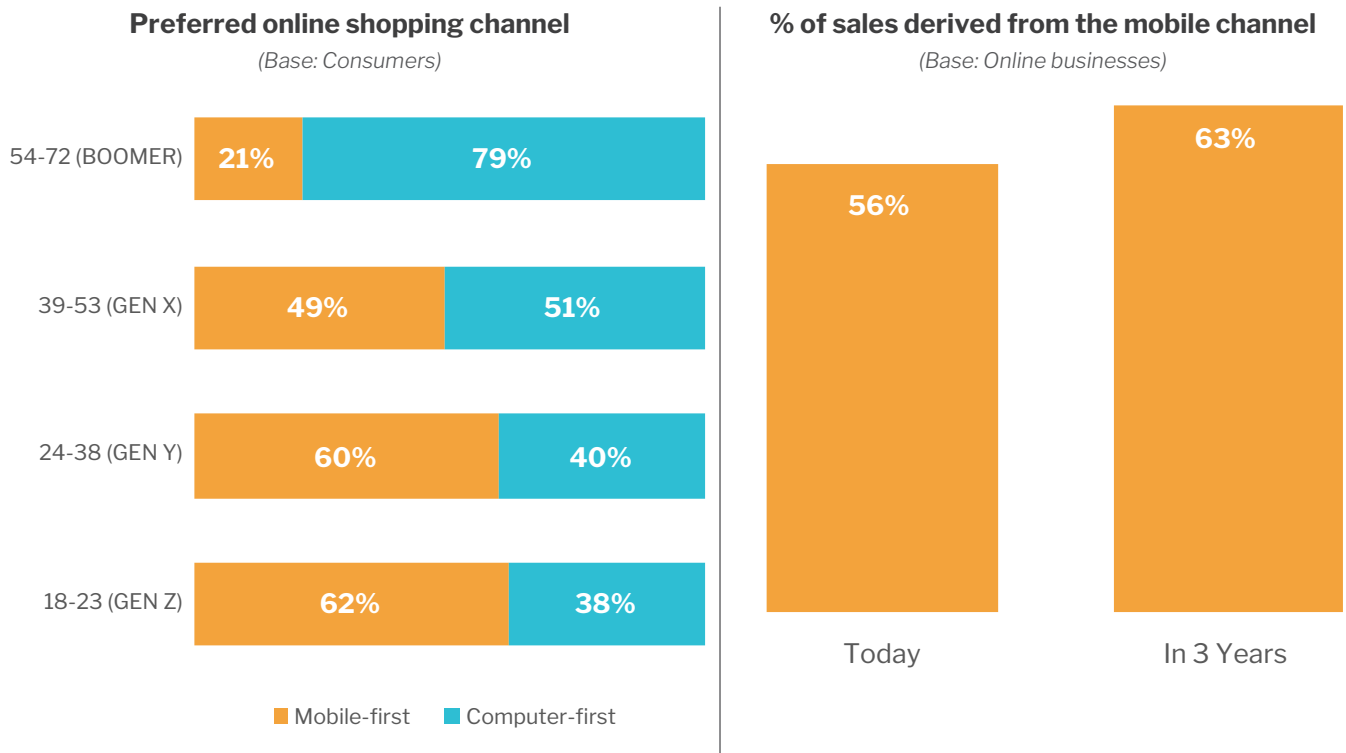
Source: 451 Research



Unoptimized SCA checkout flows – such as those leveraging 3DS1 – will become increasingly onerous with the growing dominance of the mobile channel based on customer preference and transaction volume (see Figure 9). Mobile shoppers have heightened demands for speed and simplicity, meaning any added friction will have an outsized impact on conversions. With the lack of support for biometrics and mobile optimization, online businesses using 3DS1 to meet SCA’s requirements will be delivering a high-friction user experience. Further, with zero support for exemptions under 3DS1, every transaction will be stepped up for additional authentication, causing cart abandonment to spike and putting these businesses at highest risk of being impacted by the €57bn in abandoned purchase volume we expect will stem from SCA in year one.

Figure 9: Mobile's prominence in commerce continues to grow

Source: 451 Research



Still, it's important to note that 3DS2 is not the panacea for SCA. Payment providers and merchants that plan to rely only on 3DS2 to address SCA are putting themselves at risk, especially considering not all issuers will be able to support a fast and viable 3DS2 flow by September. We recommend merchants press their payment providers on what they can bring to the table beyond 3DS2 to streamline the customer experience under SCA.

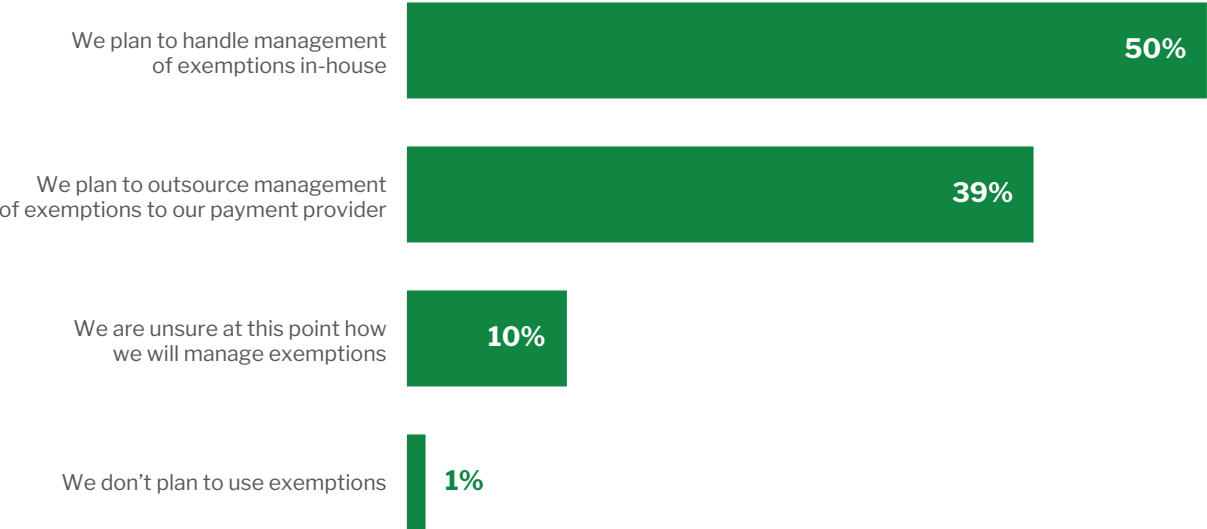
Merchants are Underestimating the Criticality of Sophisticated Exemption Engines for Effective SCA Compliance

Multiple types of low-risk transactions are eligible to be exempt from SCA, which should help to minimize the customer impact of the regulation. The challenge is that there are many nuances associated with exemptions that increase the complexity of effectively administering them. For instance, purchases under €30 are exempt from SCA, but SCA will be requested by the customer's bank once five transactions below €30 have been made or the total value of those transactions reaches €100. Merchant-initiated transactions (e.g., off-session payments) are considered out of scope for SCA, except for the initial payment to the merchant or when the payment card is initially being stored. The Transaction Risk Assessment (TRA) exemption allows for SCA to be avoided for certain transaction thresholds if the payment is deemed to be low risk, but it requires strong real-time risk-analysis capabilities and a low overall fraud rate to utilize it.

Applying exemptions will require multiple specialized capabilities. Exemption engines will be necessary to dynamically identify and apply them, and a deep understanding of card issuer preferences and tendencies will be mandatory to enhance a merchant’s exemption success rate, given that it is ultimately the decision of the cardholder’s bank to approve or deny a transaction that has been submitted with an exemption attached to it. Merchants must also be prepared to automatically trigger an SCA request and resubmit the transaction if a bank declines the exemption. Meanwhile, machine-learning-based fraud-detection capabilities are imperative to applying TRA, which we expect to be one of the most important exemptions.

As Figure 10 shows, 50% of respondents plan to handle management of exemptions completely in-house, rising to 58% of online businesses with fewer than 100 employees. This is a major red flag and clear evidence that many merchants are vastly underestimating the complexity, resource burden and large operational undertaking that exemption management represents. We also suspect that certain merchants, such as subscription businesses, believe they are completely exempt from SCA due to their billing model and, therefore, will ‘manage in-house’ by continuing to process transactions normally under the misguided belief that SCA does not apply to them. Without sophisticated exemption management, online businesses will be subject to the full blow of SCA’s conversion impact.

Figure 10: Many businesses are underestimating the complexity of in-house exemption management
Source: 451 Research



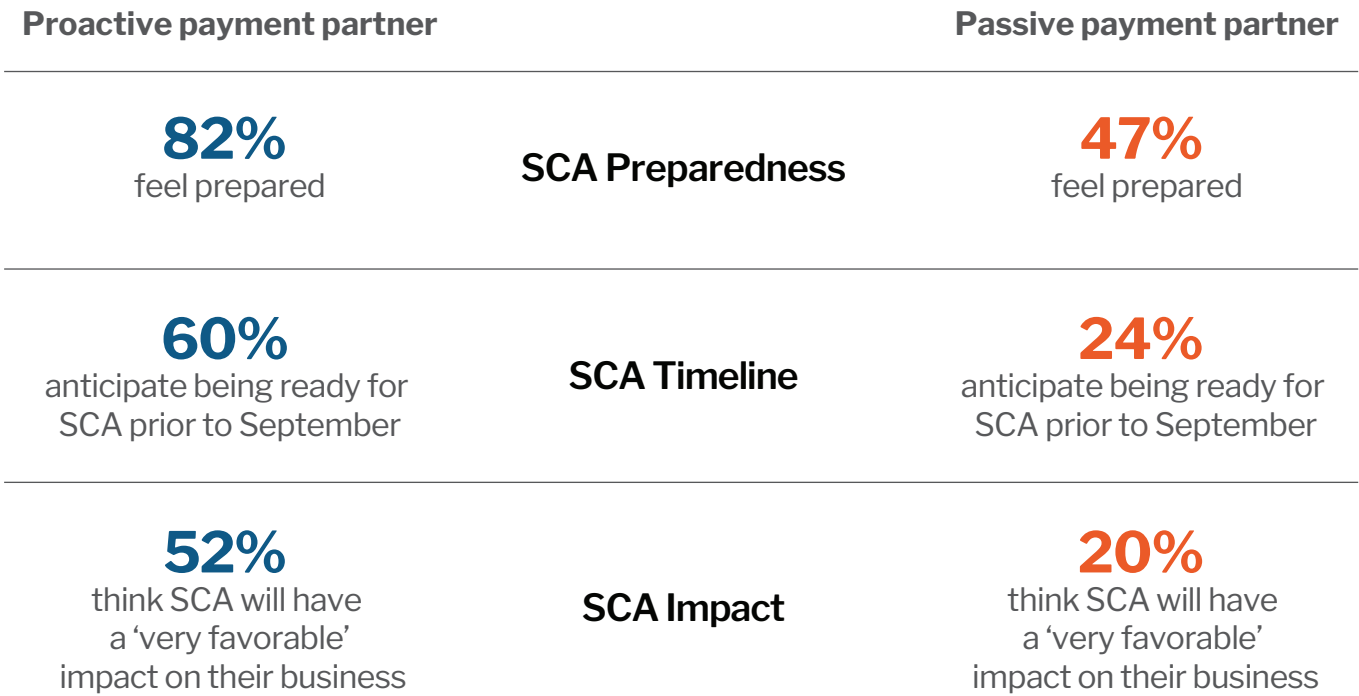
Strong Payment Partners are Critical to Minimize SCA's Burden

To minimize business impact and distraction, online businesses must ensure their primary payments partner is capable of addressing SCA holistically for their organization. The strongest providers will be able to manage SCA across all fronts, from dynamically displaying in-checkout authentication flows to applying exemptions. They will bring to the table the latest technologies, including 3DS2, sophisticated exemption engines and machine learning to help minimize customer friction. Ultimately, their biggest value-add will be in alleviating much of implementation burden and ongoing management necessitated by the regulation, allowing online merchants to maintain a focus on their core business without losing valuable internal resources.

Our survey indicates not all payments providers in Europe are in a position to effectively support online businesses on SCA, however. More than one in four (26%) said their payment provider has been reactive or noncommunicative about SCA, rising to one in three online businesses with 100-999 employees. Further, just one in three businesses said they are 'very confident' in their payment provider's ability to effectively address and manage exemptions for their business. Online businesses must bear in mind that if their payment provider has not made investments in exemption logic or machine learning, or has a fraud rate above a certain threshold, they will not be able to utilize certain exemptions.

Respondents with a payment partner that has been proactively communicating and working with their business on SCA feel significantly more confident in their ability to address the regulation compared to those partnered with a provider lagging in readiness (see Figure 11). More importantly, those online businesses with a proactive payment partner are nearly three times more likely to say that SCA will have a 'very favorable' impact on their business. We expect these businesses will benefit the most by minimizing customer disruption, putting themselves in a position to capture online shoppers migrating away from merchants with friction-prone checkouts.

Figure 11: Online businesses with proactive payment partners have an SCA advantage
Source: 451 Research



Converting SCA from Burden to Business Opportunity

The onset of SCA will have extensive implications for Europe's online economy. Merchants that are inadequately prepared are at risk of jeopardizing customer relationships and revenue while losing valuable resources they could be dedicating to their core business. Those that have been proactive, however, are in a position to take advantage of a potential reduction in fraud losses while differentiating their checkout experience from competitors, helping to drive bottom-line and top-line growth. We believe strong payment partners will be the key ingredient to ensuring SCA moves from burden to business opportunity. With that in mind, we recommend that online businesses:

- **Don't underestimate the impact SCA will have on your business.** Our survey indicated that many online businesses appear to be underestimating the complexity and impact of SCA. Merchants must recognize the financial implications of SCA and the toll that poor checkout flows would take on their customer base. As a starting point, we advise that you immediately determine the ability of your primary payment provider to deliver an optimized SCA checkout flow for your business and handle the complexity of implementation and ongoing SCA management.
- **Ensure your payment provider can minimize friction for your customers.** Online businesses should press their payment provider on not only its readiness to support SCA, but its ability to do so in a way that minimizes customer friction. Items on the checklist should include support for in-checkout dynamic authentication via 3DS2, machine learning and built-in exemption logic. Payment providers that have been actively engaging industry stakeholders (e.g., card networks, banks) and have a position on the issuing side of payments are in a particularly strong position to optimize the customer experience.
- **Prioritize and optimize exemption management.** Exemptions are a critical way for online businesses to minimize checkout friction for customers. Online businesses should ensure their payment provider can handle all aspects of exemptions for their business, from identifying and automatically applying them to triggering an SCA request and resubmitting the transaction if a bank declines the exemption. Given the importance of the TRA exemption, merchants will also want to understand their payment providers' fraud rates to ensure they can take advantage of TRA in the first place. We believe those providers with integrated fraud/risk management and machine learning capabilities as part of their payment platform will be best suited to help online businesses take advantage of this exemption.
- **Approach payments strategically.** Merchants that only look at payments through the lens of cost mitigation are missing the bigger picture of how payments have become a direct input into the customer experience, business growth and conversions. If nothing else, SCA should reaffirm the increasing strategic importance of payments for online businesses and deliver the inflection point needed to reassess their payments partner ecosystem and the value they deliver.

Survey Methodology

In March and April 2019, 451 Research conducted a custom survey of 500 online businesses in the UK, Germany, France, Spain and the Netherlands, completing 100 surveys in each market. We targeted businesses across a range of sizes with more than 50% of their annual sales occurring online. The survey focused on businesses operating in the B2B SaaS platform, on-demand services, retail marketplaces, travel and ticketing marketplaces, fintech services, and traditional e-commerce verticals. Respondents included a mix of business decision-makers such as CFOs, controllers, heads of payments and VPs of finance, in addition to IT decision-makers who play a role in payment technology decisions. All respondents were screened up front for adequate knowledge and decision-making authority for how their business accepts and processes customer payments.

451 Research simultaneously conducted a custom survey of 1,000 consumers in the UK, Germany, France, Spain and the Netherlands, completing 200 surveys in each market. All respondents were above 18 years of age, had a minimum of a high school education and completed at least one purchase with an online business in the last six months.

451 Research Revenue Impact Methodology

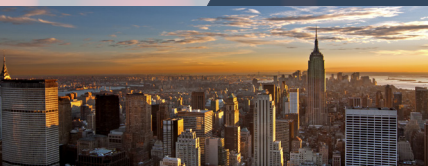
451 Research's Revenue Impact methodology is predicated on proprietary market data derived from our Global Unified Commerce Forecast, which includes multi-channel transaction volume and sales projections for 63 countries. To determine the impact of SCA on Europe's online economy, we assessed data from global payment networks on the current frequency of 3DS1 challenges across Europe and the subsequent rate of abandonment on challenged transactions. This data was modeled with findings from our custom merchant and consumer surveys to determine the percentage of transactions in Europe that will be challenged post-SCA and the resulting abandonment rate.

About 451 Research

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