

## The Next Step in eCommerce

How EMV® Secure Remote Commerce is reinventing the online checkout experience.



#### **Contents**

Executive summary		
eCommerce and card-based payment trends	6	
Redesigning the online checkout experience with Secure Remote Commerce	4.0	
Remote Commerce	10	
A standardized card-based payment industry initiative	10	
Click to Pay is much more than a button	12	
Where do tokenization and identity fit in?	16	
EMV SRC roles and stakeholders	18	
EMV SRC participants and functional roles	18	
Participating stakeholders and associated considerations	19	
Transforming the customer journey	20	
Takeaways and conclusion		



### Executive Summary



Today, payment cards are the preferred method for eCommerce checkout. However, online payments face challenges, such as the rise of card-not-present fraud, inconsistent checkout journeys that create confusion for the consumer, as well as integration complexity for the merchants.

EMV® Secure Remote Commerce (SRC) Specification is the result of a new initiative led by the card industry to fix these problems. SRC seeks to streamline the user experience by binding the consumer's identity with their card and device, minimizing the number of times consumers are asked to enter and expose their card payment data. What is the ultimate goal? To make SRC checkout (also called Click to Pay) the preferred payment option for both merchants and consumers.

This white paper will provide an overview of the SRC initiative, its impact on the payments industry and the customer journey, and highlight possible questions or concerns from the different players in the ecosystem (merchants, acquirers, networks, issuers...) that need to be addressed to enable a successful transition and mass adoption of the EMV SRC Specifications.

This white paper is based on our EMV® SRC Specification v1.1 analysis and discussions with thought leaders in North America, Europe and Asia who are impacted or deeply involved in the SRC initiative. The opinions expressed in this document are solely IDEMIA's and do not represent the opinion of EMVCo or any participating SRC stakeholders.

For more information and discussion on this topic visit: https://www.idemia.com/secure-remote-commerce-src-platform





## eCommerce and card-based payment trends

#### Global growth of eCommerce

Credit and debit cards are the most popular payment methods accepted by online merchants and are the most used payment tool for eCommerce.



potential digital buyers worldwide in 20211



eCommerce sales in Western Europe are expected to reach



accounted for nearly  $\geq$ 

of all U.S. eCommerce sales in 2018<sup>3</sup>



In 2018, 20% of online shoppers

made a purchase at least once a week4



eCommerce worldwide

neared \$ 3T in 2018

increasing the online share of total retail sales to over 15%5



79% of US consumers

have account information stored online with at least one merchant or service provider<sup>6</sup>



In 2017, in China,

eCommerce sales

represented 23%

of the total retail sales7

<sup>&</sup>lt;sup>1</sup>Statista - 2019 - eCommerce Worldwide Dossier

 $<sup>^{2}</sup>$  eMarketer, Western Europe eCommerce Trends in 2012

<sup>&</sup>lt;sup>3</sup> eMarketer, July 2018

<sup>&</sup>lt;sup>4</sup> Statista – 2019 – eCommerce Worldwide Dossier

<sup>&</sup>lt;sup>5</sup> Internet Retailer

 $<sup>^{\</sup>rm 6}$  PYMNTS survey in collaboration with Ondot, 2019

<sup>&</sup>lt;sup>7</sup> Statista – 2019 – eCommerce Worldwide Dossier

#### A fragmented online payment options landscape

Until recently, we observed that a lack of common, inter-operable payment standards was resulting in a fragmented checkout experience. This fragmentation creates confusion and integration challenges for merchants who manage multiple payment options on their websites. This friction often reduces checkout conversion and their bottom line.

#### Below are the major online payment options for eCommerce:

	One-time checkout	<ul> <li>One-time purchase on a merchant's website.</li> <li>The consumer has to enter his or her payment and shipping information at</li> </ul>
		the time of purchase.
	Card-on-File	<ul> <li>Card-on-File (CoF) is a term used when a consumer's credit card information is stored within the merchant database or some other secure server accessed by the merchant.</li> </ul>
- BUY -	Buy button	<ul> <li>Considered as a purchase accelerator: the purchase process is faster and nearly frictionless, as the card-on- file data resides with a payment organization.</li> </ul>
		<ul> <li>It can be proposed by the merchant itself (Amazon 1-Click) or by a third party (PayPal).</li> </ul>
	Account-based payment	<ul> <li>Online payment mechanism based on credit transfer.</li> </ul>
		<ul> <li>Merchants can collect payments from bank accounts (like single euro payments and credit transfer initiatives).</li> </ul>

#### The quest for lower cart abandonment rates

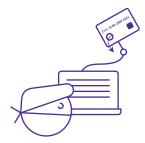
A large part of cart abandonments is a natural consequence of how consumers browse online, with many performing price comparisons or exploring items before going in-store. But cart abandonment could also partially be due to long or complex checkout flows, or because the consumer did not trust the site enough to enter their credit card information.

Being asked by each merchant's site to create an account to initiate payment may also be dissuasive. In 2018, the online shopping cart abandonment rate was 79% worldwide<sup>6</sup>. In the U.K. it was found that British shoppers who abandon online baskets could total up to an annual loss of more than £18 billion (USD 21.7 billion) in sales each year<sup>7</sup>. Studies have found that a better checkout flow and design could increase conversion rates by up to 35%<sup>8</sup>.



## EMV reduced fraud at the point of sale while card-not-present fraud is growing

Chip-based EMV implementation reduced fraud at the point of sale, but online and mobile card-not-present payments remain a high-risk space for fraud. Fraud losses have become a big headache for card issuers and merchants. The lack of security uniformity creates opportunities for fraudsters.



In the case of card-on-file, in order to securely store credentials, merchants have to comply with the stringent Payment Card Industry Data Security Standard (PCI DSS). No merchant wants to be the next victim, but being PCI compliant costs money, time, and resources.

<sup>&</sup>lt;sup>6</sup> Statista – 2019 – eCommerce Worldwide Dossier

<sup>&</sup>lt;sup>7</sup> Barclaycard survey

<sup>8</sup> https://baymard.com/lists/cart-abandonment-rate

## High demand for frictionless checkout experiences

Commerce checkouts can be annoying for the consumer, especially since they vary across platforms and merchants. At the same time, the in-store shopping and payment experience is undergoing a 360-degree shift.

Most major retailers are adopting checkoutfree or scan-and-go options, transforming the consumer experience with identity recognition and personalization. This shift to a new in-store payment experience is also impacting the online world. Consumers want an easy way to onboard and an easy way to pay that minimizes the amount of data that has to be entered manually and the number of clicks it takes to purchase. It is important to keep in mind that offering customers the ability to pay with their preferred payment method is an important part of providing a convenient shopping experience.





PayPal remains the most pervasive buy button online. 64% of online merchants worldwide accepted PayPal as of March 2018<sup>10</sup>.

#### Increased competition from "buy buttons"

With the so-called "buy buttons," the purchasing process usually requires two clicks: one to buy and one to confirm. In some cases, no user ID is required, which allows for a totally frictionless experience. More than seven of ten leading eCommerce merchants now offer at least one buy button, and one in five now offer two or more9.

The card-based payment industry needs to face the increased presence of one-click checkout buttons offered by Big Techs (online service or computer and software companies) and third-party wallets. The payment networks have attempted to address the need for a simpler purchase experience by offering their own buy buttons (Visa Checkout/Masterpass/AMEX Express Checkout), but they have not achieved critical mass partly because of the services implementation fragmentation.

<sup>&</sup>lt;sup>9</sup> PYMNTS' Q2 Buy Button Index

<sup>&</sup>lt;sup>10</sup> Statista – 2019 – eCommerce Worldwide Dossier

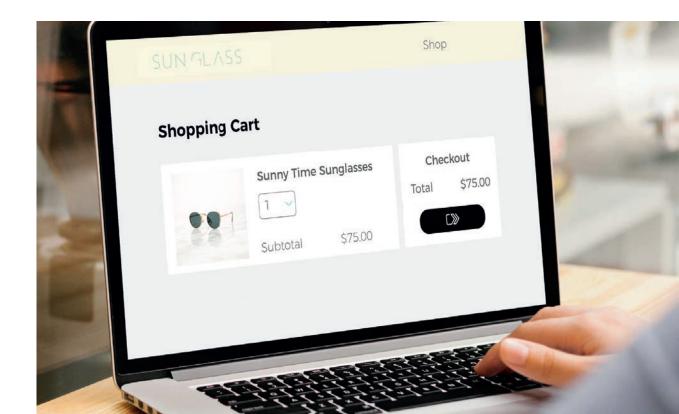
# Redesigning the online checkout experience with Secure Remote Commerce

## A standardized card-based payment industry initiative

In April 2018, Visa, Mastercard, American Express, and Discover announced that they would be working together jointly on a common buy button to make the online shopping experience smoother for customers and reduce friction at checkout. The buy button would provide a one-click option for all of the branded-cards of the participating networks.

Since the announcement, the payment card networks have collaborated in the frame of EMVCo to create a standard that would enable this new capability, named EMV Secure Remote Commerce (EMV SRC). This single buy button will appear on merchant checkout pages and will be usable by any consumer who wants to pay with one of their network-branded payment cards.



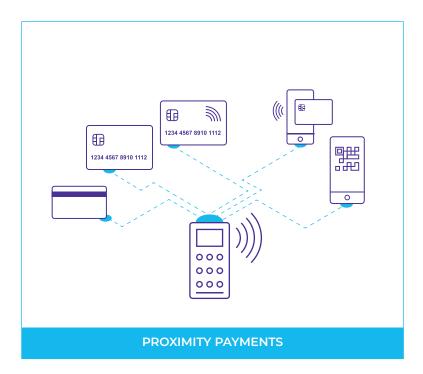


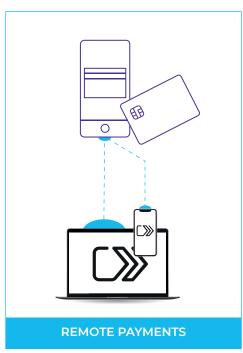
#### A VIRTUAL PAYMENT TERMINAL SPECIFICATION

As they did for proximity transactions and the use of payment cards at physical terminals, the ecosystem is now collaborating to create a standard that unlocks the online commerce opportunities for card-based payments. EMVCo released the EMV® Secure Remote Commerce Specifications v1.0 in June 2019 and v1.1 in 2020, and also made it available for free public download from the EMVCo website. The specification provides a foundation that will enable the processing of eCommerce transactions in a consistent, streamlined fashion across a variety of digital channels and devices including PCs, smartphones, tablets, and other connected devices.

The specification formalizes the creation of a virtual payment terminal and details the consistent framework, integrations, and interfaces required for the ecosystem to propose a unique card-based payment acceptance experience.

The specification also formalizes a dedicated and easy-to-recognize icon to notify consumers that an easy and smart checkout experience is available.





The major payment schemes are now expected to publish their SRC Program implementation description and specifications, based on EMVCo Secure Remote Commerce framework Specifications. EMV Secure Remote Commerce implementations are rolling out in the US, and there are plans for further rollouts around the rest of the world.

#### Click to Pay is much more than a button

## WHEN IT COMES TO PAYING ONLINE, SIMPLER IS BETTER

This secure and interoperable specification has the potential to simplify the user experience by giving the user a consistent and frictionless checkout journey. It will minimize the number of times the user enters their payment data thanks to a consistent identification of the user and their device.

By reducing the repetitive manual Primary Account Number (PAN) and shipping address entries, SRC will eliminate checkout friction to improve conversions, resulting in increased sales on both mobile and desktop.

## NEW USE CASES AND INTEGRATION

SRC could potentially create an opportunity for schemes and affiliated issuers to see their cards used for new payment use cases since payment data is not stored on devices or on a case-by-case basis by merchants.

New trends show payments moving into social media through the insertion of buy buttons into messaging apps (such as Apple Pay Cash in iMessage). These buttons make paying someone as easy as sending a message. While some say that Big Techs and messaging apps are beating the banks, the card industry will most likely be part of this revolution by providing acceptance rails, EMV assets, and security.

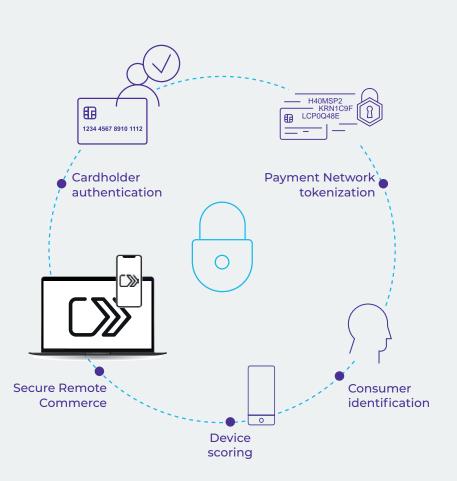
By registering their cards in the checkout button, issuers and schemes could participate in the overall payments conducted via these messaging apps (for example in-app transactions for peer-to-peer payments). 30% of online shoppers say they are likely to make a purchase from a social media network like Facebook, Pinterest, Instagram, Twitter or Snapchat<sup>11</sup>. This is significant.

The EMV SRC Specifications framework could also enable online payments on a multitude of channels. For example, merchant applications could enable customers to make an SRC payment in-person, effectively bringing eCommerce in-store.

 $<sup>^{\</sup>mbox{\tiny 11}}$  Forbes, Are We Entering The Area Of Social Shopping?, 2018



#### SECURITY EVERYWHERE



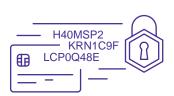
The SRC initiative is also a solution to issues of inconsistent payment processes and vulnerable data stored online.

The framework increases trust in the transaction data available between participants by facilitating consumer identification, cardholder authentication and device scoring.

SRC is compatible with other EMV standards such as EMV Payment Network Tokenization, which replaces payment card data with tokens, allowing for dynamic data in the flow. SRC is also compatible with EMV 3-D Secure 2.0, which can be provided by a variety of SRC participants to improve the protection and use of payment data.

#### Where do tokenization and identity fit in?

#### TOKENIZATION, THE FOUNDATION FOR MORE SECURE PAYMENTS



Tokenization is the process by which the original card number or Primary Account Number (PAN) is replaced with a non-sensitive value called a «token». The binding link between the PAN and the associated payment token is securely stored in a token vault. Once the token is generated, it can be provisioned onto a device, a third-party cloud, or stay in the vault of the Token Service Provider

The EMVCo Specification mentions that tokenization can be used as part of the SRC Program. Payment network tokenization is already implemented and used by payment schemes worldwide mainly for proximity payment. Tokenization would bring dynamic data (dynamic cryptogram generation) within the SRC payment flows for even more security. SRC and payment network tokenization will be inextricable.

#### TOWARDS A CONVERGENCE BETWEEN PAYMENT AND IDENTITY

A frictionless and smooth online checkout experience as described in the EMV® SRC Specification is enabled by binding a payment card to a consumer identity when consumers grant permission for their device to be remembered. It associates a consumer with an eligible card, for a specific device, and for a specific profile managed by the SRC System, including a payment token. The device-binding functionality is required to both bind and unbind a profile and a token to a specific device.

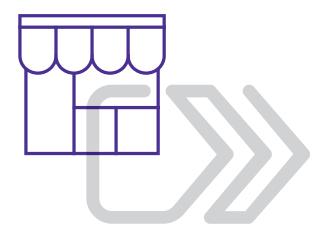
To retrieve and share the payment data (tokenized card data) the SRC System needs to embed consumer identity attributes in the stored profiles. To meet the promise of a frictionless and secure online payment option, the SRC Programs will need to identify the responsibilities and flows to perform device scoring, ID proofing, and cardholder authentication during the different SRC events (enrollment, checkout initialization, profile updates, etc.).





## EMV SRC roles and stakeholders

#### **EMV SRC participants and functional roles**



EMVCo defines the following roles and functional responsibilities within the EMV® SRC Specification, but does not assign function to a specific existing or new entity within the card-based payment ecosystem.

#### **SRC PROGRAM**

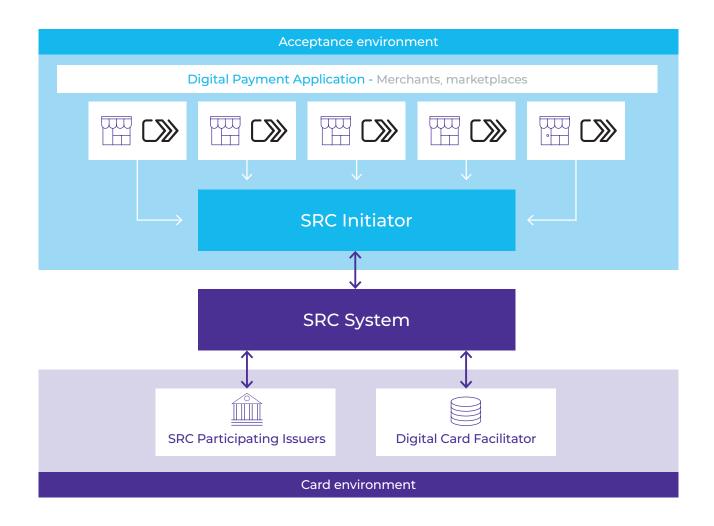
#### **SRC SYSTEM**

## DIGITAL PAYMENT APPLICATION (DPA)

The SRC Program is responsible to engage with the relying parties within a given SRC System (such as payment service providers, merchants, issuers).

The SRC System is the core of the SRC framework and is in charge of orchestrating all integrations between participants by managing the technical aspects of the implemented SRC Program. It is also in charge of creating and maintaining the user profile with the associate Personally Identifiable Information (PII) and payment token. All the stakeholders are registered to the SRC System: the consumers, the network-branded cards, the devices, the merchants' apps, the SRC Initiators, the issuers, the potential Digital Card Facilitators...

The Digital Payment Application is the trigger for the SRC experience since it initiates the checkout flow. It is an embedded payment application on the merchant native application or website enabling and facilitating the SRC consumer experience during the checkout process.



#### **SRC INITIATOR (SRCI)**

## SRC PARTICIPATING ISSUERS (SRCPI)

## DIGITAL CARD FACILITATOR (DCF)

The SRC Initiator is in charge of aggregating merchants and is integrated with the SRC system(s). The SRCI should provide an SDK to be integrated by merchants from either the merchant's native app or website. The SRCI has an important role to play by enabling the new user onboarding, retrieving the profile from the SRC System (and potentially from the DCF), redirecting the payload to the SRC System, and more.

The SRC Participating Issuers are the card-issuing banks. The most important role that card issuers play is to enable cardholders for SRC payments by enrolling their cards into the available SRC Systems. Note that there is nothing to prevent an issuer from enrolling the same card in different SRC Systems if it is a cobadged card for example (i.e. a card that can access multiple networks for transactions). The enrollment process requires that issuers define parameters on the SRC System such as the list of eligible BIN (Bank Identification Number) ranges for this program and their associated Token Service Providers, the card art to be displayed to the consumer during the checkout, the preferences regarding the level and type of authentication needed (3DSecure, Knowledge-Based Questions, etc.), and more.

The Digital Card Facilitator is the entity that provides a consumer with access to one or more digital cards, billing, and shipping addresses to facilitate the checkout experience. It is up to the SRC Program to define and implement the DCF roles and use cases. For example, it is not mandatory to use the DCF to enroll a user, store the cards and PII, and share it with the SRCI. Payment networks, SRC Initiators or issuers could play this role based on the SRC Program implementation.

## Participating stakeholders and associated considerations





#### **CARDHOLDERS**

#### **PAYMENT NETWORKS**

It is one of the most interesting paradoxes in online shopping: consumers want to pay with as few steps as possible, but they also want businesses to keep their data secure. Consumer adoption will come from the level of perceived usefulness, ease of use, a consistent experience across channels, merchant acceptance and sense of trust.

Let us not forget that **consumers** want to have choice. There is no "one payment method fits all" for a unique individual. The SRC button will never replace all the existing payment options.

We believe that there will be **different approaches** based on the profile, digital readiness and maturity, and roadmap of payment schemes around the world.

Major payment schemes such as Visa, Mastercard, American Express or Discover are more likely to propose their own SRC Program and be equipped with their own SRC System. However, it may not be the case for all the payment schemes.

Domestic schemes or schemes not wishing to propose their SRC Program may rely on other SRC Programs and SRC Systems proposed by other entities. For example, SRC could enable domestic schemes that are not ready for digital transformation to enter the digital world through eCommerce, and then build their roadmap with the local issuers for other use cases such as proximity payments.

Whatever strategy each scheme adopts, they will all have to focus on the **education of merchants and cardholders**, as they do for EMV migration or contactless implementations.

Identity is crucial in every payment experience. Payment schemes are well positioned to merge tokenization and identity into payments. Schemes have already built ubiquitous payment frameworks using tokenization, and they are already deeply involved in the evolution of authentication methods. By combining identity and tokenization, payment schemes can **unlock new use cases and the consumer journey**.





#### **MERCHANTS**

Getting consumers on board means getting merchants on board first. **Merchants are key** in the process of achieving mainstream acceptance of this new checkout method.

Checkout and payment events are the most important part of the customer journey for a merchant. Merchants want to deliver the best customer experience across all commerce channels **securely and seamlessly**. SRC gives merchants the **tools** for their digital experiences, but the payment ecosystem should not forget to include them in the development of these common experiences. Merchants should be a **partner in product design**.

EMV SRC also facilitates payment integration methods. Instead of integrating multiple buy buttons or wallets, merchants simply have to integrate a single SRC button and be onboarded to the SRC System(s) available. However, as merchants with multiple existing options will not suddenly «deactivate» their buttons, SRC integration could be seen as yet another button cluttering the checkout screen.

Different strategies based on merchants' size and previous investments will be observed. Some large online merchants who have already invested in smoother and secure checkout flows may want to adopt SRC. Other large merchants, having invested heavily in their payment flow optimization or in order to be PCI-DSS compliant, may hesitate to adopt this checkout option. Smaller merchants will benefit from SRC first because their payment service provider will make it available. Therefore, merchants won't need a security solution, given that with SRC there is no need to retain customer data unless so desired.

Another aspect of this new checkout adoption and implementation by merchants is related to the order of display of the cards and the **rewarding capabilities**. Consumers want more rewards and are willing to switch cards to get them. Whether plastic or digital, being at the top of the wallet matters both for issuers and payment networks. By listing cards enrolled in SRC Systems and by potentially enabling too many different actors to be DCF, the question about the order of display remains.



### PAYMENT SERVICE PROVIDERS (PSPs)

Acquirers, processors and PSPs will play their usual roles within the card-based payment flows. In addition, they are the **best positioned** to play the functional role of SRCI. They would provide the best unified enrollment and payment experience given their role as **front-line technology providers** to the merchants. They are already integrated with merchants, driving user experience at the merchant's website and app level and would be the integration point to the SRC System(s).



#### **ISSUING BANKS**

As the issuers of the cards to be enrolled, the issuing banks are definitely playing the role of the SRCPI. It is clear that issuers have full control over their cards which are the foundation of SRC transactions.

By enabling their cards for SRC transactions, issuers will increase their chances of having their card used on top of the wallet and will also see a drop in card-not-present fraud.

## Transforming the customer journey

It is not yet clear how the customer journey will be streamlined once SRC is implemented, as many parameters are still unsolved and may differ from one implementation to the next. There will be different flows, depending on if the customer's card is registered for SRC and if the SRCI/merchant remembers the customer and the device. It will also depend on the user journey selected by the SRCI (notifications...), the number of DCFs involved, and more.

Below are some possibilities of the user experience and the flows between SRC stakeholders (DCF is not considered here). These user journeys and flows are subject to change, since some steps could be performed differently or skipped altogether.

## An unknown consumer initiates a Click to Pay checkout and enrolls a card

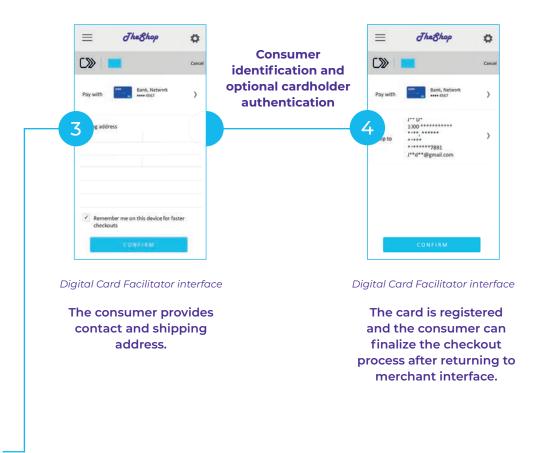


Merchant/Digital Payment Application interface

First, the consumer selects items and then decides to start the checkout process by choosing the Click to Pay option.

SRC Initiator interface

The consumer is prompted to enroll a card by first entering the card information.

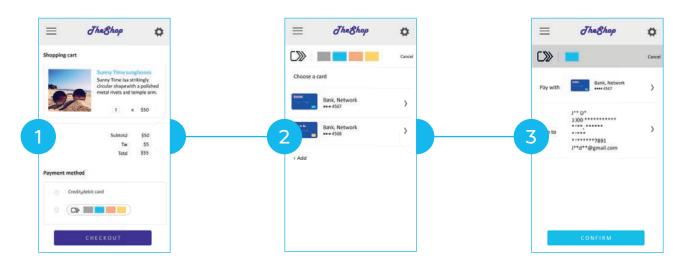




Note that it could be possible for the consumer to enroll their card after choosing to go through the normal one-time checkout journey.

Also note that prior to any purchase, customers could enroll their cards through a dedicated interface proposed by their banks. The card issuer could also enroll the card by default within the available SRC System and then request consent from the consumer to activate this service. It would request the issuer to send the PAN and consumer PII to the SRC System. Therefore, it would raise the question of the binding event with the phone during first checkout.

## A consumer initiates a transaction and pays with an enrolled card and device



Merchant/Digital Payment Application interface

The consumer selects items and decides to start the checkout process by choosing the Click to Pay option.

SRC Initiator interface

Available registered cards are displayed and the consumer selects the preferred card for this checkout.

Digital Card Facilitator interface

Card, contact and shipping information are displayed and the consumer confirms the information before finalizing the payment with the merchant.



## Takeaways and conclusion

## THE FUTURE OF ONLINE CHECKOUT

This secure and interoperable specification has the potential to ease the online checkout experience, increase transaction security, and simplify integration for merchants and commerce platforms. With the EMV® SRC Specification, EMVCo is giving the industry the tools to unlock eCommerce opportunities and build different experiences and new use cases.

IDEMIA firmly believes that SRC as a framework could disrupt the digital commerce experience as we know it today.

## A FUTURE PAVED WITH UNKNOWNS

Will SRC be widely adopted? The question remains, as SRC relies on many interdependent variables to reach ecosystem-wide adoption. In addition, as SRC is a voluntary process, it will take some time for it to impact the entire eCommerce ecosystem. It will also depend on the consumer. Getting consumers to choose to click on the SRC icon instead of the familiar card network logo or third-party buy button will take investment in customer education and promotion by the card networks and the partnering issuers.

## CONVERGENCE BETWEEN IDENTITY AND TOKENIZED PAYMENT

There is another major and central element with SRC: Identity. Consistent identification of the user and their device enables this new payment experience. The convergence of payment technology with users' digital identities will completely disrupt the way individuals all over the world pay and transact every day. Identity has always played a role in the world of payments. This is even more valid in the eCommerce space, where trust needs to be established in a highly fragmented ecosystem. This is only possible when identity and tokenization converge.

Who is ideally positioned to take advantage of the opportunity that EMV SRC brings to the worlds of identity and payments? What are the new opportunities created by the convergence of identity and tokenization beyond just payments? EMV SRC is a first step, stay tuned, more to come...

## We are Digital

idemia.com/we-are-digital