

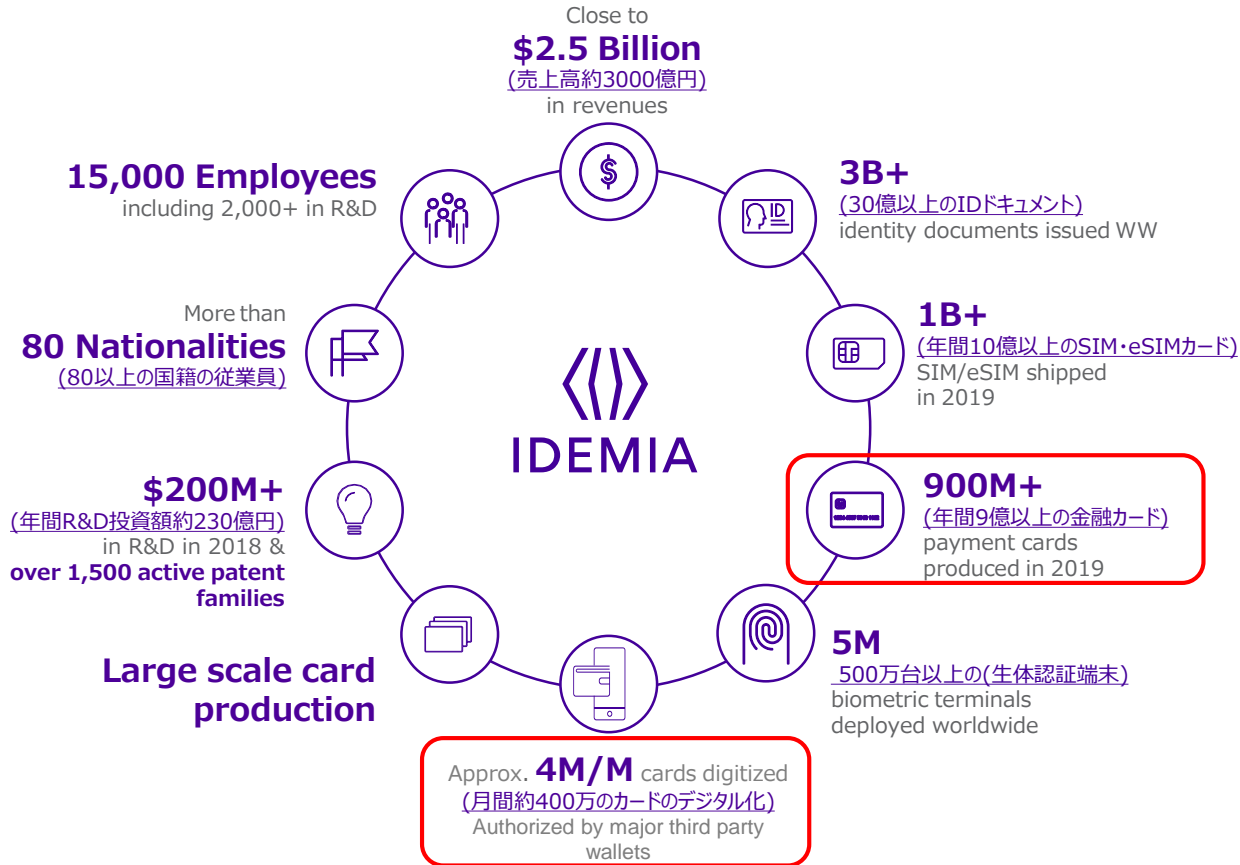
# Security in the Digital Era



8/20/2020



# IDEMIA in one Page



## Well positioned in our markets

**#1** in police biometric systems  
(警察当局生体認証システム)

Trusted by **1,800** financial institutions  
(金融機関)

**#1** in civil identity solutions  
(IDソリューション)

Trusted by **500+** mobile operators  
(通信キャリア)

**#1** in US driver's license issuance  
(米国運転免許証)



# Some stats on Payment

### Global eCom payment methods



### Global POS payment methods



## 2019 - 2023

### eCommerce Payment

- Digital/Mobile wallet ↑ (10+%)

### POS Payment

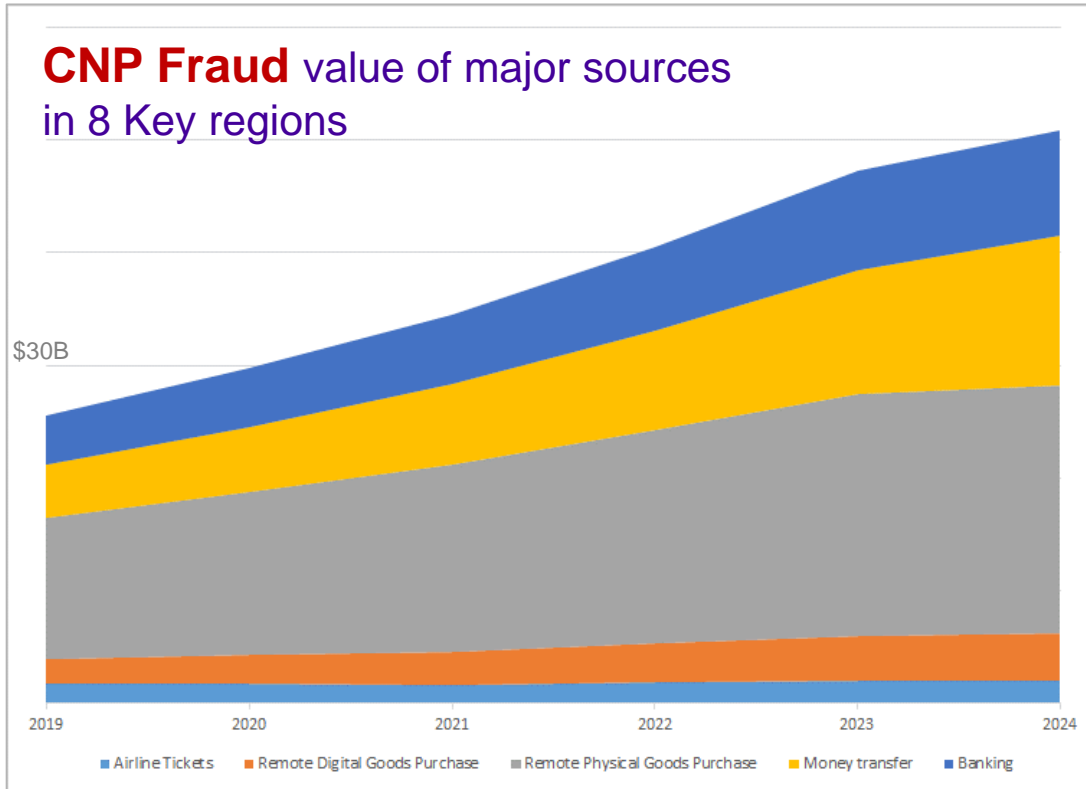
- Cash ↓ (12%)
- Credit, Debit, Digital/Mobile wallet ↑

	2019	2023*		2019	2023*
Digital/Mobile Wallet	41.8%	52.2%	Cash	30.2%	18.7%
Credit Card	24.2%	18.8%	Debit Card	24.3%	26.3%
Debit Card	10.6%	8.8%	Digital/Mobile Wallet	21.5%	29.6%
Bank Transfer	9.0%	9.3%	Credit Card	20.9%	22.3%
Charge & Deferred Debit Card	5.0%	3.0%	Charge Card	2.1%	2.1%
Cash on Delivery	4.5%	2.7%	Pre-Paid Card	1.0%	1.2%
Buy Now Pay Later	1.6%	2.8%			
PostPay	1.3%	0.9%			
Pre-Paid Card	1.0%	0.5%			
PrePay	0.6%	0.3%			
Other	0.6%	0.3%			

\*Forecasted



## Raise of eCommerce, rise of...



### 2019 - 2024

- \$26B (2019) doubles to **\$51B (2024)**
- Large portion from **eCom** physical goods purchase (65%: 2019, 56%: 2024)
- **Money transfer** fast growing in emerging markets, and **Fintech** fraud vulnerable tech infra.



## Card Not Present (CNP)

CNP詐欺とは、取引時にイーコマースなどのカードが提示されない状態での取引で行われる詐欺を指します。

対面取引が難しくなると、詐欺はオンラインやモバイルなどのCNPチャネルへ移行していきます。

チップで保護されたクレジットやデビットカードが普及するにつれCNP詐欺が急増すると推測されています。



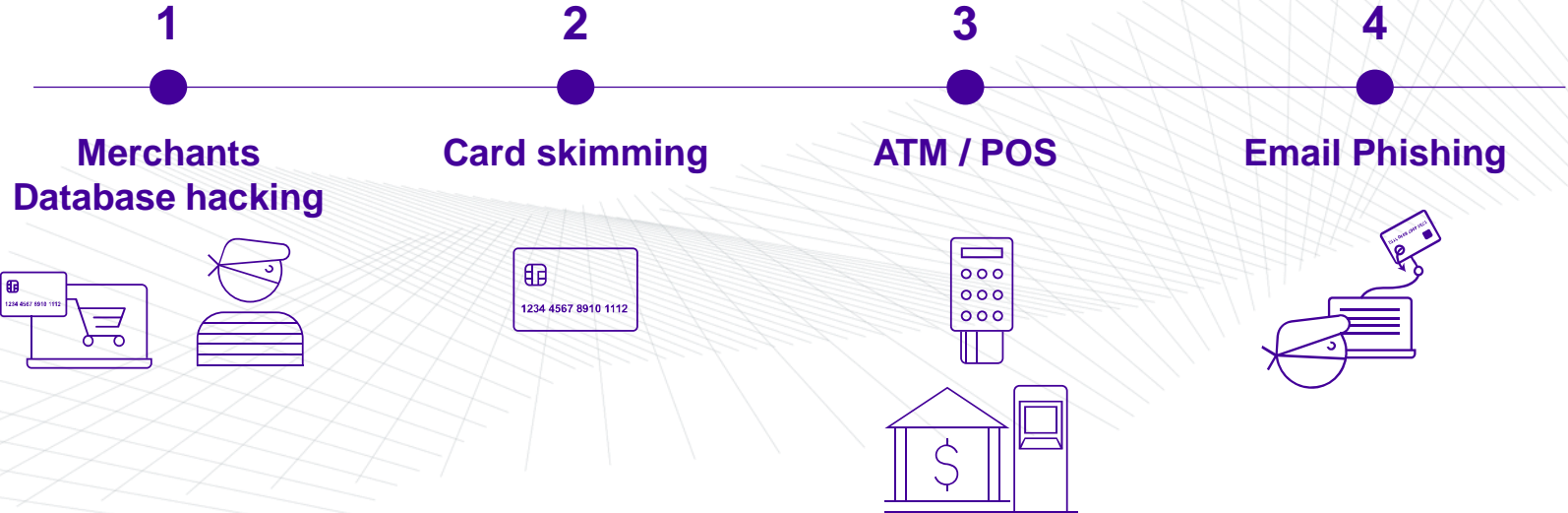
## CNP Fraud

- **90%** fraud represents **CNP** in some countries, and rapid increase in other regions
- **80%** of total CNP fraud losses is from **non domestic** transaction
- Some analysts forecasts **\$130 billion (約14兆円)** of loss from CNP fraud by 2024
- **153%** increase of credit card data floatation on the dark web
- Fraud on **small amounts** which is out of radar
- Trying to blending in the **standard behaviors** of card holders
- **45%** of users **concerned** about fraud when shopping online





# Where does the CNP fraud come from?





# Recent incidents

## 他人のカード情報使い衣服 15万円購入 中国人の男再逮捕

窃盗

事件事故 神奈川新聞 2020年06月08日 22:00

県警国際捜査課と鶴見署は8日、窃盗の疑いで、中国籍で東京都江戸川区に住む専門学校2年の男（21）＝詐欺容疑で逮捕＝を再逮捕した。

再逮捕容疑は、昨年1月10日と15日、他人名義のクレジットカードの情報を使用し、通販サイトで衣服など17点（計約15万円相当）を購入して盗んだ、としている。黙秘しているという。

同課によると、男の携帯電話には約100人の他人名義のカード情報や、コミュニケーションアプリ「デンセントQQ」を利用して何者かとカード情報の売買交渉をするやり取りが残っていたという。県警は、カード情報の売人などについても捜査している。

2020/06/08 Japan

トップ 速報 社会 政治 国際 経済 スポーツ エンタメ ライフ

## 他人のカード情報で航空券購入、友人と旅行繰り返す 高2少年逮捕

2020.6.23 12:19 | 社会 | 事件・経産



不正に入手したクレジットカード情報を使い航空券を購入したとして、警視庁組織犯罪対策特別捜査隊は電子計算機使用詐欺の疑いで、横浜市の私立高校2年の少年（16）＝中国籍＝を逮捕した。少年は「80枚くらいカード情報を盗んだ」と供述しており、被害総額は1千万円以上になるとみられるという。

捜査隊によると、少年はアルバイト先のスーパーで客が使用したクレジットカード情報を売上票などから入手。昨年11月から今年2月にかけて約80

枚分の航空券を予約し、友人らとの旅行で使っていた。テーマパークやホテルなどでもカード情報を使い、不正利用していたとみられる。

逮捕容疑は1月17日、航空券予約サイトで不正に入手したクレジットカード情報を使い、航空券4枚分の計約14万6千円を決済したとしている。カード会社から連絡を受けた航空会社が警視庁に相談していた。

2020/06/23 Japan

TRENDING SC AWARDS EUROPE 2020

## £16 million lost to fraud during lo

Jun 22, 2020  
NEWS by Andrew McCorkell

Research shows that 16,352 people in the UK fell victim to online shopping fraud, with young people most at risk, posing a threat to trust in e-commerce as 76 percent see shopping online as risky.



Not only do companies need to do more to ensure their online commerce offerings are secure, they must educate their customers to help protect them against being defrauded by tricksters to maintain trust in their online brands.

The UK's national reporting centre for fraud and cybercrime has disclosed new figures which showed £16 million has been lost to e-commerce fraud during the Covid-19 lockdowns.

2020/06/22 UK



A person with short dark hair and glasses is sitting at a desk, looking at a laptop. The background is a bright window with a view of a city. The overall tone is professional and informative.

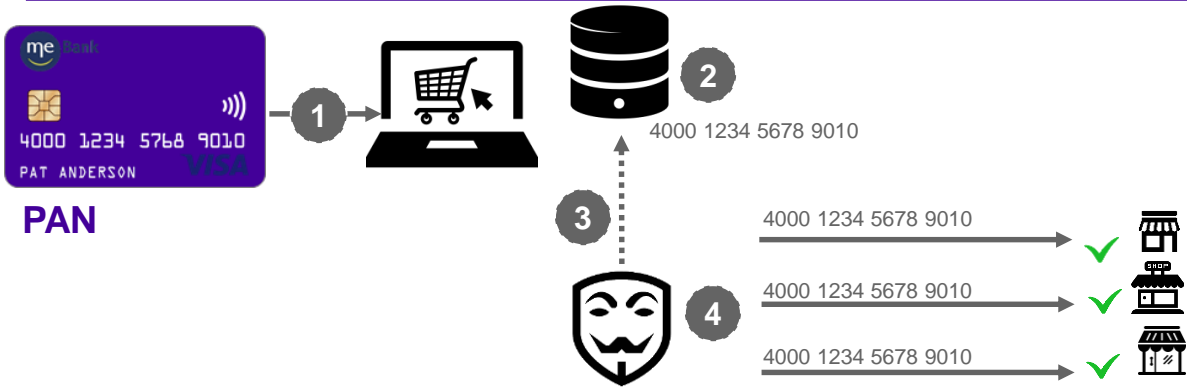
## What is Token?

- カード情報などの機密情報を置き換えた乱数
- 暗号化とは異なり数学的法則が存在しない値の数列でトークンから元の値を復元することは不可能
- 元の値と一対一で対応
- 16桁番号は16桁番号に。
- 発行されたデバイスやマーチャントでしか利用できない。

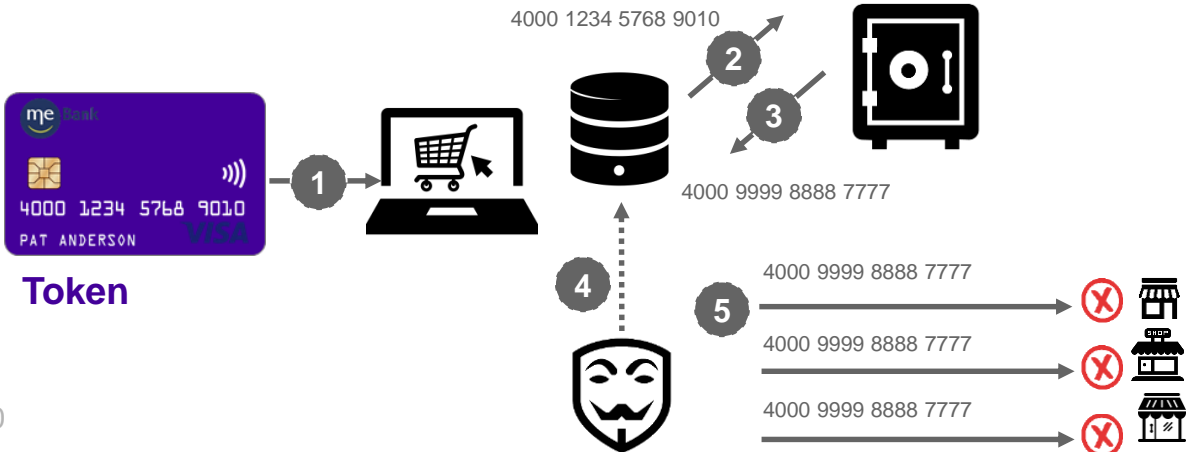
# Tokenization



# PAN vs. Token



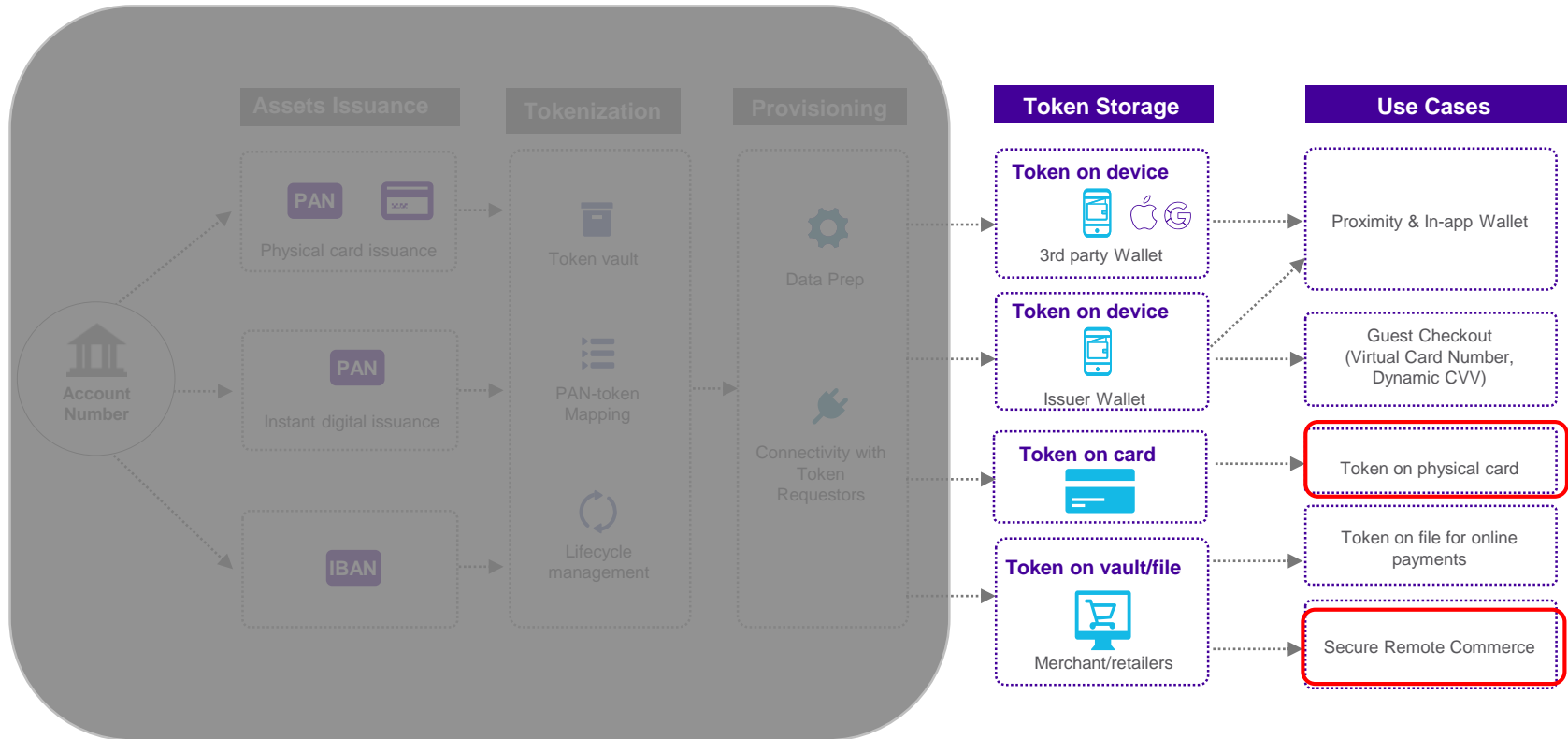
1. Pat Anderson is a frequent customer of www.toys.com. Hence, Pat stores his PAN (4000 1234 5678 9010) with www.toys.com to be able to enjoy 1-click shopping (not having to enter the PAN over and over again every time he shops)
2. www.toys.com stores the PAN in their database
3. A fraudster hacks the database of www.toys.com and extracts Pat's PAN
4. The fraudster can use the PAN virtually anywhere



1. As with PAN
2. www.toys.com passes on the PAN to a Token Service Provider (TSP)
3. The token service provider assigns the token 4000 999 8888 7777 to the PAN. This token only works with www.toys.com
4. A fraudster hacks the database of www.toys.com and extracts Pat's token
5. The fraudster can only use the token with www.toys.com, it will be refused everywhere else

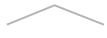


# Tokenization





# SRC deployment



8/20/2020



The screenshot shows the PYMNTS.com website with a green header. The main article is titled "Amex, Discover, Mastercard And Visa Take Click to Pay Global" by PYMNTS, dated July 8, 2020. Below the article is a video player with the title "Four Payment Giants Expand Digital Checkout" and a thumbnail showing logos for American Express, Discover, Mastercard, and Visa. The article text discusses the expansion of the Click to Pay service to global markets and the benefits of digital checkout for consumers and merchants.

**Amex, Discover, Mastercard And Visa Take Click to Pay Global**  
By PYMNTS | July 8, 2020

**Four Payment Giants Expand Digital Checkout**

American Express, Discover, Mastercard and Visa have agreed on the global expansion of touch-free purchases across merchants and platforms.

Click to Pay, the online checkout based on Secure Remote Commerce (SRC), features one-click buying convenience when shoppers are making a purchase on a website, mobile app or any other digital channel with the four giant financial institutions (FIs).

Launched last fall in the U.S., the expansion will now reach Australia, Brazil, Canada, Hong Kong, Ireland, Kuwait, Malaysia, Mexico, New Zealand, Qatar, Saudi Arabia, Singapore, United Arab Emirates and the United Kingdom, with more to come.

The "big four" said the advanced digital checkout solution is similar to checkout in brick-and-mortar stores, where one terminal accepts all card payments. The idea of Click to Pay, the firms said, is to provide consumers with a fast, streamlined experience across digital checkout networks. It is designed to make online checkout simple and secure without the need to enter account numbers and information at checkout, they added.

Since its inception, more than 10,000 merchants have signed on, including Cinnamark, Crate & Barrel, Expedia, Fresh Direct, Jo-Ann Fabric and Craft Stores, Joseph A. Bank, the marketplace division of Rakuten U.S., Saks Fifth Avenue and Shop.com, among others.

For sellers, the checkout option is intended to reduce friction during the process of purchasing goods and services. Merchants can now get access to a single virtual terminal for multiple card brands for a smooth digital checkout experience, the companies said.

"Right now, more than ever, demand for fresh food and grocery delivery is at an all-time high, with many new customers trying FreshDirect for the first time," said **Tammy Berentzen**, chief marketing officer of FreshDirect, the New York City-based online grocer, in a statement. "For these new customers, as well as for our loyal following, Click to Pay offers confidence that their transactions will be simple, efficient and secure."

Last month, **Jess Turner**, executive vice president of products and innovation for Mastercard, and **Radhika Sivanra**, head of digital payments and lending for the CB U.S. Consumer Bank, told PYMNTS that the firms are collaborating to use Click to Pay.

"Click to Pay had been essential even before COVID-19, but what COVID-19 has done is really highlighted a new need for safer and faster ways to pay digitally," Turner said.

**New PYMNTS Study: Subscription Commerce Conversion Index - July 2020**

Staying home 24/7 has consumers turning to subscription services for both entertainment and their day-to-day needs. While that's a great opportunity for providers, it also presents a challenge - 27.4 million consumers are looking to cancel their subscriptions because of friction and cost concerns. In the latest **Subscription Commerce Conversion Index**, PYMNTS reveals the five key features that can help companies keep

**TRENDING RIGHT NOW**

- Walmart Plans More Health Clinics in Atlanta Area
- CardBee Debuts Mobile App for Companies Seeking Capital
- Facebook Enables Live Broadcasts of Group Video Chats
- myPOS Rolls Out Metal Card With New Benefits for Sellers
- Digital Initiatives Help QSRs Survive a Q2 Earnings Fumble
- Deep One: How The COVID-19 Pandemic is Shifting Latin America's Open Banking Plans
- Compassion Refunds Princess Cruises To Offer Credits With Bonus, Reimbursements For Cancelled Cruises
- Amazon Looks To Snag 9 Pot Stake in Balance Retail

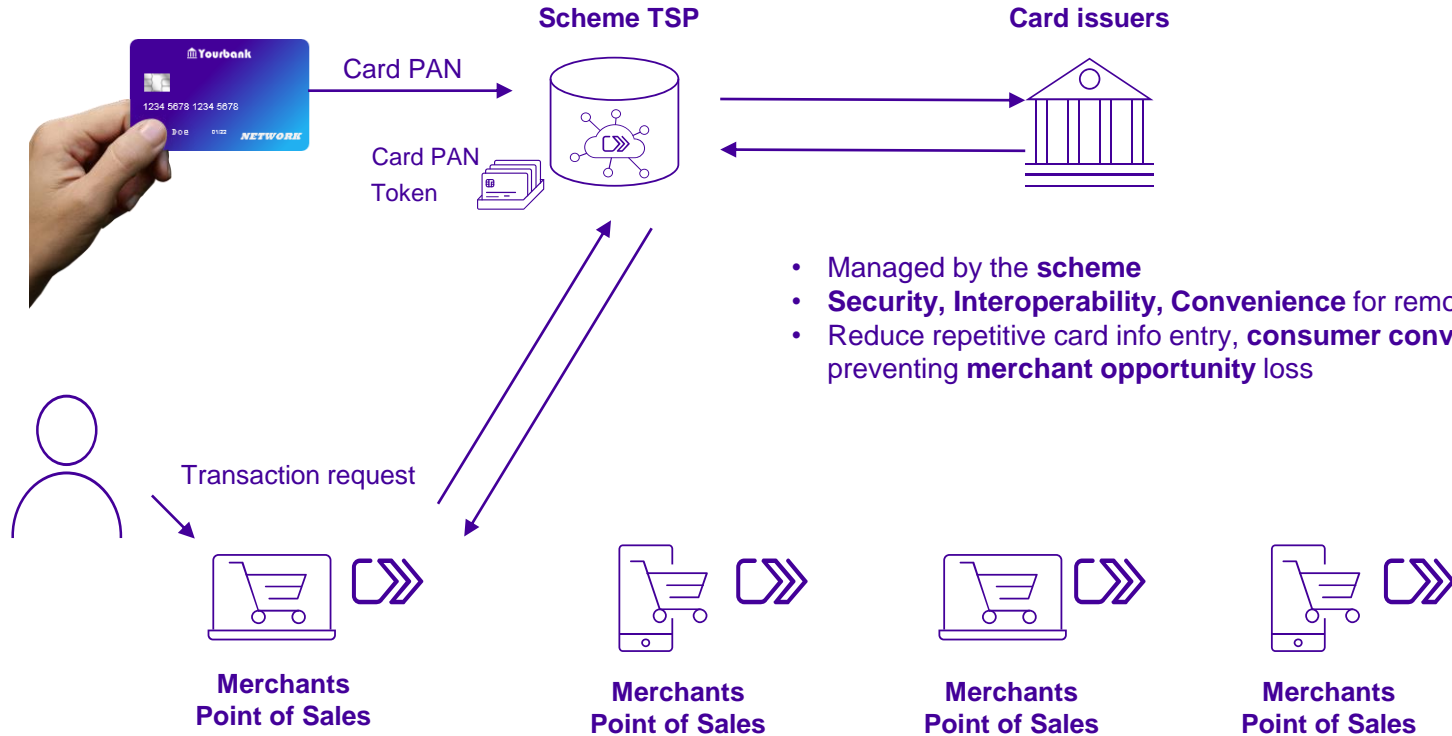
Global expansion of  
**"Click to Pay"**  
by the 4 American brands.

July 8<sup>th</sup> 2020



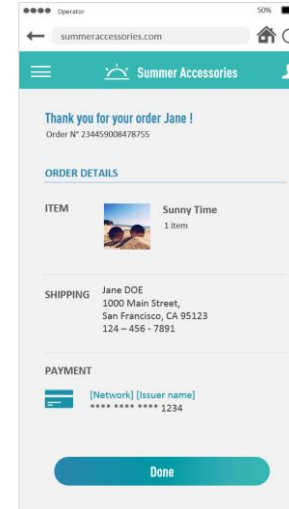
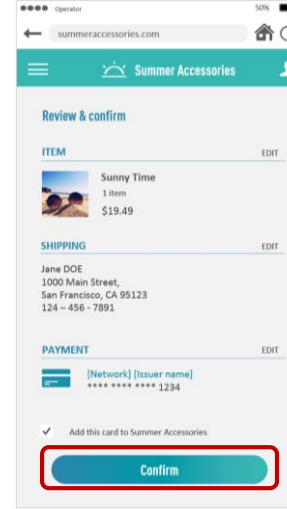
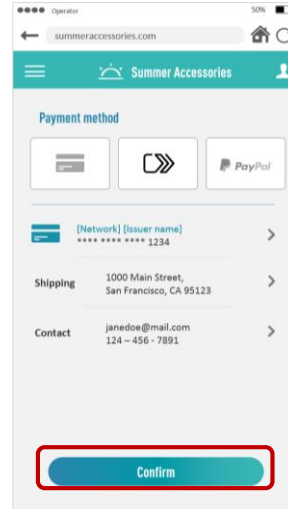
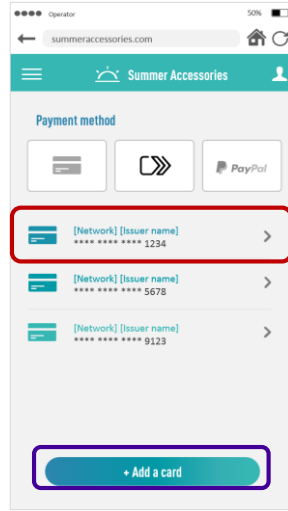
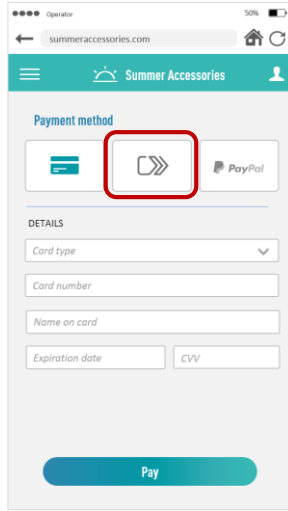
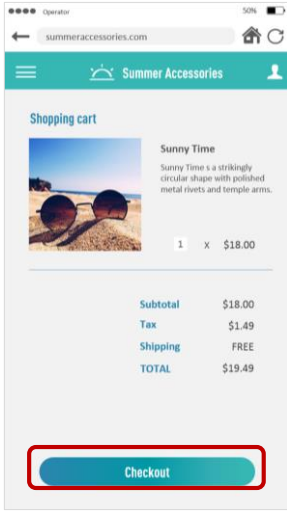


# Secure Remote Commerce (SRC)



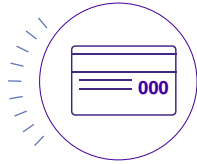


# SRC image screen shots



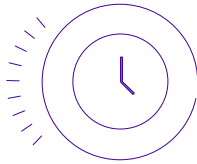


# Motion Code



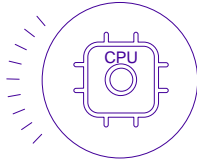
MOTION CODE™  
appears permanently

On mini e-paper screen



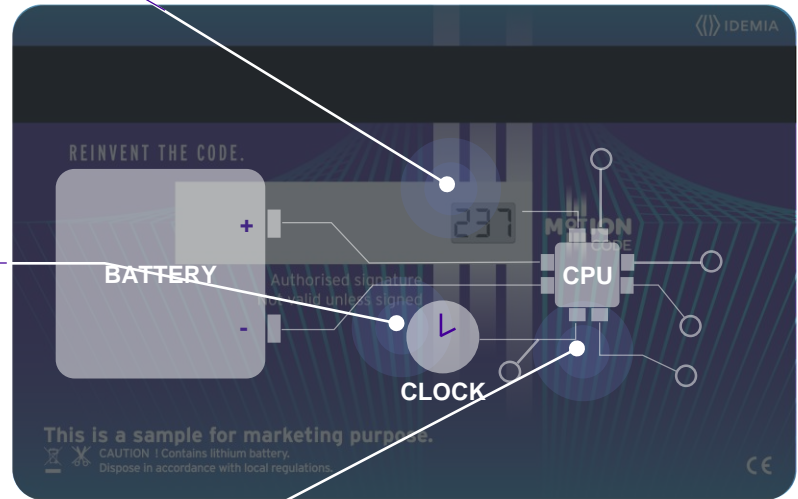
Automatic

« Refresh »



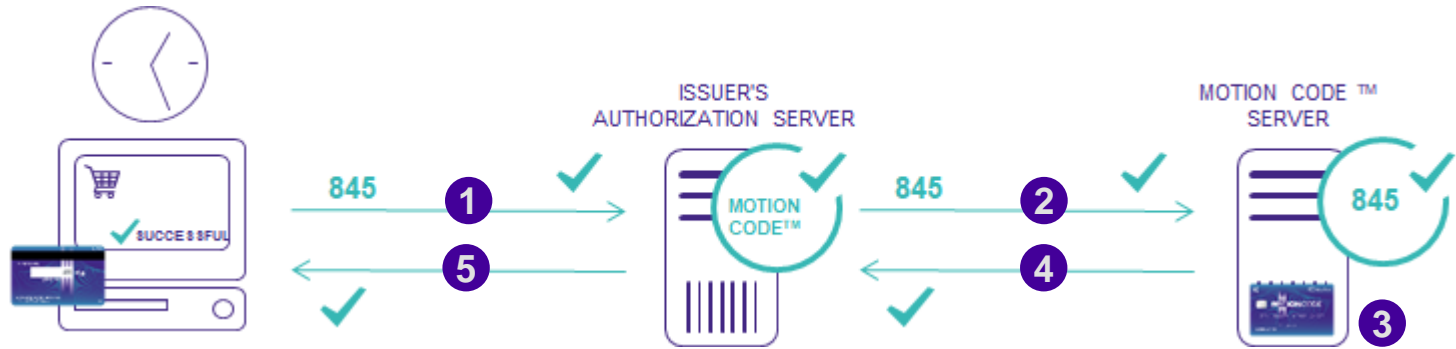
Several electronic  
components

Inside the card to calculate  
Card Security Code\* according to time





# How does it work?



- 1** Card data (PAN, expiry date and MOTION CODE™) sent “normally” via Payment Service Provider up to the issuer’s authorization server, just as a transaction with a “normal” card
- 2** Card is recognized as a MOTION CODE™ one by its PAN or BIN: as a result, **CSC check is routed for validation towards the IDEMIA MOTION CODE™ server**
- 3** The **IDEMIA server compares the MOTION CODE™ submitted** with the one it calculates
- 4** Result (**Valid / Invalid**) is routed back to the issuer’ server
- 5** Transaction is **approved/rejected**





# Motion Code protecting transactions

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8/20/2020



## 4 Magic Figures learnt from Commercial deployment



8/20/2020

5 | 20 | 0 | 1

+5%  
new customer  
acquisition

0  
cases of fraud

+20%  
increase in CNP  
revenue

\$1  
monthly  
fee applied

Where do we go in the future?

**Convenience**

**Security**



