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CSI

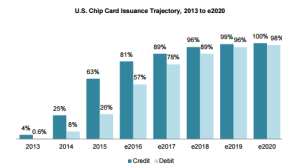
A PATH FORWARD

DYNAMIC DATA

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EMV ROLLOUT

Figure 1: Chip Card Issuance Trajectory



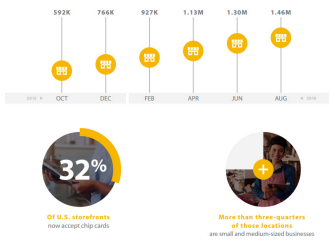
Debit EMV Card Issuance

- 2015 – 25% of US debit cards will be EMV cards
- 2016 – 57% of US debit cards will be EMV cards
- 2017 – 78% of US debit cards will be EMV cards
- 2018 – 89% of US debit cards will be EMV cards
- 2019 – 96% of US debit cards will be EMV cards

EMV ACCEPTANCE

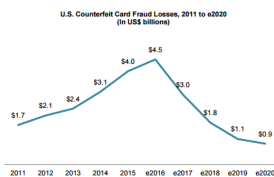
Nearly 1.5M merchants are now accepting chip cards, a 385% increase in the last year.

According to Aite, 84% of non-chip merchants report that they are planning to upgrade to chip or are already in the implementation process.



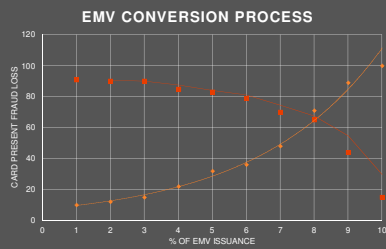
POST-EMV FRAUD TRENDS

Figure 8: U.S. Counterfeit Card Fraud



Source: Aite Group

INCREASING **BENEFIT**



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Simply blocking off one of
the avenues of attacks by
fraudsters isn't enough to
make fraud vanish.

Ross Anderson
Professor of Security Engineering at University of Cambridge



SOLVING FRAUD

"THE FUTURE" (50 years ago)

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BEYOND EMV
THE WALL STREET JOURNAL

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Chip Card Nightmares? Help Is on the Way

Only one, the new EMV cards, are getting better at the register, but mobile payments like Apple Pay are the real answer.

Here's what it's like to buy something at a store these days:

1. Swipe card.
2. Get scolded by cashier to use the chip reader.
3. Insert chip and cancel all foreseeable plans.
4. Wait.
5. Wait some more.
6. Celebrate once you hear that **Expedia "Secure card" sound**.

Picking Your Payment Poison
Chipping away at our in-person payment options

Method	Average time	Security
The Swipe	5 seconds	Weak: It always transmits the same info. If intercepted, it can easily be used again until the card itself is cancelled.
The Chip	13 seconds	Strong: EMV technology transmits encrypted one-time-use data. It's "virtually impossible" to counterfeit, says Visa.
The Phone	6 seconds	Stronger: Apple, Android and Samsung Pay also use EMV authentication, but a fingerprint sensor or PIN confirms the card's owner.

Source: WSJ-reporting (processing times); the companies THE WALL STREET JOURNAL.

MOVING FORWARD

CURRENTLY TOKENIZED

Apple Pay, Samsung pay, Microsoft Wallet, MasterPass, pay

TRANSITIONING NOW

VISA Checkout, PayPal, NETFLIX

Token PAN

Funding / Card PAN

NOTHING STATIC

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89206032161353150760
42991627100678658139
21768097580266432813
57585533115160214822
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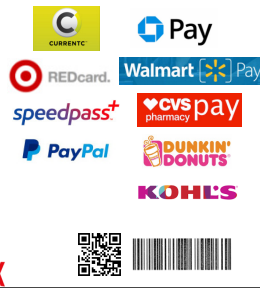
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NOT ALL CREATED EQUAL

Network Centric



Merchant Centric



SECURING ECOMMERCE WITH TOKENS

NETFLIX

Payments

MasterCard Ending in 1234 5678 9010 1112

Use the Credit Card on file to pay or send the payment request on Tap Payments to the cardholder to pay

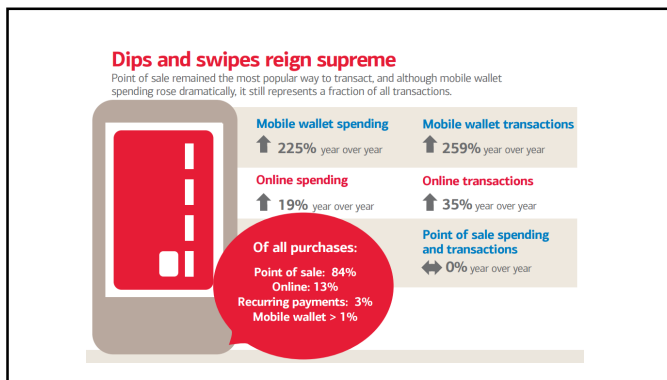
Android Pay hits the web via Chrome

What Microsoft Wallet should will be

MasterPass

VISA Checkout

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THE FUTURE OF CARD PAYMENTS

PUSH PROVISIONING

Push credentials into the customers digital wallet at the time the account is created

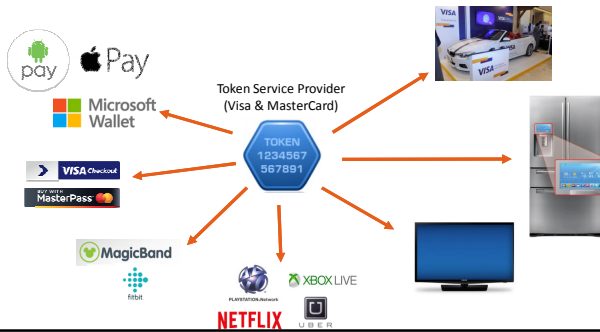


End of 2017

Every new accounts walks out of the branch with their card added to their mobile wallet*

*Subject to network support and availability

TOKENIZATION ENABLES THE INTERNET OF THINGS



DRIVE THRU



[illegible]

A man wearing a brown jacket, a grey t-shirt, and a grey baseball cap is walking from left to right. He is holding a smartphone in his right hand. In the background, there is a large orange sign with the text "JUST WALK OUT SHOPPING" and the Amazon logo below it. The sign is mounted on a wall. The scene appears to be inside a store or a shopping center.

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THANK YOU!

QUESTIONS?

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