

KEYNOTE

Online Fraud Prevention for Credit, Debit, & Prepaid Cards

The Problem

\$38,000,000,000

Card Fraud losses to Card Issuers, Acquirers, and Merchants in 2018

The Online Problem in the USA

\$6,400,000,000

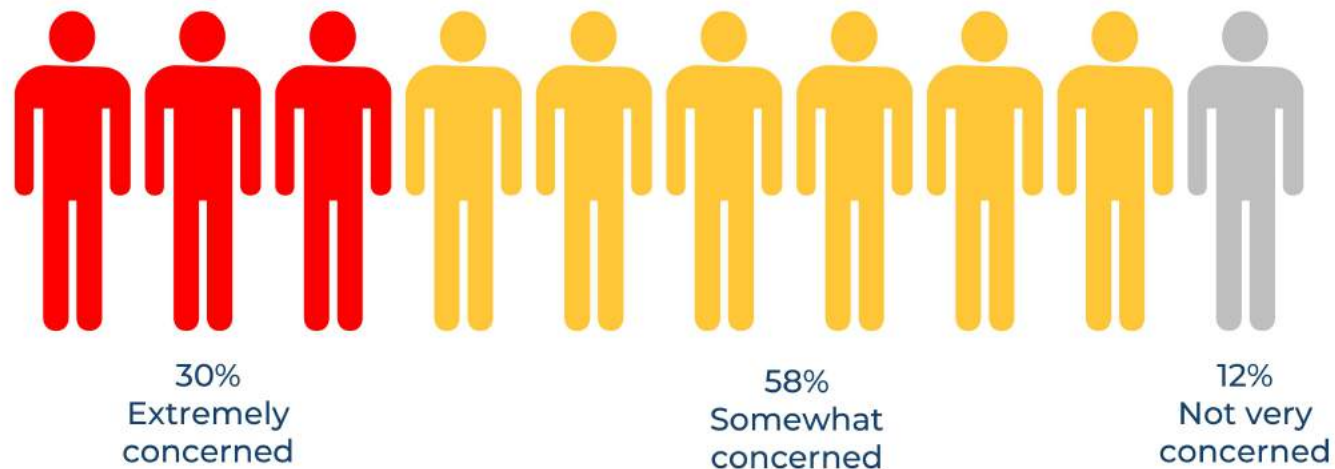
United States Card Not Present (CNP) Fraud Losses in 2018

“Card-Not-Present (CNP) fraud... accounts for 54% of all fraud losses even though CNP purchases account for less than 15% of all sales billed to cards.”*

*The Nilson Report January 2020

88% of consumers are concerned their data will be stolen

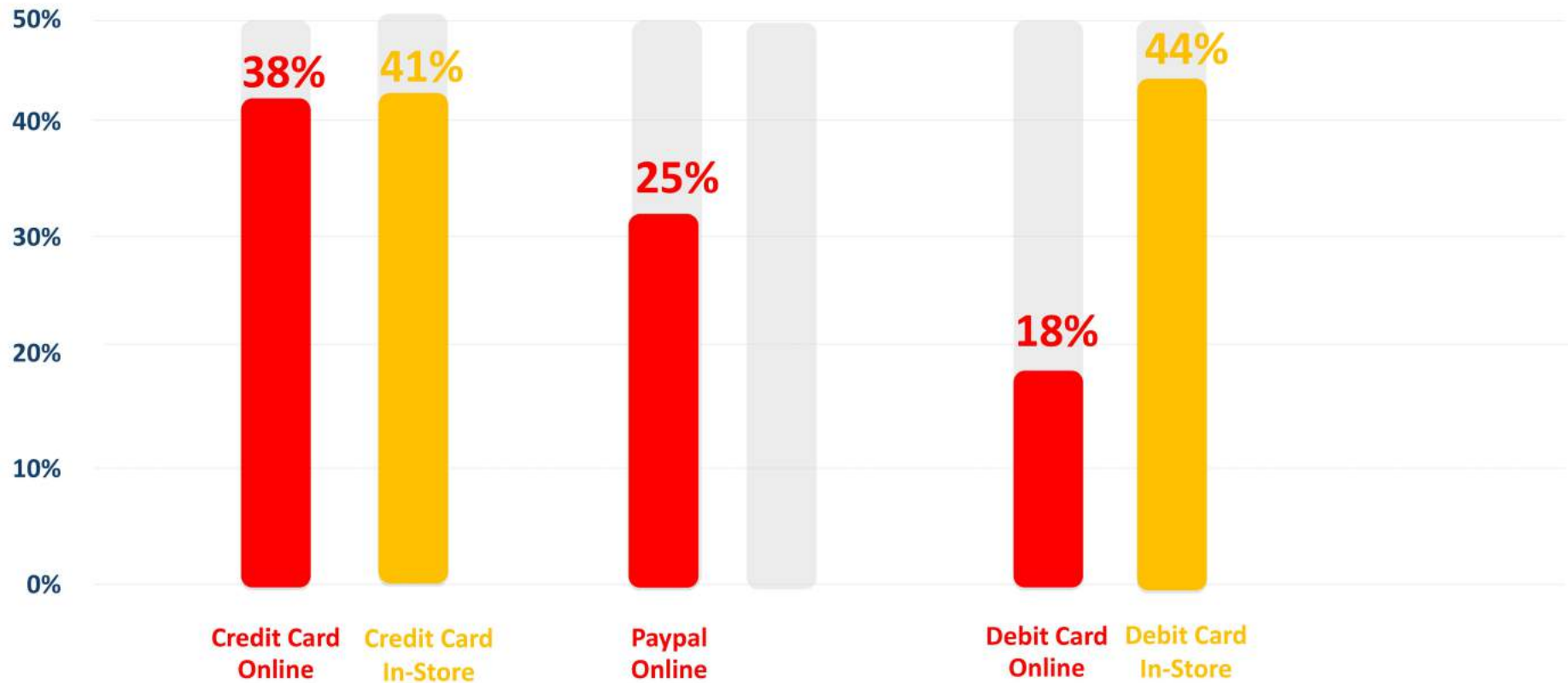
Concerned Your Account/Data Will be Stolen in the Future?



*Source: 2018 TSYS Consumer Payment Study

Debit Card Consumers are Seeking Safer Ways to Shop Online

Card Usage Online Vs Non-Cash In-Store



2018 TSYS Consumer Payment Study

Consumers Want More Control With Their Phone



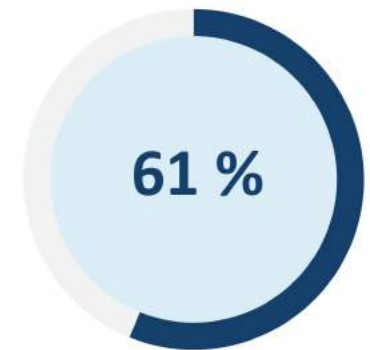
Use Phone App To
Stop Transactions



Use Phone App to
View Transactions



Use Phone to Prevent
Unauthorized Transactions



Alerts Sent to Phone
For Each Transaction

*2018 TSYS Consumer Payment Study

Consumers Love to Shop with Their Phone

How Often Do you Shop for Goods or Services and Pay for Them From Each of The Following Devices?

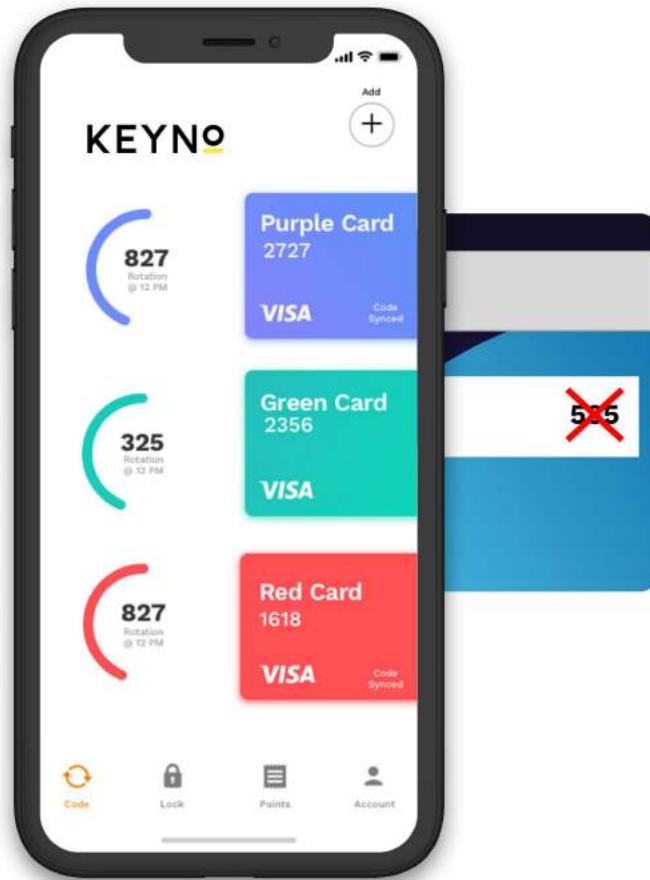


**Pay with Phone
(Browser + App)**



Pay with Computer

1500 US Customers, JP Morgan, October 2016



Keyno provides a dynamic CVV2 on your phone that replaces the static CVV2 on your card

- Easy for Visa Card Issuers to implement in 6-8 Weeks starting in 2Q 2020
- Validates seamlessly on VisaNet, Worldwide
- Works on already issued cards
- Individual cardholder sign up
 - mixed BINs of enrolled & unenrolled cards acceptable
- Available as Keyno's App, a White Label App or as an SDK Plug-in to a Bank's App



Card Verification Values are requested by 87% of online merchants

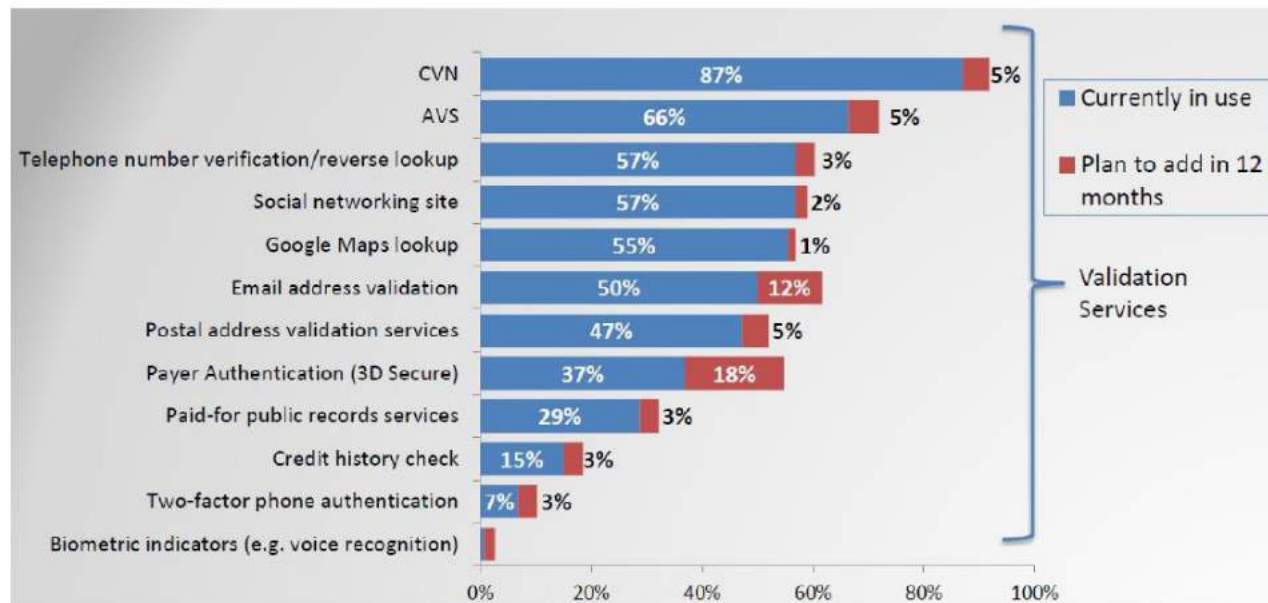


Figure 5. Transaction Validation Services Currently Used and Anticipated to be Used

Dynamic CVV2 is

Easy To Understand



Would Feel Safer Using



Would Likely Use



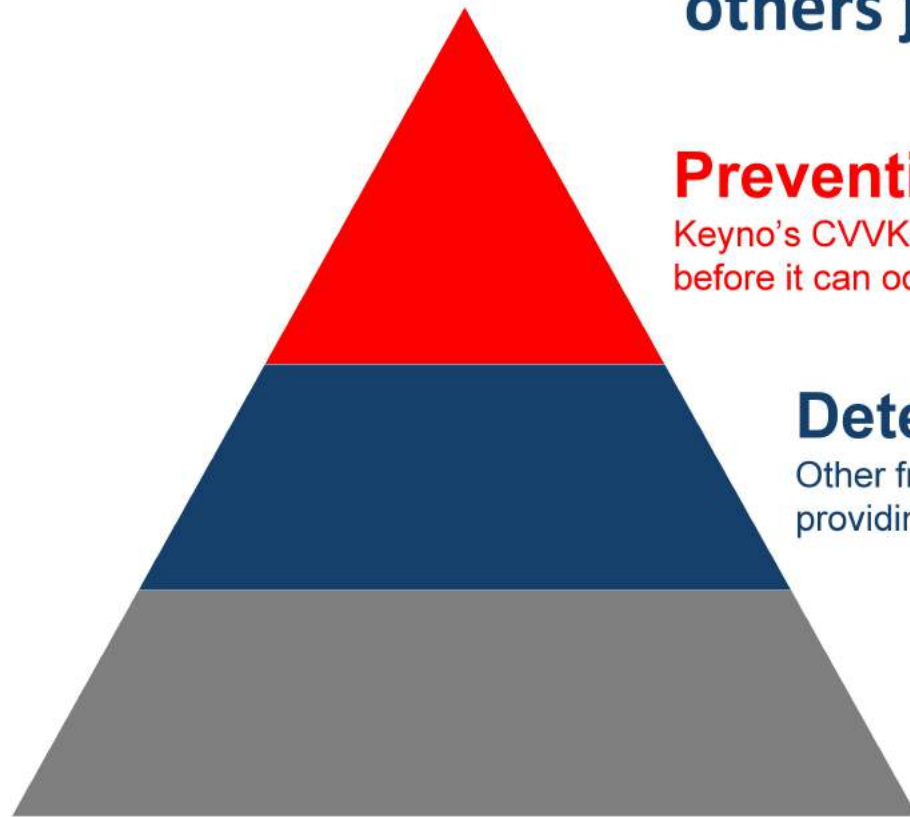
A total of 1,013 online surveys were returned via Qualtrics among a national panel.

Cardholders Want Dynamic Security Codes

4 out of 5 Consumers Prefer a
dCVV2 to a Static CVV2

Source: Forbes "This week in Credit Card News" March 25, 2016.
Survey was of consumers who were familiar with dCVV2

We Prevent Fraud from occurring, others just detect it



Prevention (Issuing Bank)

Keyno's CVVKey blocks fraud
before it can occur

Detection (Merchant & Issuing Bank)

Other fraud products hope to detect fraud by
providing a risk score

Clean-up (3rd Party)

Many fraud products are reactive and clean up
fraud's aftermath

PSD2 – Europe

Authentication based on the use of two or more elements categorized as **knowledge** (something only the user knows), **possession** (something only the user possesses) and **inherence** (something the user is)

CVV2 as a Possession Element

#28 dynamic card security codes (where the code is not printed on the card and changes regularly) may provide evidence of possession in line with Article 7 of the RTS.

CVV2 as a Knowledge Element

#33..... in the event, for instance, that the **card security code was not printed on the card** and was sent separately to the PSU [Payment Service User], in the same way as a PSP [Payment Service Providers] may send a PIN for a new card, it could constitute a knowledge element.

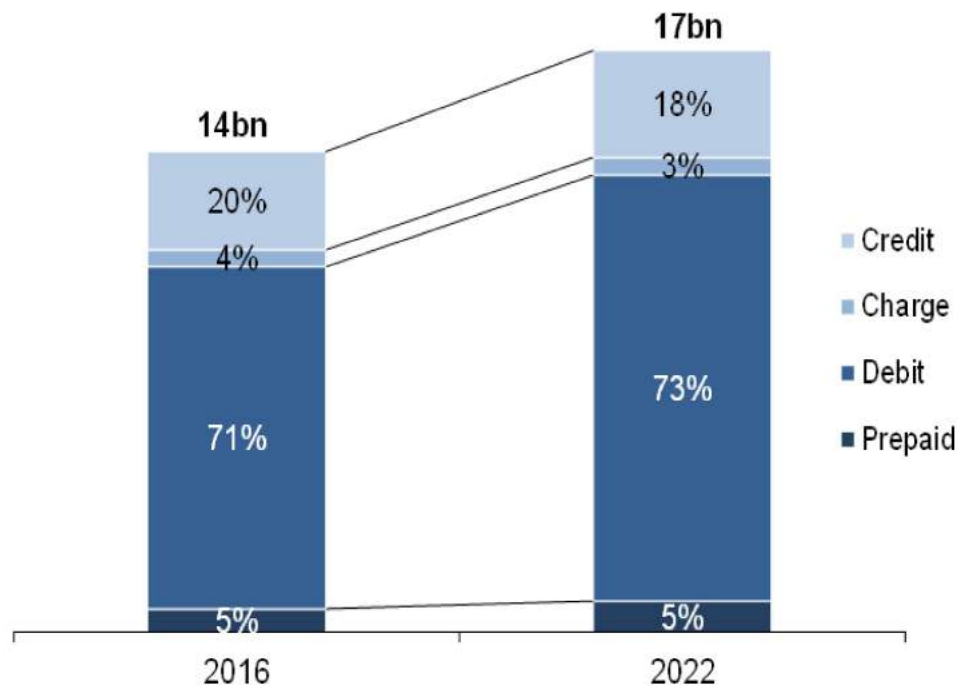
2FA combination that would meet PSD2

Keyno App with Biometric/Password sign-in & Dynamic Binding to Smart Phone

dCVV2 for Possession and a biometric to access the dCVV2 as Inherence

dCVV2 for Possession and a password to access the dCVV2 as Knowledge

Number of Payment Cards Worldwide, by Type, 2016



Source: Global Payment Cards Data and Forecasts to 2022 (RBR)

Market Assessment

Worldwide Market

14 Billion Cards and Growing

US Market

1.5+ Billion Cards and Growing

1.2+ Billion Cards for Mastercard & Visa

Competition

Feature	Keyno	Dynamic Security Code Cards (Motion Code Card)	Fraud Detection Solution (3D Secure)
Protects CNP transaction if the card is lost or stolen	✓		
Works on existing cards in market	✓		✓
Qualifies as a PSD2 Knowledge Element (Allowing for simpler online purchases in Europe)	✓		
Supports multiple cards	✓		✓
Supports any card type	✓	✓	✓
Card Issuer implimented vs. merchant controlled	✓	✓	
Minimal Card Issuer integration required	✓	✓	
Preventive vs detective	✓	✓	
Reduces false positive declined transactions	✓	✓	

Visa Security Conferences

Visa US Security Conference

Aug 19-21, 2019 San Francisco

Visa CEMEA Security Conference

Oct 30-31, 2019 Barcelona Spain

Visa LAC Security Conference

March 11-12, 2020 Miami Florida

Visa AP Security Conference

May 19-21, 2020 Tokyo Japan



Keyno Team



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Keyno

Thank You.