

MACHA 2024

Are We in a Check Fraud Crisis?

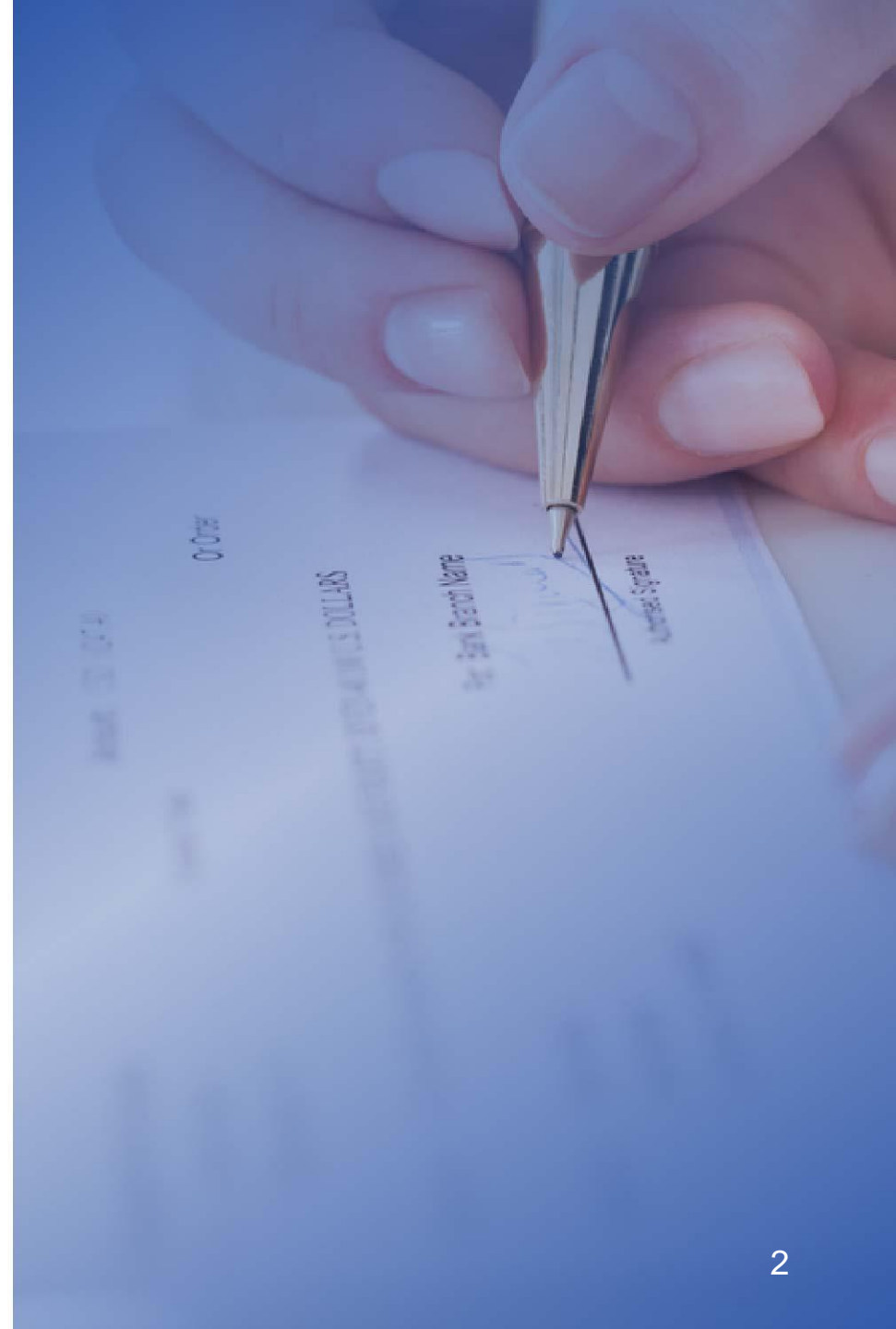
David Rathke

Sales Engineer | FIS



OrboGraph: The Company

- Industry Leader of Innovative Technologies for nearly 30 years
 - Fraud Detection
 - Check Processing Automation
 - Payment Validation
 - Compliance
- Reaching 4,000+ institution clients
- Thompson Street Capital Partners portfolio of companies



FIS: The Company

- Item processing leader: over 40 years
- Distributed Capture Channels
 - Branch/Teller
 - RDC
 - Mobile
 - ImageATM
 - Lockbox
- Over 1,000 banks use image capture and Item Processing
- Process over 12 million items daily and more than 3 billion annually

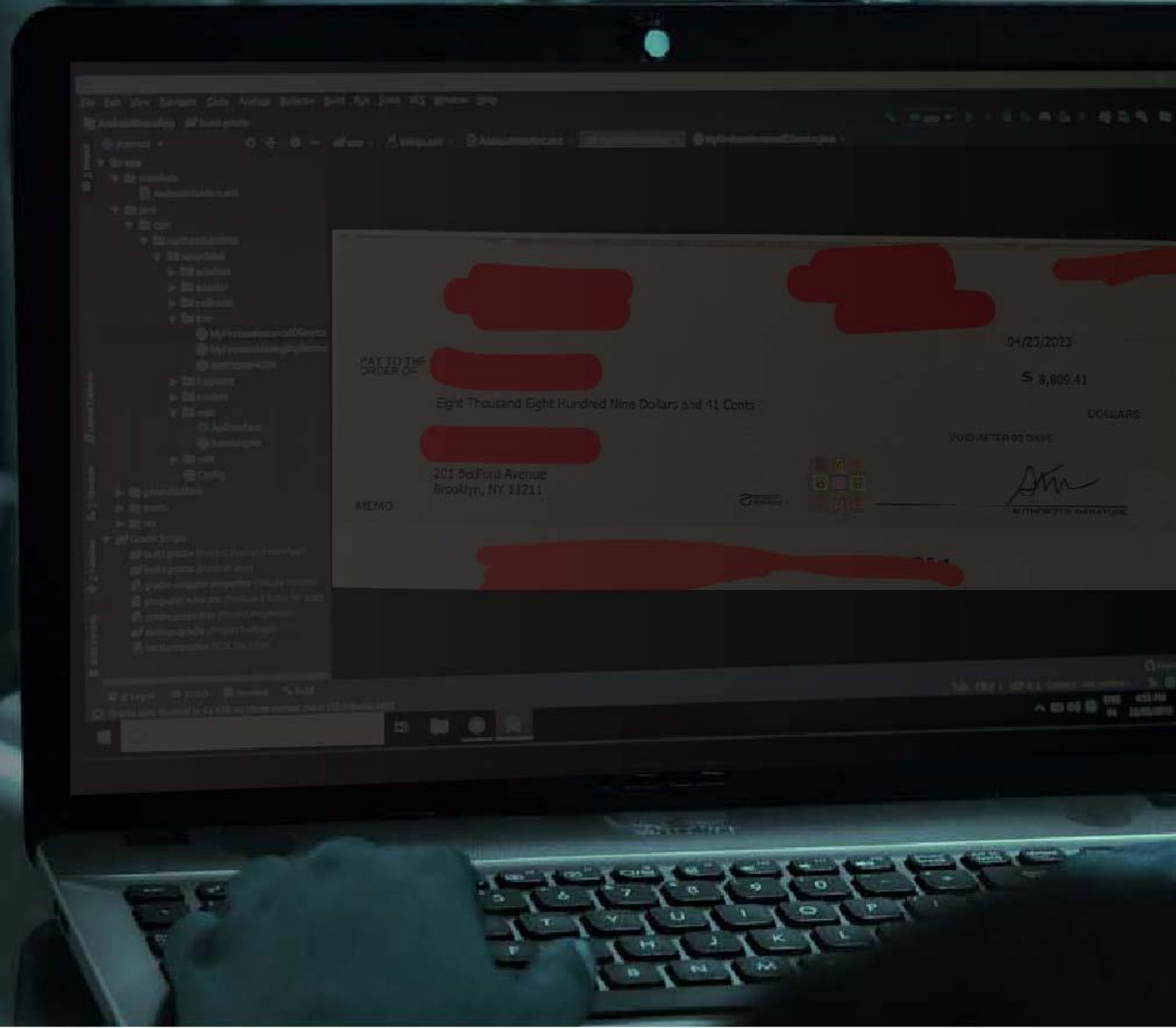


Agenda

- Overview: Check Fraud Trends
- Check Fraud Exposure
- Check Fraud: Use Case Examples
- Modernizing Check Fraud Detection
- Questions



Overview: Check Fraud Trends



Poll:

Has your bank or credit union seen a significant rise in check fraud **attempts** over the past 2 years?

Poll:

Check fraud **losses**?

Check fraud leads to big Q3 charge at Regions Financial

By [Jordan Stutts](#) October 23, 2023, 5:12 p.m. EDT 2 Min Read

Executives at the Birmingham, Alabama-based company warned that operational losses related to check fraud totaled \$135 million between April and September, and will continue to weigh on the bank's future earnings.

Cases of check fraud escalate dramatically, with Americans warned not to mail checks if possible



Five Star Bank has accused Rochester business owner Katherine Mott of perpetrating a check-kiting scheme that defrauded the bank of \$18.9 million. Check kiting is a ploy that's been around almost as long as banks.

Check fraud in 2024

Why has check fraud become such a big topic?

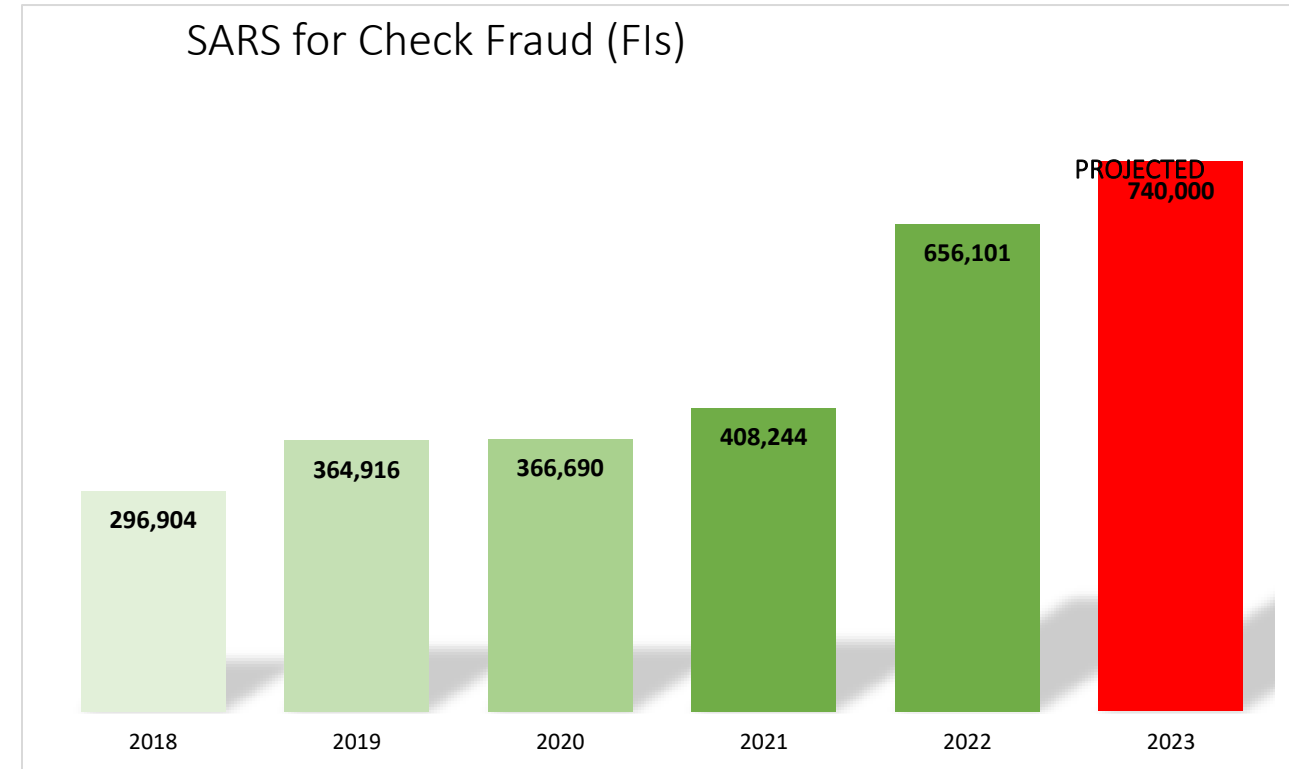
1. Check volumes remain high

- 11B in 2022, #2 among payment channels

2. Average value is higher than ever before

- \$2430 in 2023, up from \$845 in 2000

3. Check fraud has grown dramatically in 5 years



Source: Financial Crimes Enforcement Network with projected 2023 volume



**Check Volumes
3-5%**



**Average check
value
tripled since
2000**

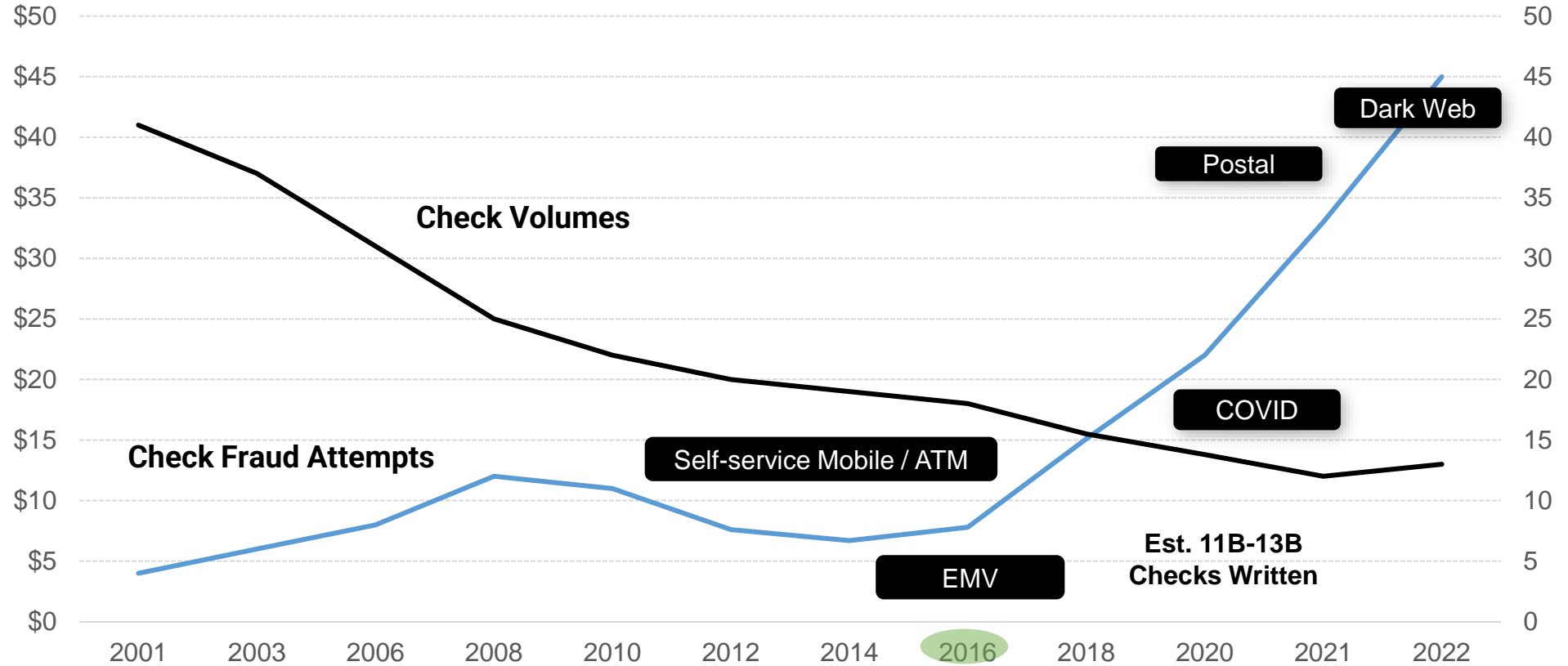


**Check fraud
attempts has
grown 10-fold
since 2000**

Check Fraud Attempts vs. Volume*

Check Fraud Attempts \$B

Check Volume B

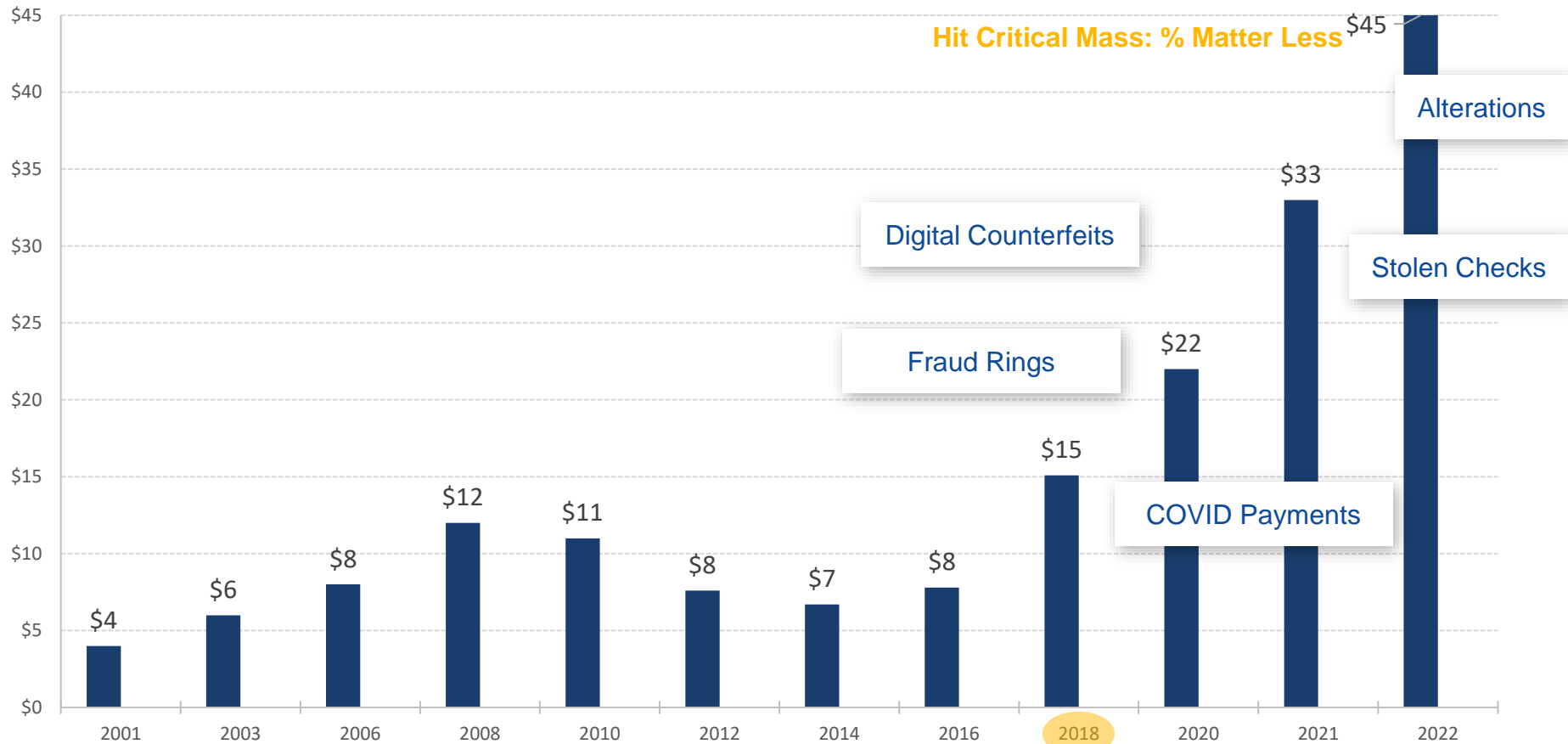


Avg. Check: \$1,908 (2018)
 Avg. Check: \$2,287 (2021)

*Chart created by OrboGraph interpretation based on sources: Multiple news publications, check volume research, 3rd party sources, internal resources, customer surveys, market feedback.

*Estimated Check Fraud Attempts

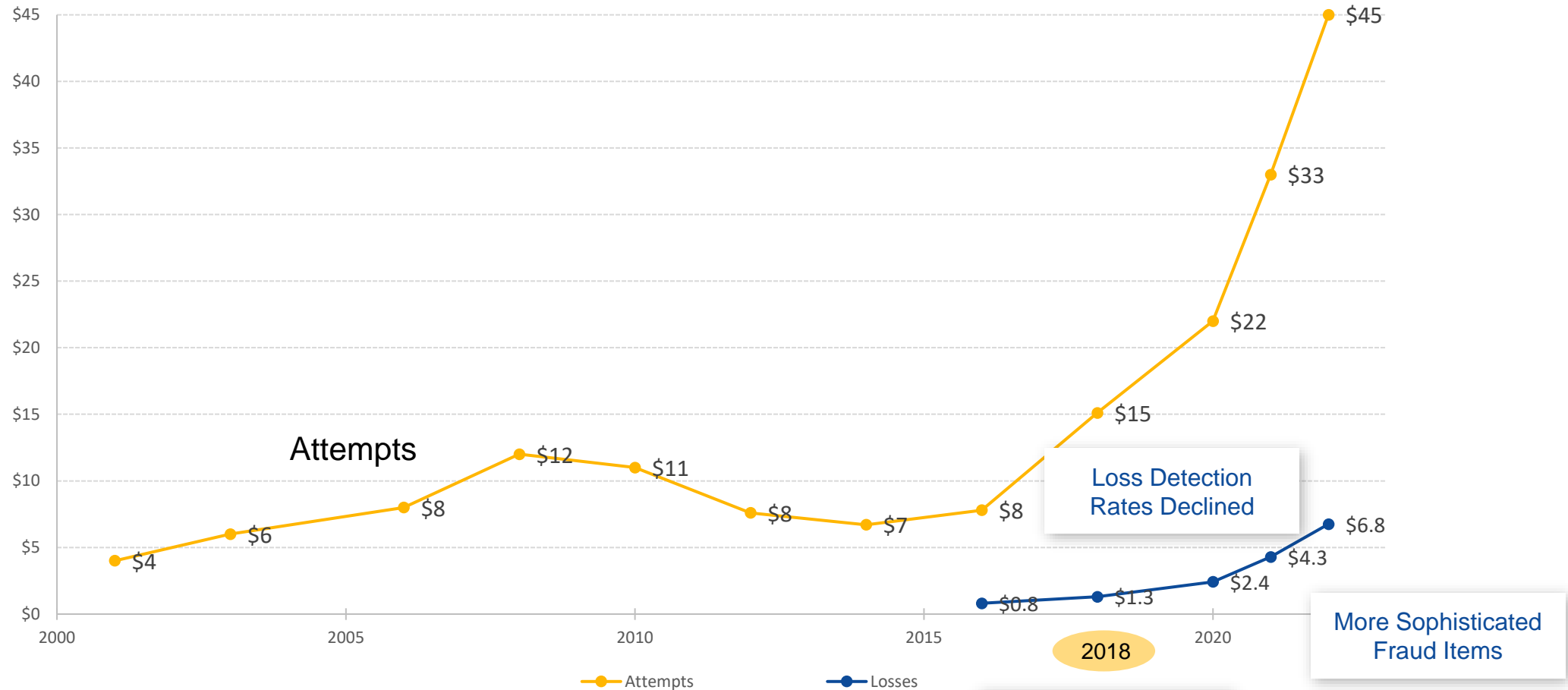
\$ Fraud Attempts Billions



*Chart created by OrboGraph interpretation based on sources: Multiple news publications, check volume research, 3rd party sources, internal resources, customer surveys, market feedback.

*Estimated Check Fraud Losses

\$ Fraud Attempts/Losses Billions



*Chart created by OrboGraph interpretation based on sources: Multiple news publications, check volume research, 3rd party sources, internal resources, customer surveys, market feedback.

The Dynamics of Check Fraud in 2024



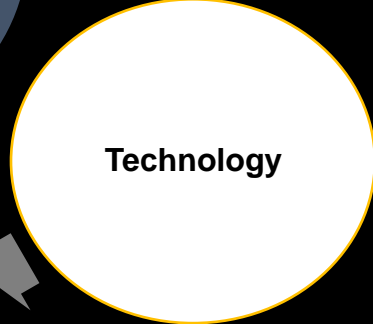
- Organized Crime**
- Fraud as a small business
- Sometimes drug related
- Insider fraud
- Identity fraud



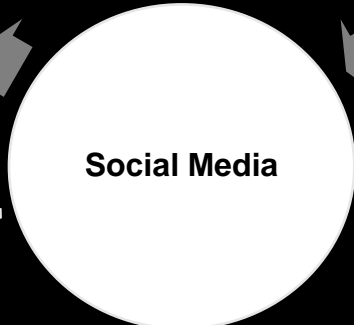
- Self-service Deposits**
- Rules of negotiability?
- Alterations / Counterfeits (no paper for review)
- Duplicate presentment



- Online Accounts**
- Faster funds availability policies
- Driven by market pressure



- Technology**
- Counterfeiting using tools simply purchased from any office supply
- Desktop publishing for check creation
- AI technology enabling fakes



- Social Media**
- 'eBay for fraud'
- Communication
- Distribution

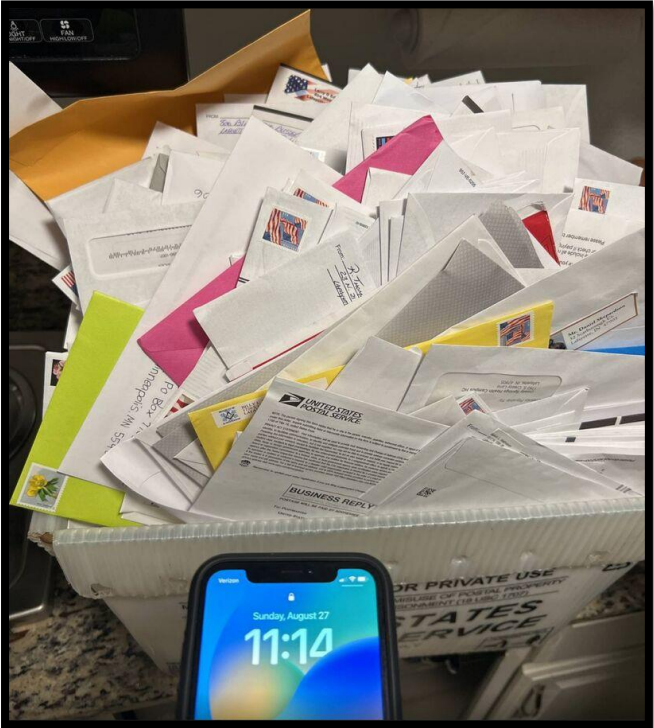


- Mail Fraud**
- Attacks on postal workers
- Stolen / replicated master keys
- Insider fraud

Poll:

Are you familiar with the mailbox and postal carrier crime at USPS?

The Cliche: What's Old is New Again



The Dark Web: The Check Fraud Marketplace

The Dark Web Check Fraud Ecosystem



**Step 1:
Mail Theft**

The background image shows a close-up of a United States Postal Service mailbox with the eagle logo and the text "UNITED STATES POSTAL SERVICE".



**Step 2:
Black Market Sales**

The background image shows a person's hands holding a laptop displaying a dark web marketplace interface with various listings.

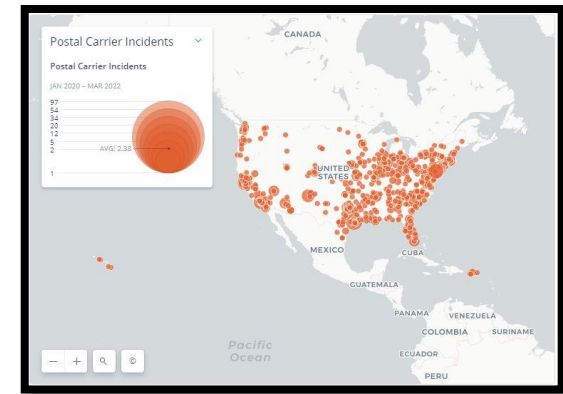


**Step 3:
Check Fraud**

The background image shows a person's hands holding a check, illustrating the final step of the fraud process.

A “Few” Data Points

- According to USPS:
 - 25,000 incidents of theft from collection boxes first half of 2023
 - Compared to 38,500 in 2022
 - 412 letter carriers were robbed while on duty between Oct. 1, 2021 and Sept. 30, 2022
 - 305 letter carriers were robbed while on duty between Oct. 1, 2022 to March 31, 2023
 - Number of cases of robbery or assault against USPS employees increased every year from 2014 to 2023
- In October of 2020 there were about 115 stolen checks per week available for sale on the dark web. Today, that number has exploded to about 3,000 stolen checks per week available for sale on the dark web
- BlueVoyant research shows an over 500% increase in “check fraud IM groups” from January 2022 to February 2023, with each group posting an average of over 6K stolen checks per month
- Telegram and other encrypted messaging apps used to promote services including check washing, tutorials on how to physically and digitally alter stolen checks, and mule/walker services



Average Number of Checks Shared on an IM Group

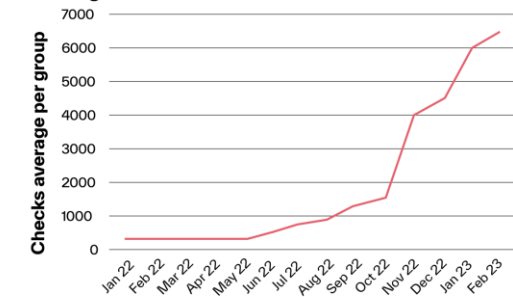


Figure 2: Average amount of fraudulent checks posted monthly in a single group

Dedicated Check Fraud IM Channels Growth

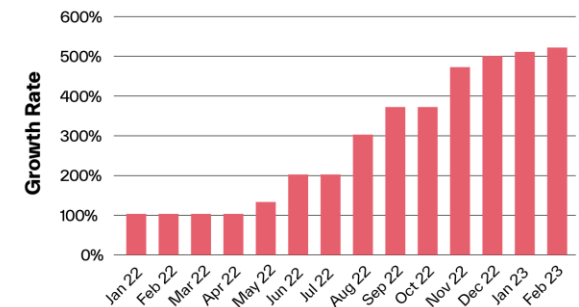



Figure 1: The increasing number of IM groups dedicated to check fraud over 2022

Check Fraud Exposure

 **OrboGraph**
1500 District Avenue
Burlington, MA 01803
(617) 982-0097

Bank of North America 001234
50-1234/1234

August 1, 2023

PAY TO THE ORDER OF Acme Company LTD. & Joe Smith \$ ***958.31

Nine Hundred Fifty Eight Dollars and 31/100***** DOLLARS

Acme Company LTD.
123 Main Street
Yourtown, WI 53207

MEMO INVOICE #6781649, PO# 10528

Michael Person
Authorized Signature

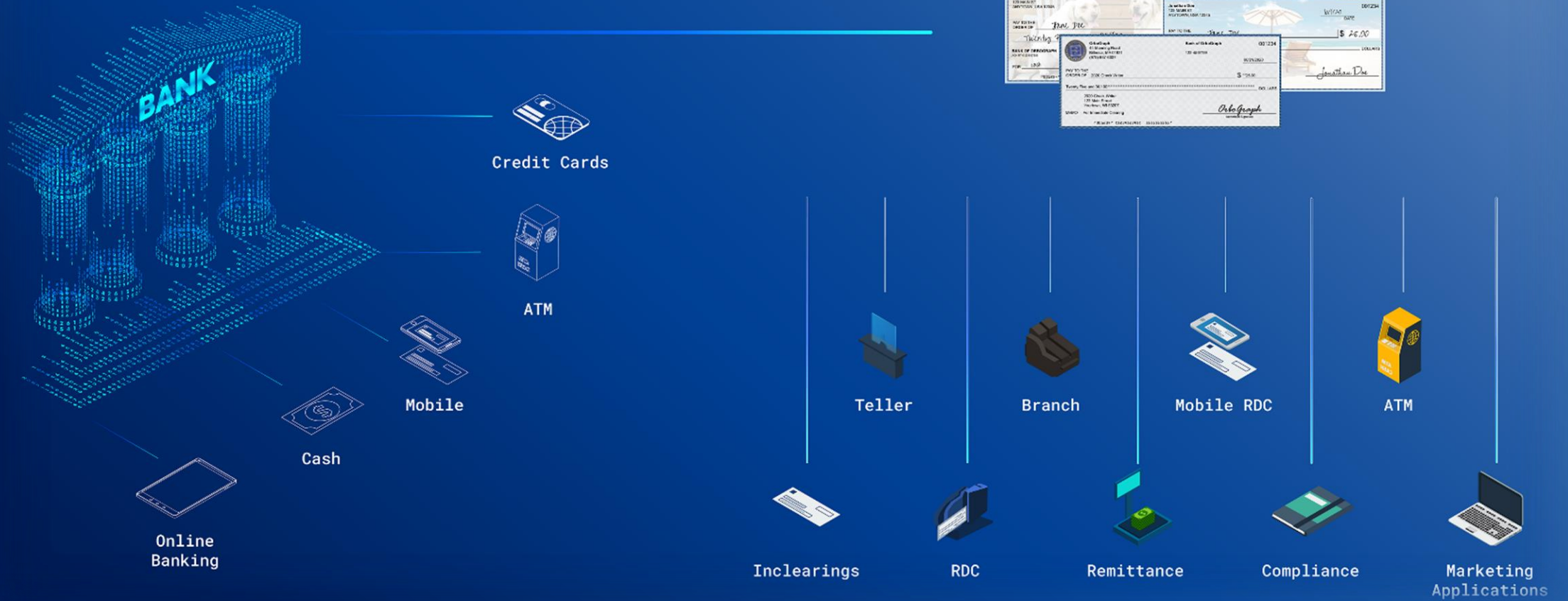
⑈00 1234⑈ ⑆ 1234 1234 ⑆ 5555555555⑈



KICKING OFF
TO FASTER PAYMENTS

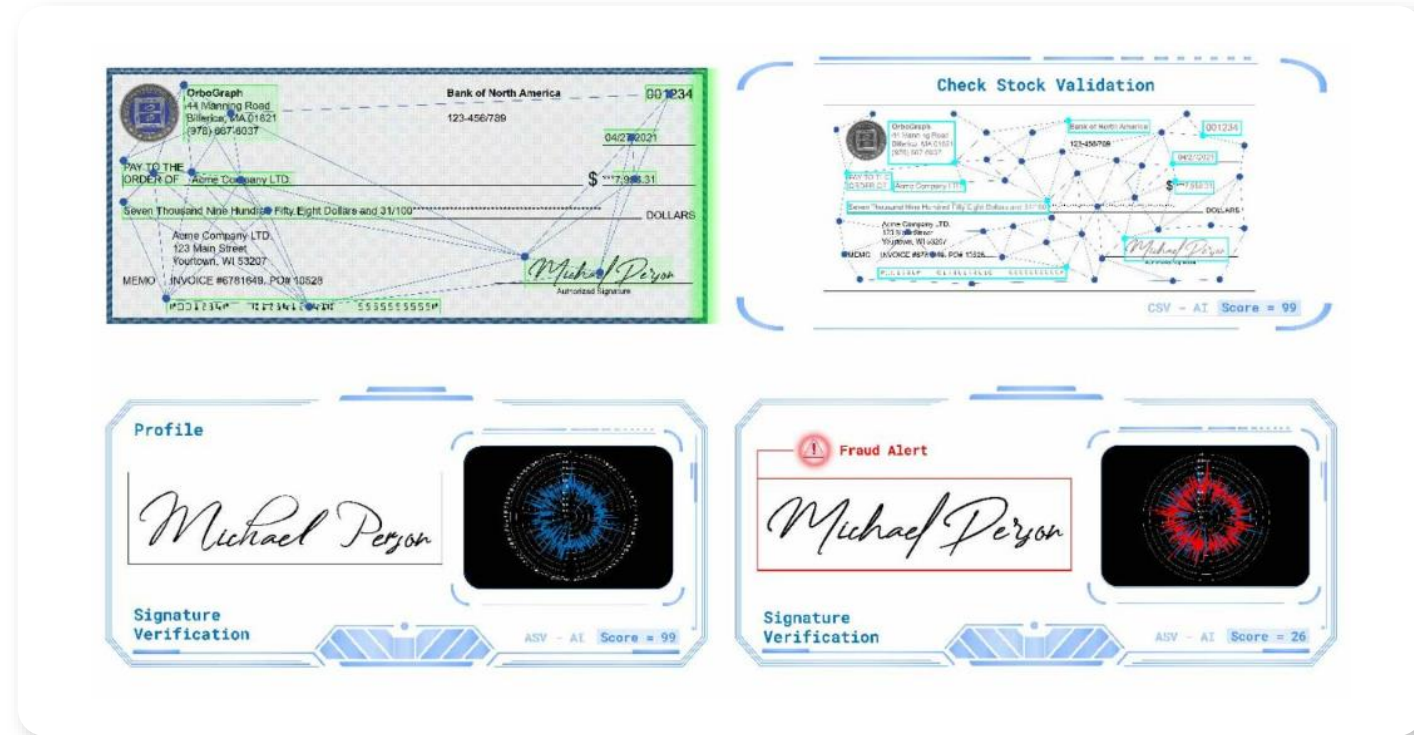


Diversified Deposit Channel Exposure

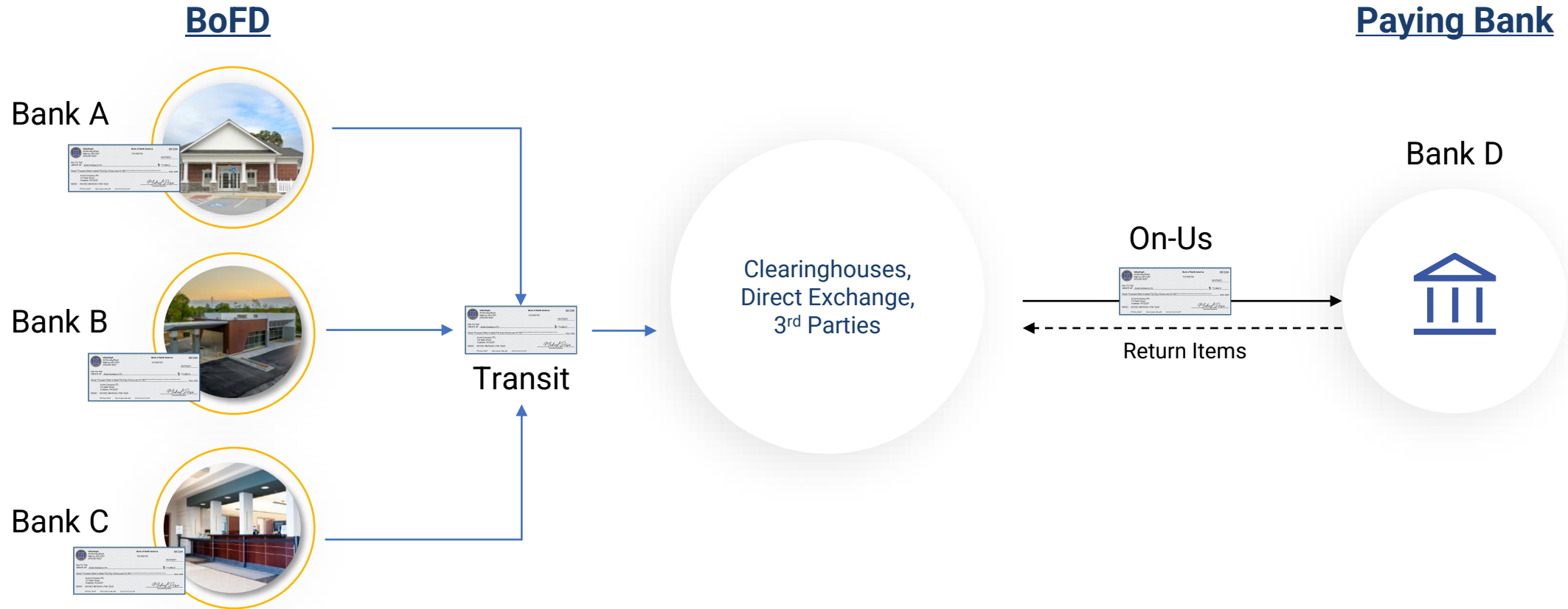


Major Fraud Types

- **Counterfeit**
 - Different check Stock
 - Serial Out Of Range or Duplicate
 - Many times different signature
- **Forgery**
 - Different signature
 - Same check stock
 - Serial in range
- **Alterations**
 - Font discrepancies
 - CAR \neq LAR
 - Same check stock
 - Same signature
 - Serial in range
- **Payee**
 - Positive pay: Payee name verification
 - Account holder name match (Deposits)



Check Workflow Working Against the FI

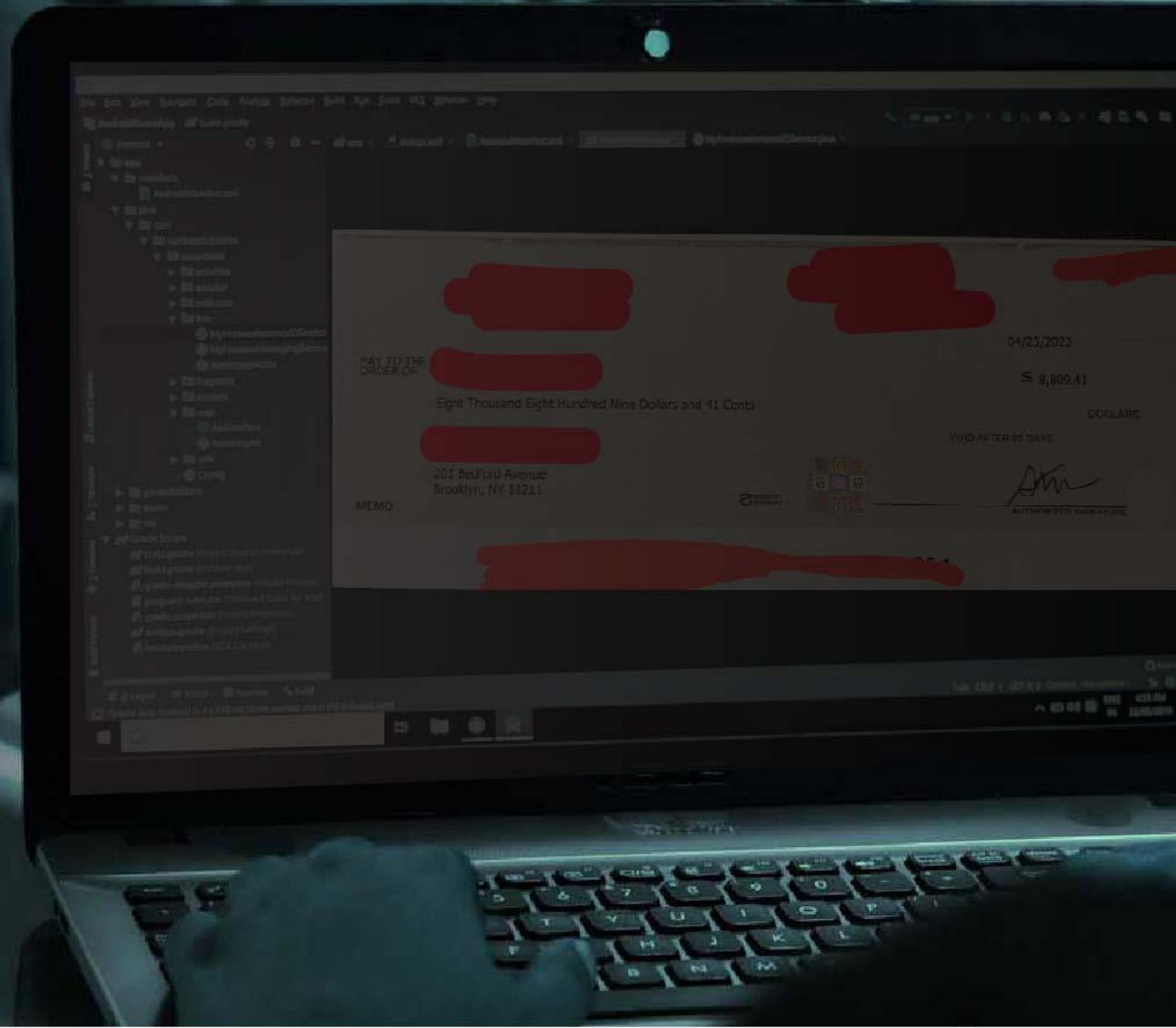


More Exposure...

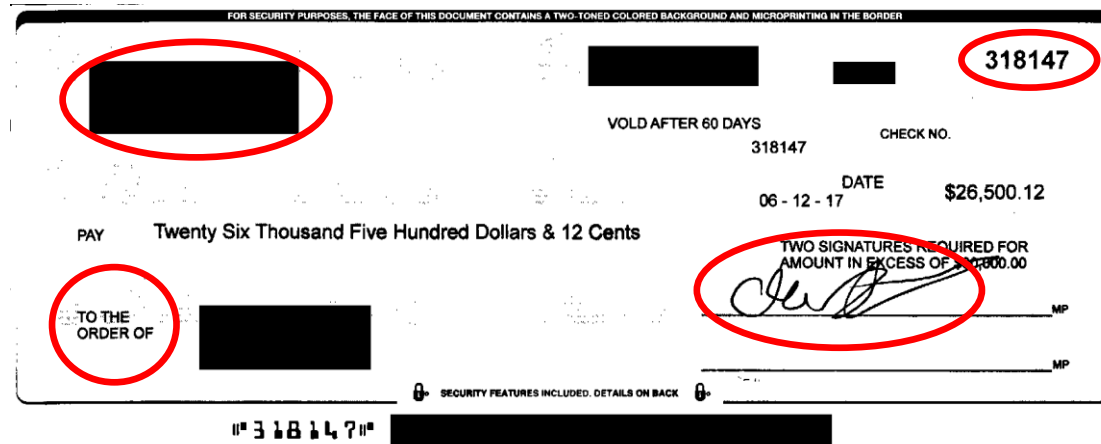
- Self Service deposit channels
- Synthetic accounts
- Account take over
- Organized crime
- Money mules
- Real-time payment
- Friendly fraud
- 1st party
- 3rd party fraud



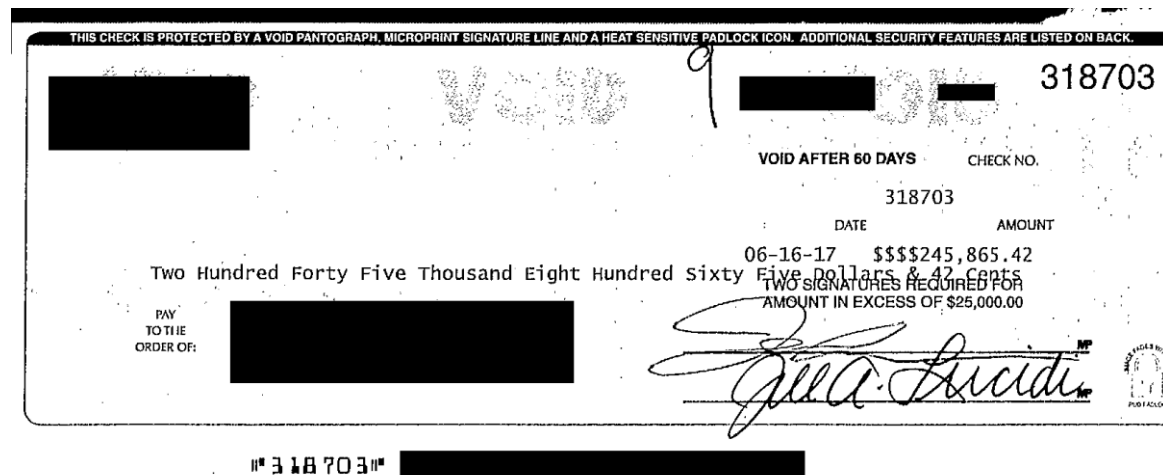
Check Fraud: Use Case Examples



Semi-Skilled Counterfeit

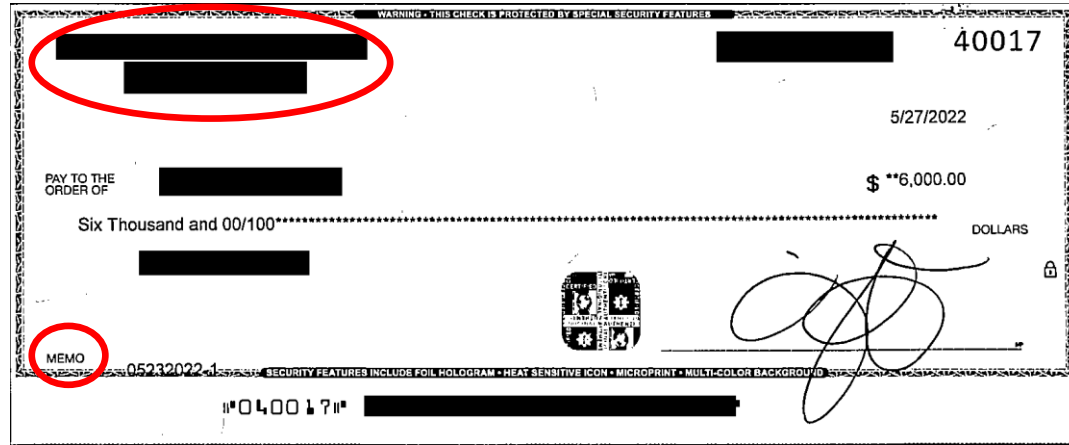


Fraud Item

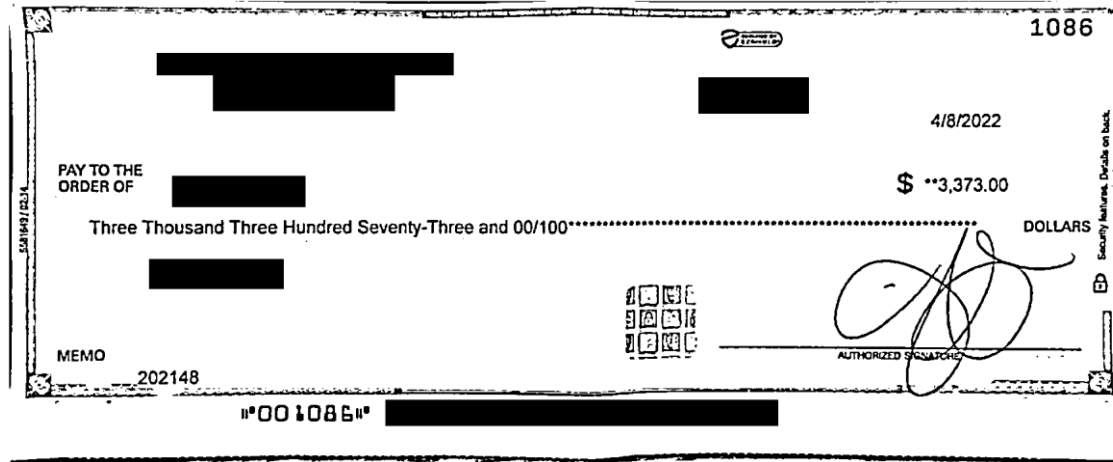


Good Item

Skilled Counterfeit

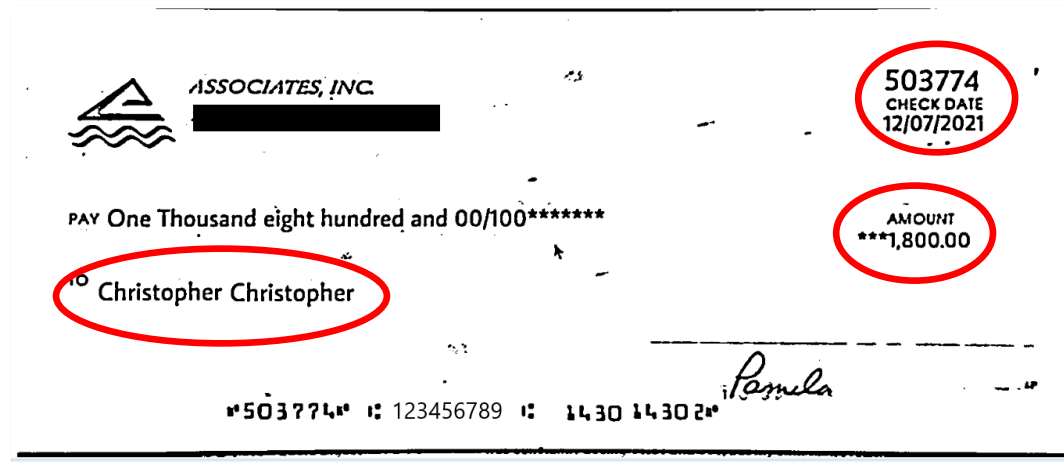


Fraud Item

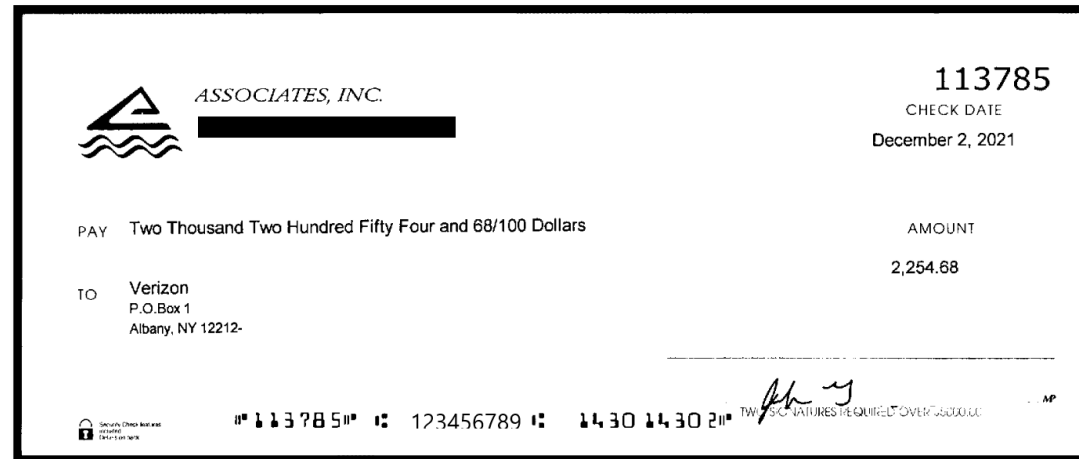


Good Item

Semi-Skilled Alteration



Fraud Item



Good Item

Stolen Check: Altered Payee

ORIGINAL CHECK HAS A COLORED BACKGROUND PRINTED ON CHEMICAL REACTIVE PAPER - SEE BACK FOR DETAILS

CHECK DATE 08/12/2021 CHECK NUMBER 452855

PAY THIS AMOUNT
\$*****980.00
VOID AFTER 120 DAYS

PAY EXACTLY *****NINE HUNDRED EIGHTY DOLLAS AND NO CENTS

PAY TO THE ORDER OF Gregory F. [REDACTED]
[REDACTED] Ohio [REDACTED]

R# Ottinger
Kurt J. Hammond

⑈452855⑈ [REDACTED]

Fraud Item

ORIGINAL CHECK HAS A COLORED BACKGROUND PRINTED ON CHEMICAL REACTIVE PAPER - SEE BACK FOR DETAILS

CHECK DATE 3/30/21 CHECK NUMBER 403163

PAY THIS AMOUNT
\$*****15.00
VOID AFTER 120 DAYS

PAY EXACTLY *****FIFTEEN DOLLARS AND NO CENTS

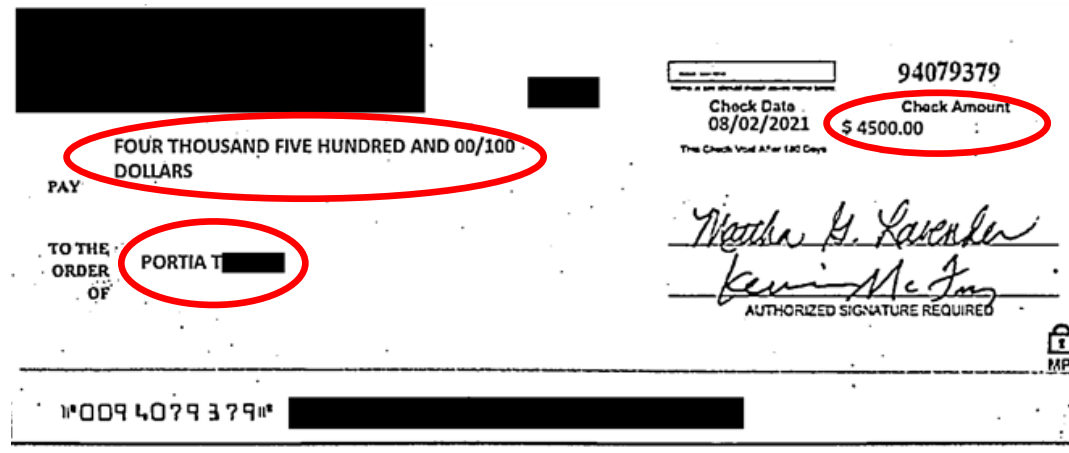
PAY TO THE ORDER OF KATIE C [REDACTED]
[REDACTED] CLEARWATER, FL [REDACTED]

R# Ottinger
Kurt J. Hammond

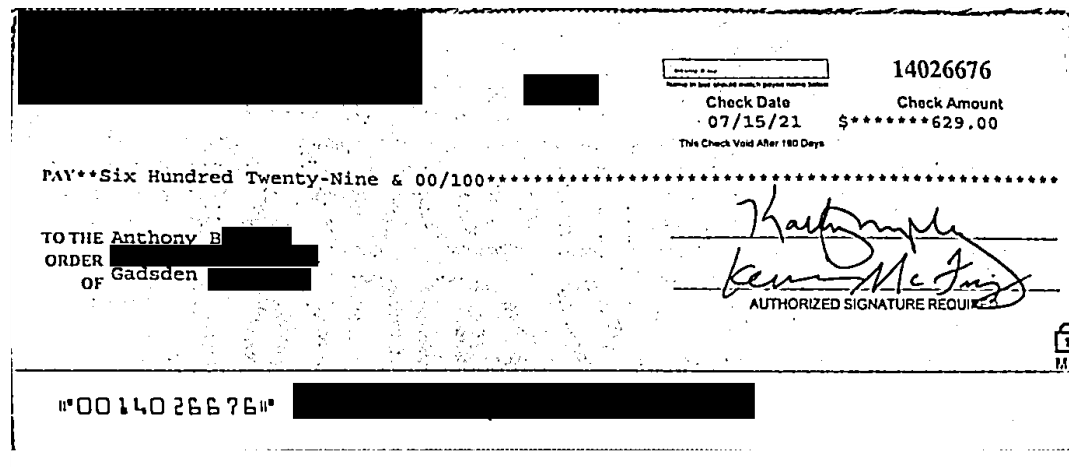
⑈403163⑈ [REDACTED]

Good Item

Image Examples: Altered Payee



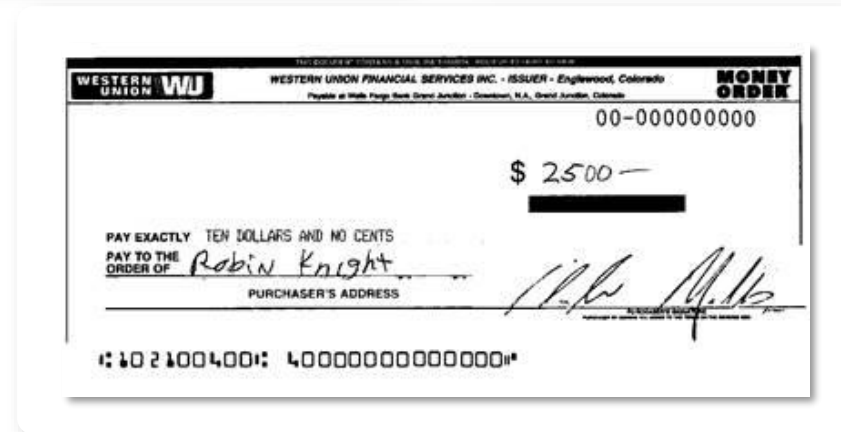
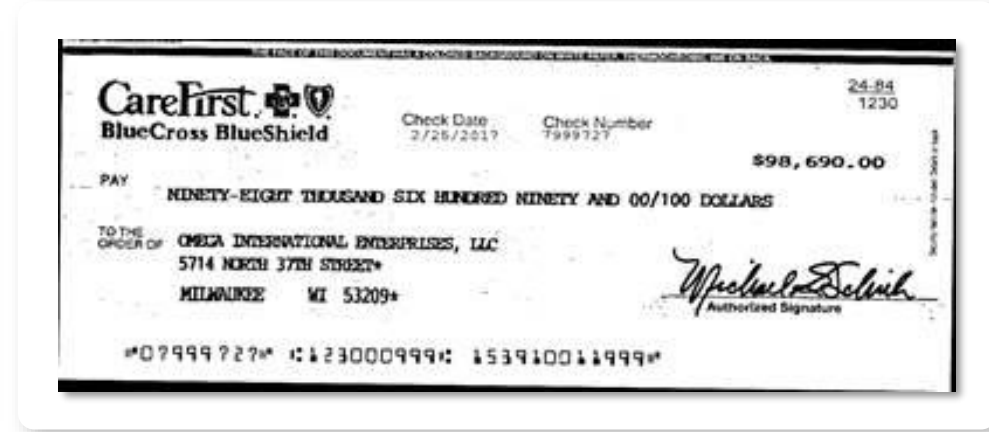
Fraud Item



Good Item

Image Use Case Examples

Fraudulent





Modernizing Check Fraud Detection

Comprehensive Approach



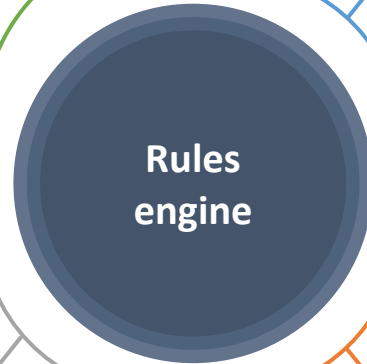
Transaction Review

- Pattern analysis (serial, amount, velocity)
- Duplicate
- High dollar
- Positive and negative lists
- New account
- Account status / OD / NSF
- Treasury check validation



Deposit fraud

- Test against cross bank negative history
- Reference known bad accounts & items
- Recommend action based on risk score
- Consortium data sharing



Rules engine

Image fraud

- Automated signature verification
- Check stock validation
- Check style analysis
- Amount verification
- PAD/RCC Detection
- Payee matching



Negotiability

- Image quality
- Amount discrepancies
- Signature presence
- Dual signatures required
- Endorsement presence
- Date – stale/post



AI-based Signature Verification

- Utilizing AI and deep learning models for automated signature verification
- Reflecting the probability that two signatures are signed by the same signer



Image Forensics – Check Stock



- Analyzes the attributes, layout, relative coordinates and dimensions of select preprinted fields as “anchor points”
- Precision = accuracy for locating fields of interest
- Measurements
 - Dimensions/size/distance
 - Relative positioning
 - Triangulation
- Image analysis comparison
 - “Known good”
 - “Known bad”

Image Forensics: Techniques per Field

Payer Name/Address

- Free read OCR, Watch Lists,
- Marketing (Transit Checks), AML

Date

- Negotiability (Stale/Post Dated),
- Positive Pay, Fraud Detection

Check Number

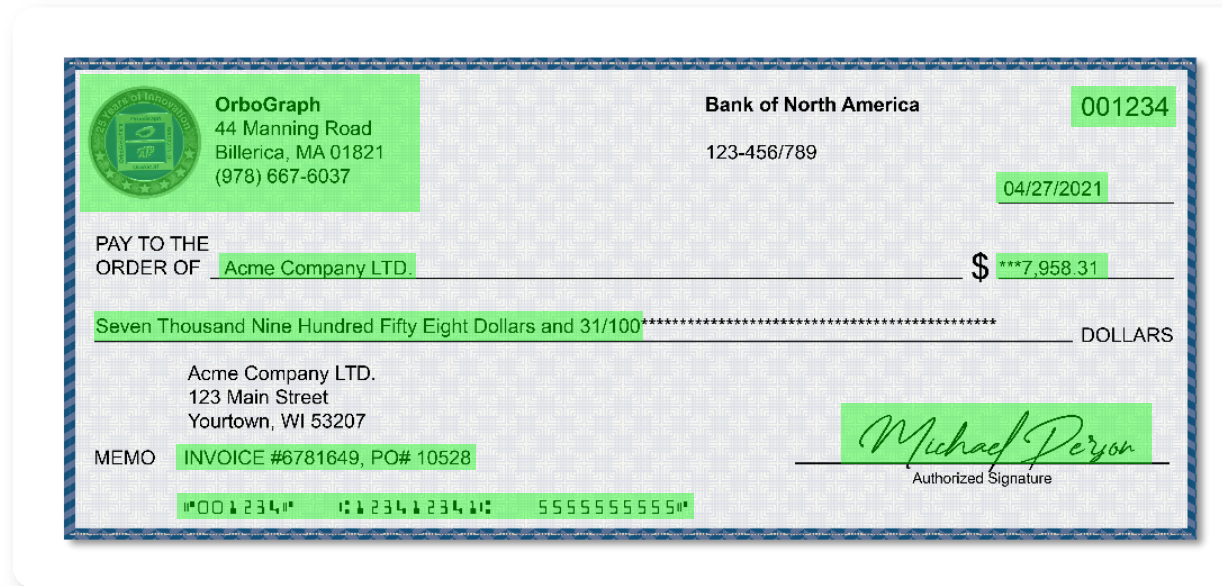
- Positive Pay, Fraud Detection, Image Integrity, MICR Repair

Payee

- Positive Pay - Payee Alteration,
- Acct. Holder Name Match,
- Watch Lists, Free Read Business
- Remittance Posting,
- Marketing Data Dictionary

Memo Line

- Remittance,
- AP Posting
- Fraud



Courtesy Amount

- Recognition, Amount Verification,
- CAR/LAR Discrepancy, Check Style Analysis (Font Discrepancy)
- Positive Pay, Fraud
- Detection, Image Integrity

Legal Amount

- POD,
- Amount Verification,
- Positive Payee,
- Fraud Detection,
- Image Integrity

Check Stock Validation

- Counterfeit Detection
- On-us & Transit

MICR Line

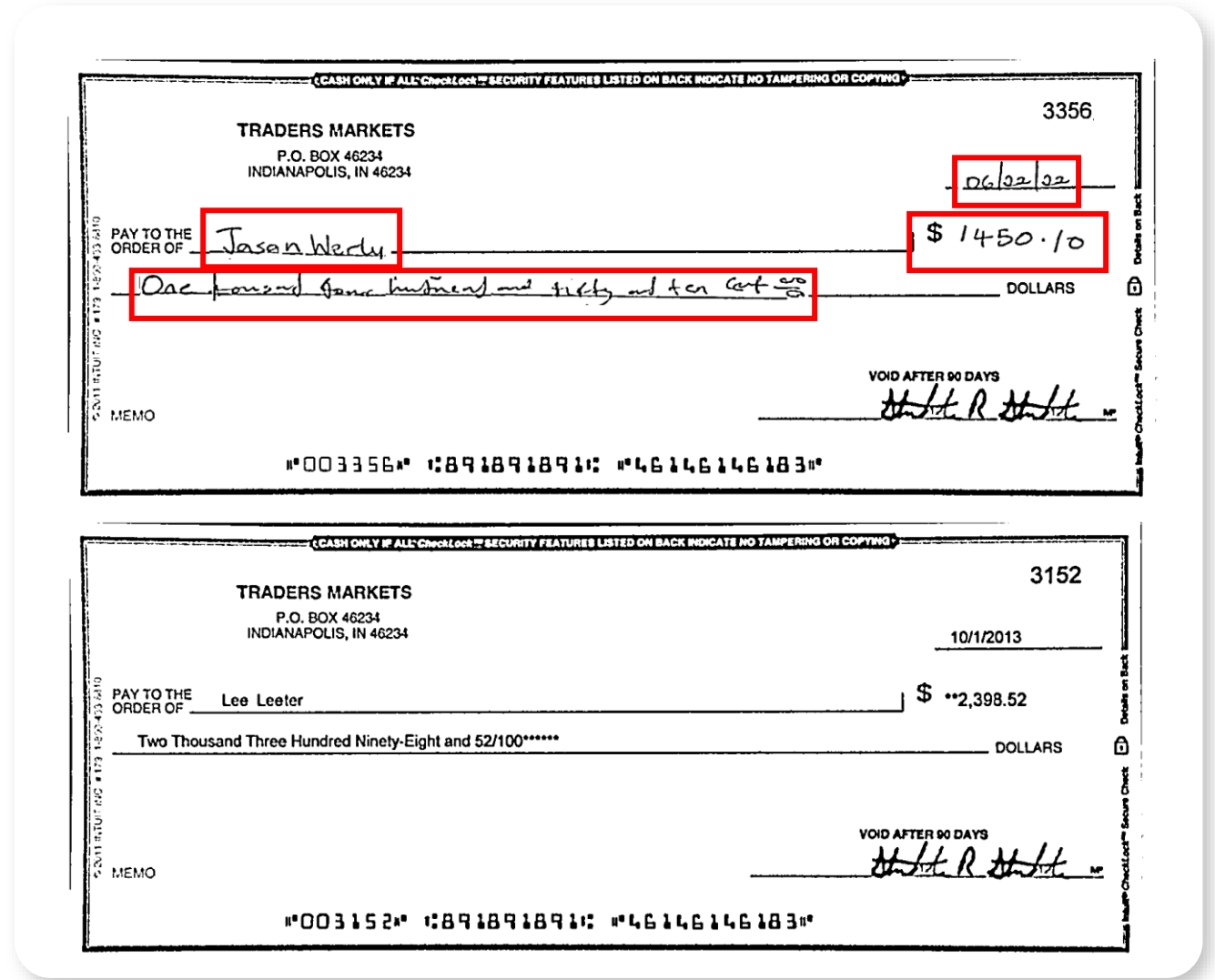
- Mobile Recognition
- MICR Repair,
- Image Integrity

Signature

- Negotiability
- Forgery Detection
- PAD Detection
- Multiple Signers Required

Alteration Detection Technology

- Check Style Analysis
- CAR/LAR Discrepancy
- Payee Detection
- Handwriting Style Analysis - comparing to previously cleared checks





Questions?