

Authentication and fraud prevention:

A deep dive into how digital payment networks save you time and money

Global Payments and Card Conference
2025



Our Speakers

Ask me about:
Evolution of B2B fraud



Kevin O'Hanlon
B2B Payables Product
Management,
Bank of America

Ask me about:
Mitigating fraud



Jack Gilman
Sr. Director of Channel
Relationship Management,
Bottomline



What fraud types target businesses?



Business Email
Compromise



Account Takeover



Fraudulent/Imposter
Vendors



Social Engineering



Business email account compromise



What does BEC look like?

Business Email Account Compromise Fraud is the hacking of or impersonation of a business email to update banking information to intercept a payment

- Real vendor email is hacked. Vendor emails payer asking to update banking info.
- Fake email that looks like the real business is used to try to get payer to update banking info, using an address that looks convincing but isn't real, like @bankofamerica.com (this is @BANKOAMERICA.COM)



What can I do about it?

- Ensure your vendors are enrolled through Bottomline to have them authenticated, preventing access to their accounts and payments.
- Train staff to look for tells, like suspect language ("please pay now") and typos.



Anatomy of a business email compromise fraud



Account takeover



What is Account Takeover?

Account Takeover is a fraudster's ability to log in to an account or membership by phishing (stealing) the real vendor's username and password.

The fraudster then logs in and changes bank account information to intercept a payment.



Four Layers of Defense

MFA Challenges

Logging in from a new device, even with the new password, means a code or three question challenge to gain access.

SIM card security

If you update banking info, networks can check cell phones to see if the SIM card was recently "ported" to a new phone.

All bank accounts authenticated

Each bank account must be checked before payments can be made.

Phone-based banking account protection

Once inside you cannot update banking or user information without another MFA to your phone.



Fraudulent or imposter vendor



What is an imposter or fraudulent vendor?

A fraudster who impersonates a business to enroll in Bottomline, with the plan to intercept the first payment made to the supplier.

Public entities that put contracts out to bid are particularly susceptible to this kind of fraud.



How do we stop them?

- Authentication of every business before they ever enroll ensures bad actors don't slip through the cracks.
- Monitoring logins in real-time for location, device, and other key markers prevents an imposter from gaining access to an account.



Social engineering



What is Social Engineering?

The method by which a fraudster tricks, pressures, or otherwise convinces an employee to surrender information or take an action they shouldn't.

It's omnichannel, coming via phone calls, emails and texts. It preys on emotion, urgency, and even knowledge from hacked communications.



How do we prevent it?

- By taking the human element out of the equation. Our process is never reliant on a judgement call from a person.
- Instead, we use digital identity verification to ensure the person is who they say they are (or prove they aren't)



Never separate security and payments



Ask your bank what services they can provide to protect you



Control the way you communicate with your business counterparts



Use technology partnerships for secure authentication



Always be ready to slow down and stop a payment



Place MFA everywhere – Cell and VoIP phone logins, email access



Ensure your organization protects against malicious links



AUTHENTICATION AND FRAUD

Mitigate the risk of payment fraud

Managing vendor account details and sending paper checks increases fraud risk



64%
of firms reported
fraud attempts

32%
of those suffering
a loss

Do you encrypt critical bank data?

Paymode is a highly encrypted and secure network with frequently evolving standards.

What measures do you take to prevent account takeovers and unauthorized changes?

The network is protected by multi-factor authentication and device fingerprinting technology.

Do you use behavioral analytics?

Paymode stores user's device fingerprint, IP address, and cookies.

How do you shield payments from outside threats?

Paymode onboards suppliers with cutting-edge digital identity verification methods and manual expert reviews.

Where do you go to find out about known fraudsters?

Paymode evaluates against digital identities used by known fraudsters.



AUTHENTICATION AND FRAUD

Protecting the buyer and supplier



Unmatched security of Paymode-X

\$400B	>	0
in annual payments processed through Comprehensive Payables		Instances of successful fraud
\$175M	>	100%
in payments actively targeted by fraudsters		of those payments protected by Paymode-X
>37k	>	100%
Transactions, aggregating in \$1.5B in spend, processed during risk events		of those payments actively monitored and investigated in real time

115%

Increase in fraud attempts
YoY: 2022–2023

Paymode data security features

Security checks at every level of the payment process



Transport

All sensitive data to and from
Paymode is encrypted

Multifactor Adaptive
Authentication
on high-risk transactions



Payment

Control Total emails support
process checks and balances

User Account Monitoring
and Maintenance

Individual user ID and password
with support for segregation
of duties

Multi-level approvals

Account segregation



Internal
processing

Account numbers, passwords
and other sensitive data are
encrypted for storage

Access is limited and
actions audited

Protected by security-
management software



Physical plant

Restricted access in a
“zoned” facility

Production and DR sites
have redundant power and
internet providers

Backups are real-time,
supplemented nightly



In practice: blocking fraudulent enrollments



Who?

Fraudster with a bad email domain



What?

Attempted enrollment impersonating Major Business Social Network company with a spoofed domain



How did we stop it?

Paymode systems automatically flagged and blocked enrollment due to a **variety of high-risk red flags**:

- High risk domain
- High risk Proxy IP
- Social Network review
- Failed bank account validation
- Browser data and enrollment details mis-match with known business information



In practice: internal experts conduct multiple checks before activating enrollment



Who?

Major food provider



What?

Attempted enrollment impersonating company employee with incorrect generic email for the company



How did we stop it?

Paymode systems automatically flagged and blocked enrollment due to **failed bank account validation**

- Paymode team reviewed flagged enrollment, finding browser data and enrollment details mis-matched known business information
- Valid employee enrolled the next day with a different generic email
- Paymode team called company on a verified line to ensure that the second contact was legitimate



In practice: blocking fraudulent enrollments



Who?

Fraudster with access to legitimate business email due to BEC



What?

Fraudster socially engineered Paymode Multi-factor Authentication (MFA) on Paymode account. After login to Paymode account, added new bank account details and email address.



How did we stop it?

Paymode systems automatically flagged and blocked enrollment due to **differences from past login activity**

- Paymode team called real vendor - on a verified line - to ensure that the bank account update was legitimate and learned bank account change and email address/phone update were unauthorized.
- Paymode team removed and blacklisted bank account information (which was never activated)



What do we hear from customers?



Customer Challenges

- Fear their vendors being compromised, but don't know how to prevent it
- Trouble authenticating new vendors
- Do not have digital tools and programs necessary to stop fraud from happening



How a network can help

- Power of the Network!
 - Secure Vendor Network of **550k+ electronic accepting Businesses**
 - On average, **50%** of a company's vendor population are **already authenticated** in network.
- Preparing For New Threats
- Layers of Protection





What's Next:

- Review how your company mitigates the risk of payment fraud and implement key strategies and policies
- Dive deeper into fraud prevention techniques, case studies, or software tools
- Reinforce benefits of Network participation if already participating, if not, consider adopting

Notice to Recipient

These materials have been prepared by one or more affiliates of Bank of America Corporation ("BAC" and, together with its affiliates, the "BAC Group") for the client or potential client to whom these materials are directly addressed and delivered (the "Company") for discussion purposes only in connection with an actual or potential mandate or engagement and remain subject to verification and to our further review and assessment from, inter alia, a legal, tax, compliance, accounting policy and risk perspective, as appropriate. These materials were designed for discussion with and consideration by specific persons familiar with the business and affairs of the Company and are being furnished and should be considered only when taken together with any other information, oral or written, provided by us in connection herewith. These materials are not intended to provide the sole basis for evaluating, and should not be considered as, and are not intended to provide, any advice, recommendation or formal opinion with respect to, any transaction or any financial, strategic, business or other matter and do not constitute an offer or solicitation to sell or purchase any securities, nor do they constitute a commitment by BAC or any of its affiliates to provide, arrange, bookrun, underwrite or syndicate any financing for any transaction, to market, offer, place, sell, underwrite or purchase any security or to otherwise enter into any type of business relationship in connection herewith. None of BAC or its affiliates has provided or will provide legal, tax, compliance, accounting or risk advice to the Company or any recipient of these materials. These materials are not intended to provide any such advice or any consulting, rating agency or environmental, social and governance and sustainability ("ESG") advice or ESG rating agency advice, nor are any materials provided by us intended to identify, evaluate or advise you as to any potential legal, reputational, regulatory compliance or other risks or as to the fairness, accuracy or completeness of your or any other party's public disclosure. The information and any examples provided are illustrative, may not be reflected in the product or service you receive from BAC, and have not been evaluated or verified for effectiveness, quality, accuracy, completeness or risk and none of BAC or its affiliates is endorsing any particular approach to ESG, any particular ESG investment strategy or any particular ESG standards, ratings or metrics. These materials are subject to the Company's own review and assessment from a legal, tax, compliance, accounting policy, financial, strategic, ESG, and risk perspective, as appropriate, and the Company should consult with its own legal, tax, compliance, accounting, financial, and ESG advisors prior to entering any transaction. The BAC Group may be engaged in certain business activities which could have increased investor, client, employee, regulatory scrutiny and/or scrutiny from other parties generally from an ESG perspective. Any ESG assessments or consideration of ESG factors by BAC in the services or information provided to you, will generally be reliant on data received from you or third parties (including ESG data vendors), which may be estimated or only consider certain ESG aspects and at certain points (rather than looking at the entire sustainability profile and actions of the Company/the BAC Group or its value chain). These materials are not intended to be legally binding or to give rise to any legal relationship between the recipient or any other person whatsoever and any person or entity within the BAC Group. No person or entity within the BAC Group will be responsible or liable (whether in tort, contract or otherwise) for any losses or damages, consequential or otherwise, that may be incurred or alleged by any person or entity as a result of these materials, any inaccurate, incomplete or misleading statement, error or omission in these materials, or any transaction (whether entered into or not) relating to or resulting from referred to, or shown, transmitted, or otherwise given to, any person other than the Company's authorized representatives, without our prior written consent.

These materials are based on information provided by or on behalf of the Company and/or other potential transaction participants, from public sources or otherwise reviewed by us. We assume no responsibility for independent investigation or verification of the information included in these materials (including, without limitation, data from third party suppliers) and have relied on such information being complete and accurate in all material respects. To the extent such information includes estimates and forecasts of future financial performance prepared by or reviewed with the managements of the Company and/or other potential transaction participants or obtained from public sources, we have assumed that such estimates and forecasts have been reasonably prepared on bases reflecting the best currently available estimates and judgments of such management or other parties (or, with respect to estimates and forecasts obtained from public sources, represent reasonable estimates). Any such estimates and forecasts may reflect assumptions and judgments that prove incorrect; there can be no assurance that any estimates or forecasts will be realized. No representation or warranty, express or implied, is made as to the accuracy or completeness of any such information, or of any other information in these materials, and nothing contained herein is, or shall be relied upon as, a representation, warranty or undertaking, whether as to the past, the present or the future. These materials may not reflect information known to other professionals in other business areas of the BAC Group. Any league tables referenced within these materials have been prepared using data sourced from external third-party providers as outlined in the relevant footnotes where applicable.

The BAC Group comprises a full service securities firm and commercial bank engaged in securities, commodities and derivatives trading, foreign exchange and other brokerage activities, and principal investing as well as providing investment, corporate and private banking, asset and investment management, financing and strategic advisory services and other commercial services and products to a wide range of corporations, governments and individuals, in the United States and internationally, from which conflicting interests or duties, or a perception thereof, may arise. In the ordinary course of these activities, parts of the BAC Group at any time may invest on a principal basis or manage funds that invest, make or hold long or short positions, finance positions or trade or otherwise effect transactions, for their own accounts or the accounts of customers, in debt, equity or other securities or financial instruments (including derivatives, bank loans or other obligations) of the Company, potential counterparties or any other person that may be involved in a transaction.

"Bank of America" and "BoFA Securities" are the marketing names used by the Global Banking and Global Markets divisions of BAC. Lending, leasing, equipment finance, merchant services, derivatives and other commercial banking activities, and trading in certain financial instruments, are performed globally by banking affiliates or subsidiaries of BAC, including Bank of America, N.A., Member FDIC, or of the deposit protection scheme, if available, in the relevant jurisdiction, Equal Housing Lender. Trading in securities and financial instruments, and strategic advisory, and other investment banking activities, are performed globally by investment banking affiliates or subsidiaries of BAC ("Investment Banking Affiliates"), including, in the United States, BoFA Securities, Inc. which is a registered broker-dealer and Member of [SIPC](#), and, in other jurisdictions, by locally registered entities (including Bank of America Europe Designated Activity Company, BoFA Securities Europe SA and Merrill Lynch International). BoFA Securities, Inc. is registered as a futures commission merchant with the CFTC and a member of the NFA. Bank of America Europe Designated Activity Company is a wholly-owned subsidiary of BAC and is regulated by the Central Bank of Ireland. Products and services that may be referenced in these materials may be provided through one or more affiliates of BAC. Bank of America and BoFA Securities entities and branches provide financial services to the clients of Bank of America and BoFA Securities and may outsource/delegate the marketing and/or provision of certain services or aspects of services to other branches or members of the BAC Group. Your service provider will remain the entity/branch specified in your onboarding documentation and/or other contractual or marketing documentation even where you communicate with staff that operate from a different entity or branch which is acting for and on behalf of your contractual service provider in their communications with you. Some or all products and services offered by the BAC Group may be unavailable in certain jurisdictions, or may be available only on an offshore and/or reverse solicitation basis, and availability is subject to change without notice. The BAC Group does not perform in any jurisdiction banking activities that are reserved by local law to licensed or approved banks, except in those jurisdictions where its banking affiliates or subsidiaries have procured the necessary licenses or approvals.

For those jurisdictions where they are not licensed to perform banking activities, all services/products are conducted on an offshore basis for Latin America and the Caribbean. Some or all of the products may not be available in certain jurisdictions and are subject to change without notice. This document and its content are for information purposes and shall not be interpreted as banking or financial intermediation, business solicitation and/or public offering of any kind.

Investment products offered by Investment Banking Affiliates:	Are Not FDIC Insured	Are Not Bank Guaranteed	May Lose Value
---	----------------------	-------------------------	----------------

This document is NOT a research report and is NOT a product of a research department and the material in this communication is not investment research or a research recommendation. This document is not prepared as or intended to be investment advice, and the content is not and should not be considered as investment advice under any circumstances. The BAC Group has adopted policies and guidelines designed to preserve the independence of our research analysts. These policies prohibit employees from, directly or indirectly, offering research coverage, a favorable research rating or a specific price target or offering to change a research rating or price target as consideration for or an inducement to obtain business or other compensation and prohibit research analysts from being directly compensated for involvement in investment banking transactions. The views expressed herein are the views solely of the specific BAC Group line of business providing you with these materials and no inference should be made that the views expressed represent the view of the firm's research department.

Any statements contained herein as to tax matters were neither written nor intended by us to be used and cannot be used by any taxpayer for the purpose of avoiding tax penalties that may be imposed on such taxpayer. If any person uses or refers to any such tax statement in promoting, marketing or recommending a partnership or other entity, investment plan or arrangement to any taxpayer, then the statement expressed herein is being delivered to support the promotion or marketing of the transaction or matter addressed and the recipient should seek advice based on its particular circumstances from an independent tax advisor. Notwithstanding anything that may appear herein or in other materials to the contrary, the Company shall be permitted to disclose the tax treatment and tax structure of a transaction—including any materials, opinions or analyses relating to such tax treatment or tax structure, but without disclosure of identifying information or any non-public commercial or financial information (except to the extent any such information relates to the tax structure or tax treatment)—on and after the earliest to occur of the date of (i) public announcement of discussions relating to such transaction, (ii) public announcement of such transaction or (iii) execution of a definitive agreement (with or without conditions) to enter into such transaction; provided, however, that if such transaction is not consummated for any reason, the provisions of this sentence shall cease to apply. We are required to obtain, verify and record certain information that identifies the Company and other information that will allow us to identify the Company in accordance, as applicable, with the USA Patriot Act (Title III of Pub. L. 107-56, as amended, which was signed into law October 26, 2001) and such other laws, rules and regulations as applicable within and outside the United States.

For more information, including who your contractual service provider is or will be, the terms and conditions that apply to the service(s), and information regarding external third-party data providers and the criteria and methodology used to prepare a league table, please contact your Bank of America or BoFA Securities representative or relationship manager.

Notice regarding Bank of America or BoFA Securities entities outside of the United States: For Bank of America or BoFA Securities entities outside the United States, please see additional information via the following link: <https://www.bofam.com/en-us/content/dam1-disclaimer.html>.

Notice regarding Bank of America or BoFA Securities entities in the EEA and UK: For Bank of America or BoFA Securities entities in the European Economic Area and the United Kingdom, please see additional information via the following link: www.bofam.com/mfdisd.

Disclosure regarding BoFA Securities Europe SA: BoFA Securities Europe SA ("BoFA SE SA"), with registered address at 51, rue La Botie, 75008 Paris is registered under n° 842 602 690 RCS Paris. In accordance with the provisions of French Code Monétaire et Financier (Monetary and Financial Code), BoFA SE SA is an établissement de crédit et d'investissement (credit and investment institution) that is authorised and supervised by the European Central Bank and the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers. BoFA SE SA's share capital can be found at www.bofam.com/BoFASEdisclaimer.

Notice for Argentina: "Merrill Lynch" is the trademark that Bank of America Corporation uses in the Republic of Argentina for capital markets, financial advisory and investment businesses, which are conducted by and through Merrill Lynch Argentina S.A. This entity does not conduct any activities subject to banking license, such as capturing deposits from the public.

Notice for Brazil: Bank of America and BoFA Securities' Ombudsmen[] Toll Free: 0800 886 2000

"BoFA Securities" is the marketing name of Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários", which is a broker-dealer registered in Brazil of Bank of America Corporation.

*** Bank of America Merrill Lynch Banco Multiplo S.A.** (the banking affiliate in Brazil of Bank of America Corporation) and Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários (the registered broker dealer in Brazil).

Notice for Chile: Bank of America N.A., Oficina de Representación (Chile), is a representative office in Chile of Bank of America N.A., supervised by the Comisión para el Mercado Financiero and authorized to promote in Chile select products and services that Bank of America N.A. provides outside of Chile. Neither Bank of America, N.A., nor its representative office in Chile, is authorized to carry out in Chile any activities that are reserved by Chilean law to locally licensed banks.

Notice for Colombia: Bank of America N.A., Oficina de Representación (Colombia), is a representative office in Colombia of Bank of America N.A., supervised by the Superintendencia Financiera de Colombia and authorized to promote in Colombia select products and services that Bank of America N.A. and BoFA Securities, Inc. provides outside of Colombia. Neither Bank of America, N.A., nor its representative office in Colombia, is authorized to carry out in Colombia any activities that are reserved by Colombian law to locally licensed banks.

Notice for Dubai International Financial Centre: Merrill Lynch International is authorised and regulated by the Dubai Financial Services Authority. Principal address is ICD Brookfield Place, Level 46, Dubai International Financial Centre, Dubai, United Arab Emirates. License no. CL0322, P.O. Box 506576, Dubai, United Arab Emirates. This communication is not for distribution to the public or a large number of persons, but is personal to named recipients; it is directed to professional and market customers and not to retail customers. The financial products/financial services to which this marketing material relates is only made available to customers who in the view of Merrill Lynch International meet the regulatory criteria to be a Client under DFSA Conduct of Business rules (COB 2.3). Please note that Merrill Lynch International does not deal with retail clients.

Notice for Hong Kong: Bank of America, National Association, Hong Kong Branch, is a branch of a national banking association organized and existing with limited liability under the laws of the United States of America.

Notice for Kingdom of Saudi Arabia: This marketing communication is issued and approved by the Merrill Lynch Kingdom of Saudi Arabia Company which is authorised and regulated by the Kingdom of Saudi Arabia Capital Market Authority ("CMA"). Principal address is Kingdom Tower, 22 Floor, 2239 Al-Orouba Road, Olaya, Unit No: 50, Ar Riyadh 12214-9597, Saudi Arabia. This communication includes information given in compliance with the Regulations of the CMA. This communication may not be distributed in the Kingdom of Saudi Arabia except to such persons as are permitted under the regulations issued by the CMA. The CMA does not make any representation as to the accuracy or completeness of this communication, and expressly disclaims any liability whatsoever for any loss arising from, or incurred in reliance upon, any part of this communication. This material is not to be distributed to, nor to be read by, retail clients.

Notice for Mexico: Bank of America México, S.A., Institución de Banca Múltiple is a banking affiliate in Mexico of Bank of America Corporation and Merrill Lynch México, S.A. de C.V., Casa de Bolsa is a registered broker dealer affiliate in Mexico of Bank of America Corporation.

Bank of America, National Association, Charlotte, Carolina del Norte, Estados Unidos de Norteamérica, Representación en México is a representative office in Mexico of Bank of America, N.A., supervised by the Mexico National Commission on Banking and Securities.

Notice for Peru: Bank of America N.A., Oficina de Representación (Peru), is a representative office in Peru of Bank of America N.A., supervised by the Superintendencia de Banca, Seguros y Administradoras Privadas de Fondos de Pensiones and authorized to promote in Peru select products and services that Bank of America N.A. and its investment banking affiliates provide outside of Peru. Neither Bank of America, N.A., nor its representative office in Peru, is authorized to carry out in Peru any activities that are reserved by Peruvian law to locally licensed banks.

Notice for Qatar Financial Centre: Merrill Lynch International (QFC) Branch is licensed by the Qatar Financial Centre Regulatory Authority. Principal address is Tornado Tower, Level 22, West Bay, Doha, Qatar. QFC License no. 00258, P.O. Box 27774, Doha, Qatar. This communication is not for distribution to the public or a large number of persons, but is personal to named recipients; it is directed to eligible counterparty or business customers and not to retail customers. The financial products/financial services to which this marketing material relates is only made available to customers who in the view of Merrill Lynch International (QFC) Branch meet the regulatory criteria to be a Client under QFCRA Customer and Investor Protection Rules 2019. Please note that Merrill Lynch International (QFC) Branch does not deal with retail customers.

Bank of America Europe DAC ("BoFA Europe") is a designated activity company limited by shares. It is registered in Ireland with registered number no. 220165 and registered address at Two Park Place, Hatch Street, Dublin 2. BoFA Europe is a credit institution and is authorised and supervised by the European Central Bank and the Central Bank of Ireland. BoFA Europe is regulated by the Central Bank of Ireland.[List of branches is at https://business.bofa.com/content/dam/boamimages/documents/articles/DJ17-1174/bofam_entities_list.pdf.

Bank of America, N.A. ("BANA") is a national banking association organized and existing under the laws of the USA with charter number 13044 and with its registered address at 100 North Tryon Street, Charlotte, North Carolina 28202, USA. BANA (member of Federal Deposit Insurance Corporation (FDIC)) is authorised and regulated by the Office of the Comptroller of the Currency, and is subject to the supervision and regulation of the Board of Governors of the Federal Reserve System and the FDIC, each in the USA. BANA has a London branch ("BANA London Branch") with its principal place of business in the United Kingdom at 2 King Edward Street, London EC1A 1HQ, which is authorised by the Prudential Regulation Authority and subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. Details about the extent of BANA London Branch's regulation by the Prudential Regulation Authority are available from BANA London Branch on request.

Securities for Indonesia: Bank of America, National Association, Jakarta Branch ("BANA Jakarta"), is a branch of a national banking association organized and existing with limited liability under the laws of the United States of America. In Indonesia, BANA Jakarta is licensed and under the supervision of the Indonesia Financial Services Authority ("Otoritas Jasa Keuangan" or "OJK") and Bank Indonesia, and a participant of Deposit Insurance Corporation ("Lembaga Penjamin Simpanan" or "LPS"). PT Merrill Lynch Sukurtas Indonesia is licensed and supervised by OJK.

Notice for Philippines: Bank of America, National Association, Manila Branch is regulated by Bangko Sentral ng Pilipinas. <https://www.bsp.gov.ph>. Deposits are insured by Philippine Deposit Insurance Corporation up to P500,000 per depositor. For queries or concerns, please contact Client Service Team at (+632) 88155100 or asia-ssp-ph@bofa.com.

©2025 Bank of America Corporation. All rights reserved. 1/2025 | 7892537

