

NEW TOPICS IN TREASURY MANAGEMENT

CMTA

April 2018

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Treasury trends outlook: Government

What Matters

- Governments continue to look for efficient, low-cost channels to collect taxes, licenses and fees
- Constituents are looking for convenience when paying obligations and receiving refunds
- Assessing risk factors (data security, cyber attacks, privacy risks, etc.) when considering system upgrades/enhancements
- Implement easy-to-use payment channels that constituents will not perceive as difficult
- Governments have high concern over security and are focused on minimizing both electronic and paper fraud
- Employee workloads are increasing exponentially faster than staffing levels

Opportunities for Innovation

- Governments are moving from paper to electronic—for both payables and receivables
- The constituent experience can be enhanced through mobile applications for payment initiation and the disbursements of payments
- It's crucial to be able to receive collections no matter how the constituent wants to initiate the payment
- Reporting capabilities can be enhanced to support transparency initiatives
- Governments can take advantage of ePayables virtual purchase card programs to better manage vendor spend, increase security around payments and create rebates



Treasury trends outlook: Government



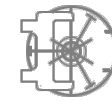
Receivables and Payables

- Analyze opportunities to outsource non-core payment functions to reduce processing costs
- Implement solutions that increase the level of straight through processing
- Efficient integration with ERP/TWS platforms



Working Capital and Cash Management

- Interest rate environment is impacting funding decisions
- Review processing flows to establish the most cost-effective and efficient cash management practices
- Increase working capital by developing strategy to accelerate collections and manage payables



Risk

- Governments are focusing on data security and risk mitigation against cyber crime attacks
- Governments are creating and following market, credit and operational risk management procedures
- PCI compliance to mitigate liability of credit card number storage
- Increased need for staff allocation to compliance/audit positions

Some pursuits for efficiency gains across the U.S.



Shared services pursued by cities with similar taxing regulation to gain economies of scale



Consortia to create purchasing power (credit card, supplies, etc.)



Programmatic partners to leverage strengths and focus scarce resources on area of distinction



Co-location to leverage strengths and focus scarce resources on areas of distinction

Source: Moody's Investors Service

The Millennial Impact

	Millennials	GenXers	Boomers
Used a bank's mobile app	67%	55%	33%
Used a bank's website or online portal	78	75	67
Used the mobile app to transfer money	26	19	8
Used the mobile app to pay a friend or family	21	12	5

Source: 2015 Chase Digital Adoption Survey

Chase's Digital Adoption Survey shows a high percentage of millennials using mobile apps and websites for banking and to transfer money

Statistic

75% of the workforce will be made up of Millennials by 2030¹

>50% of Millennials are using non-traditional payment companies like PayPal and Venmo²

Insight

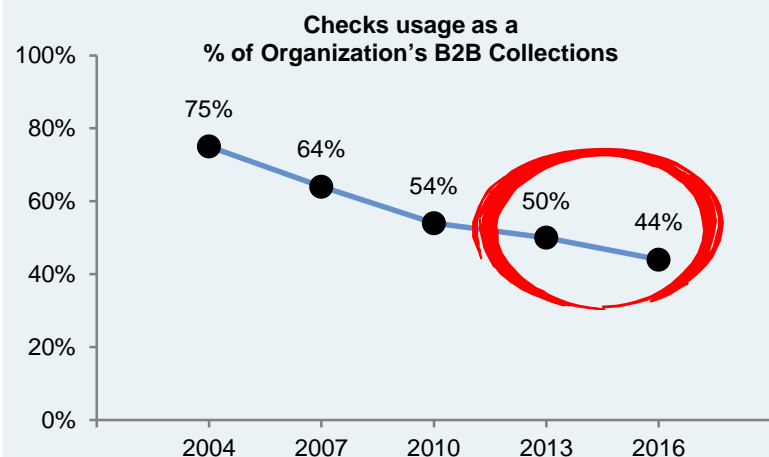
- Millennials are highly **tech savvy** and grew up with internet and mobile devices, and as more and more become decision makers in businesses, the **shift to electronic B2B payments** could increase
- **User friendliness** and **customer experience** is driving Millennials toward **non-traditional banking** options, so companies must be willing to adapt

¹Source: US Bureau of Labor Statistics

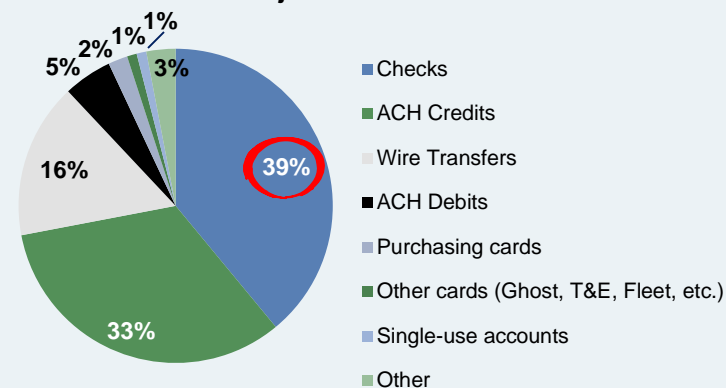
²Source: FICO Millennial Insight Report

Receivables: Range of benefits continue to drive down check collections

Check collection volumes continue to fall but corporates continue to see major customers paying them via check

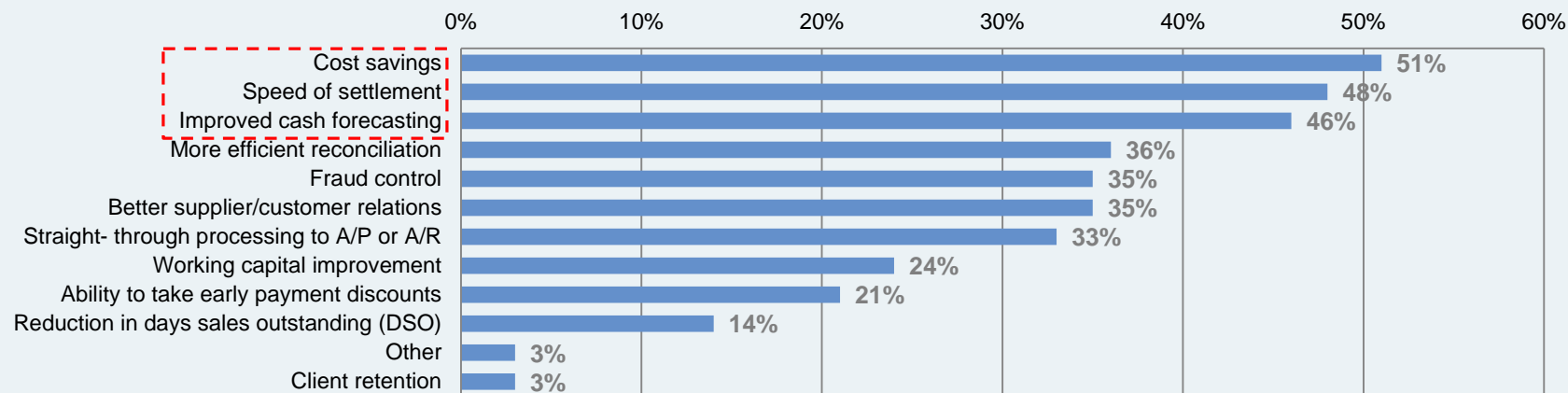


Payment Method Used to Receive Payments From Major Customers



The decrease in overall check collection volumes largely stems from the wider appeal of electronic channels: Cost, Timeliness, and Quality of information

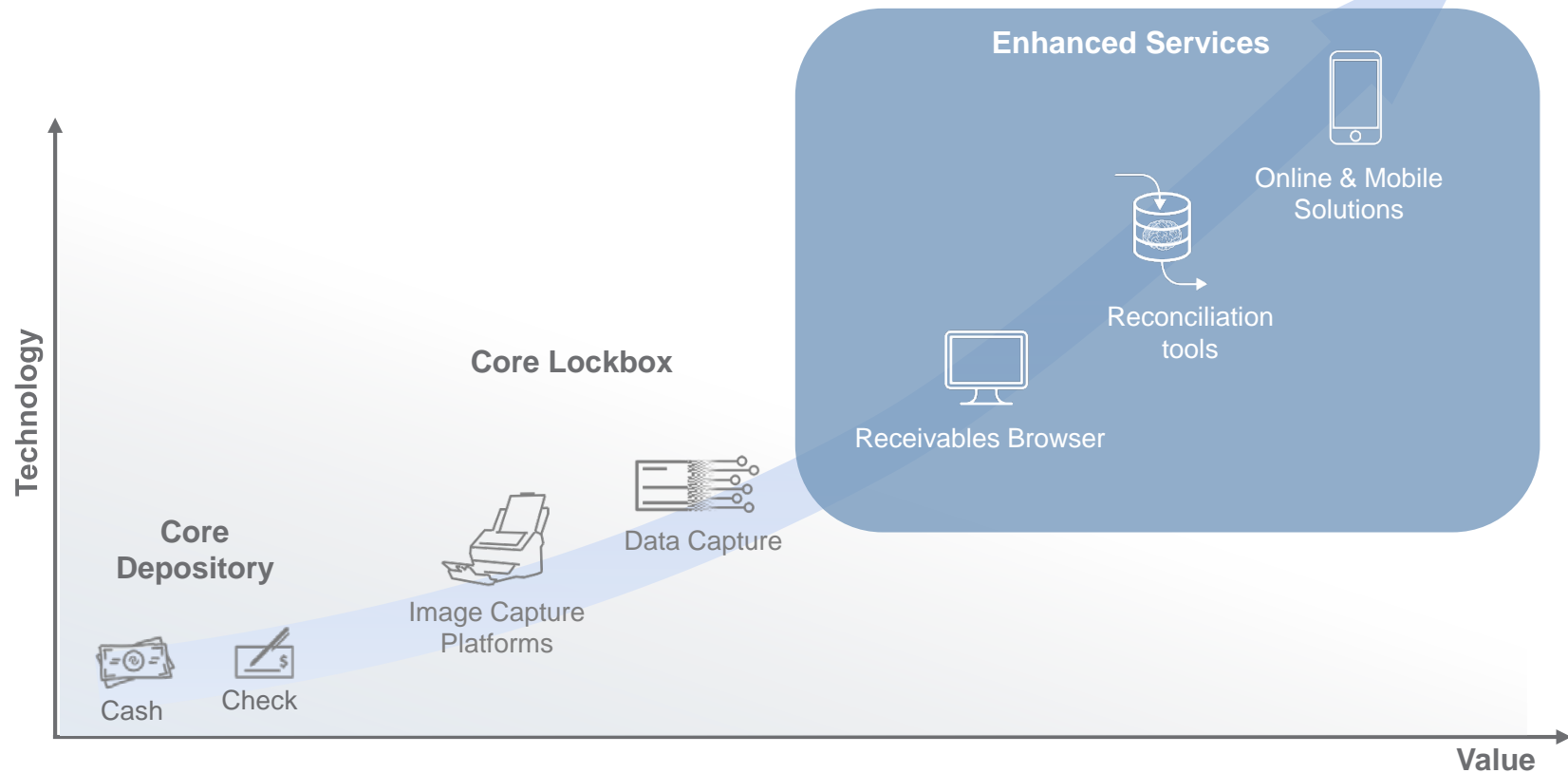
Benefits Gained by Sending or Receiving Electronic Payments



Source: Association for Financial Professional, 2016 Electronic Payment Survey, Oct 2016

Addressing your receivables needs

Consolidate receivables and increase cash application rates



- Branch Deposit
- Remote Safe Solution
- Cash Vault

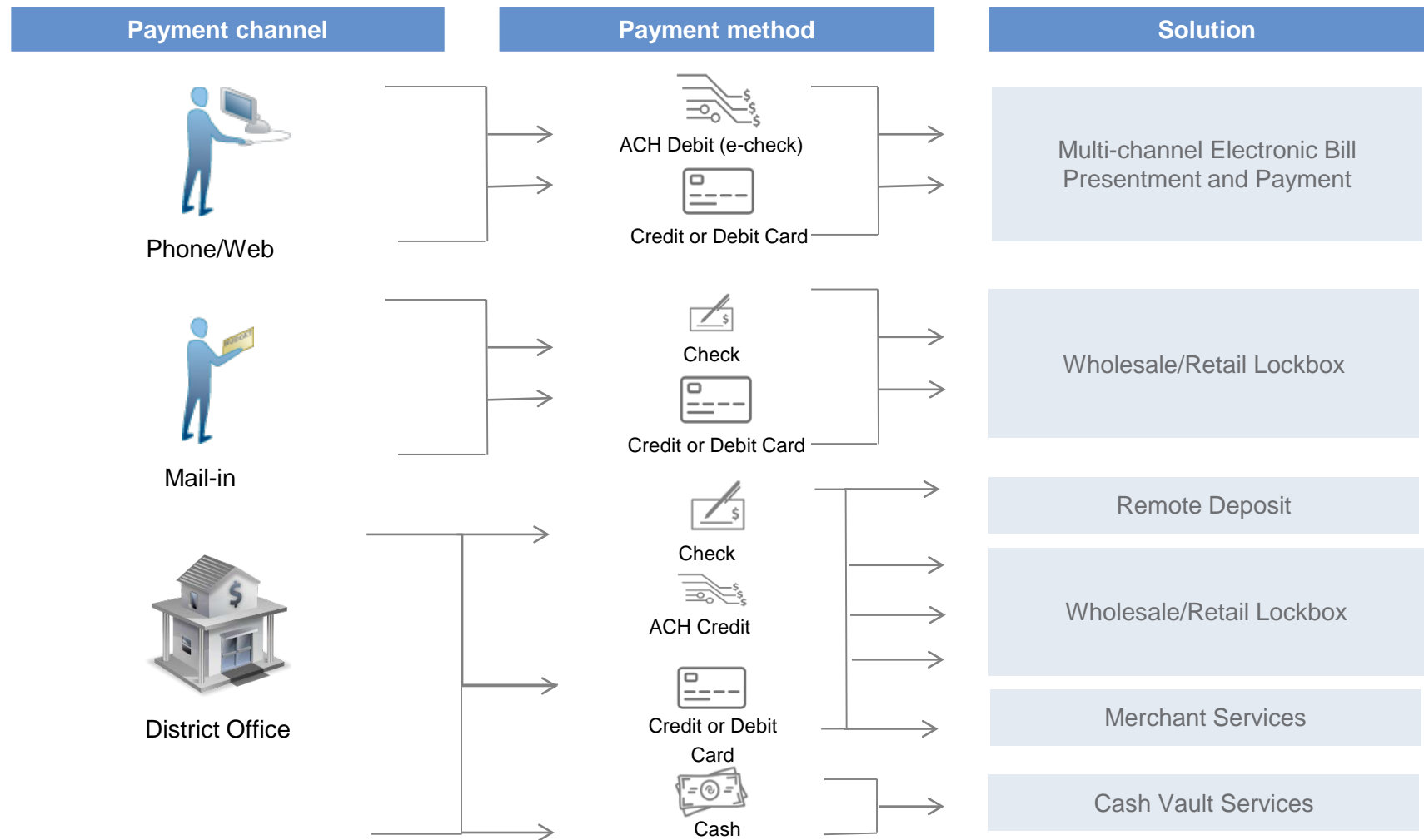
- Remote Check / Remittance Capture
- Wholesale, Scannable Wholesale Lockbox

- Data Transmission – BAI, EDI & Proprietary
- OCR and ICR-based Data Capture

- Data Management & Remittance Association
- Consolidated Reporting of Lockbox, ACH, Wires and Returns
- Receivables Browser

- Remote Deposit Mobile
- Web Portal & Phone
- Card and ACH
- Merchant Services

Leveraging multiple payments methods to lower costs and increase electronic collections



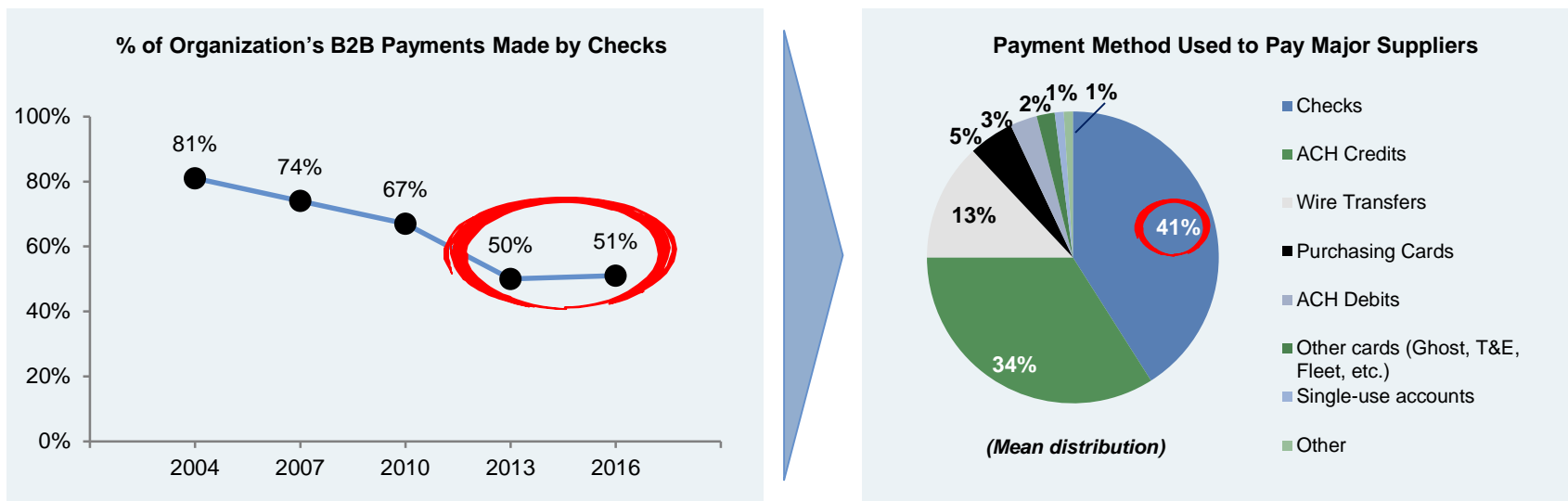
Offering multiple Payment Channels and Payment Methods drives transition to efficient electronic receivables while maintaining constituent convenience

The right solution can help with process improvement, lower cost, and increase e-payments

Obj.	Solution	Description	Benefit
Reduce Paper Float	National Lockbox Network	<ul style="list-style-type: none"> • Network of lockbox processing sites • checks from provider clients receive same-day lockbox deposit 	<ul style="list-style-type: none"> • Reduce collections by 2-5 Days • Broader network vs. in-house or regional providers • Eliminate mail float on check payments
	Virtual Remit	<ul style="list-style-type: none"> • A desktop scanner to clear payments that arrive misdirected to your office without forwarding on to lockbox 	<ul style="list-style-type: none"> • Reduce collections by 2-5 days by scanning checks and docs • Clear electronically as if received into our lockbox • Eliminate courier package costs
	Remote Deposit	<ul style="list-style-type: none"> • An end-to-end processing solution for checks captured via a desk-top scanner or a mobile device 	<ul style="list-style-type: none"> • Reduce collections by 5 days by on-site imaging and clearing • ACH conversion option and reduces clearing costs
Migrate to e-payments	Online Reporting	<ul style="list-style-type: none"> • Online reporting and workflow tool providing a consolidated view of current and long-term rec. and remittance data 	<ul style="list-style-type: none"> • Leverage a single system for all paper and electronic collections • Accelerate exception resolution thus improving workflow • Provide insightful analytics on receivables flows
	E-lockbox	<ul style="list-style-type: none"> • Aggregates your payments across hundreds of online bill payment portals into a single electronic file 	<ul style="list-style-type: none"> • Reduce collections by up to 2-5 days through paper reduction • Improve reconciliation and clearing time • Reduce manual exception processing and collection costs
	Merchant Processing	<ul style="list-style-type: none"> • Our merchant acquirer, Paymentech, supports multiple electronic channels such as credit, debit, ACH, PayPal 	<ul style="list-style-type: none"> • Offer flexible electronic payment options to your customers including recurring, instalment, and deferred billing • Manage fraud
	Web Portal and Phone	<ul style="list-style-type: none"> • A PCI compliant online bill payment and presentment platform that supports web, IVR and call center payments 	<ul style="list-style-type: none"> • Expedite collections through ACH and card remittance • Reduce late payments by allowing customers to schedule payments on or before due date

Payments: Continued focus on electrification with limited results

Check payment volumes remain flat after a period of sustained decline and continue to be a primary instrument for paying suppliers

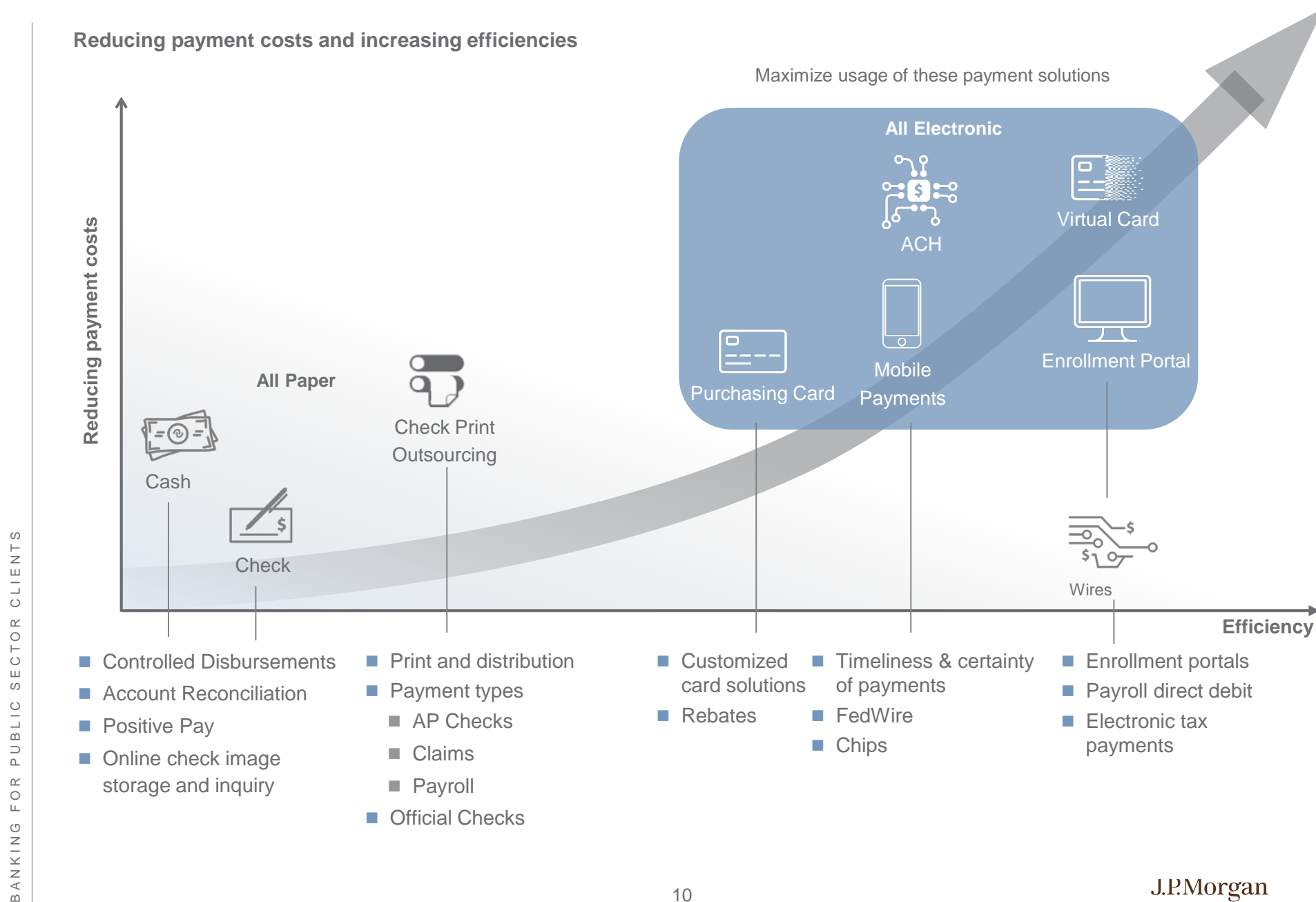


Although check payment volumes continue to be quite significant, treasurers are confident that the majority of supplier payments can be migrated to electronic alternatives over the next three years



Source: Association for Financial Professional, 2016 Electronic Payment Survey, Oct 2016





Payables management: Reducing payment costs and increasing efficiencies



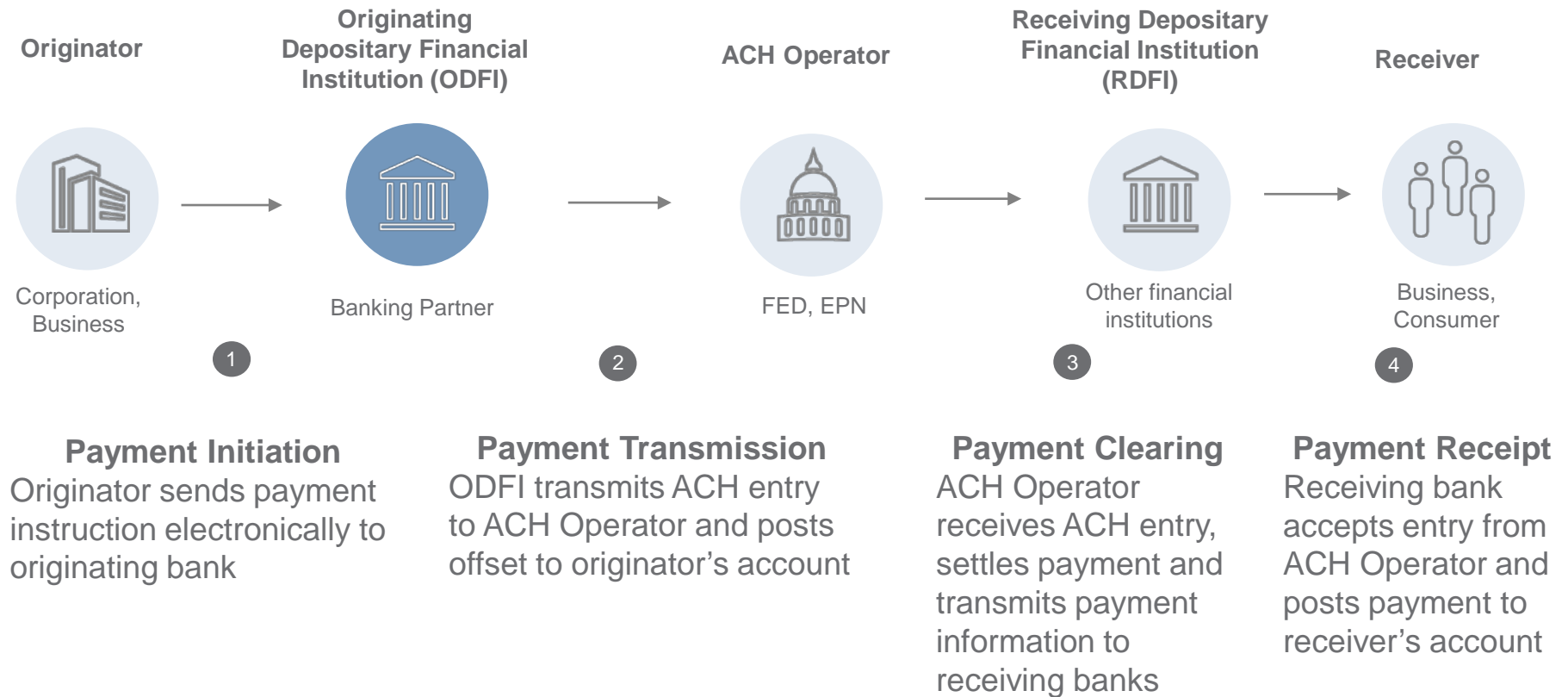
Adoption of payment types connects to the overall strategy and timeline for automation

Payment Type	Payment description	Payment use
Check	<ul style="list-style-type: none"> ■ Most common form of G2B payments ■ Highest cost to process ■ Risk for check fraud 	<ul style="list-style-type: none"> ■ Non-repetitive payments ■ “Un-banked” payments ■ Low sensitivity to settlement date ■ Required by the vendor
Wire	<ul style="list-style-type: none"> ■ Primarily used for time sensitive payments ■ Immediate settlement ■ Higher transaction fee for sender and receiver 	<ul style="list-style-type: none"> ■ Urgent payments needing same day settlement ■ Finality of payment required
ACH	<ul style="list-style-type: none"> ■ Primarily used for high-volume/low-value payments ■ Most cost-effective payment type ■ Provides industry standard payment formats 	<ul style="list-style-type: none"> ■ Next-day/predictable settlement date ■ Repetitive payments ■ Small dollar payments
Card	<ul style="list-style-type: none"> ■ Includes Purchasing and Commercial Card ■ Ability to earn rebates ■ Spend control 	<ul style="list-style-type: none"> ■ Encompasses both T&E and AP spend ■ Recurring payments to vendors who accept card ■ Pre-approved expenses

Benefits of Card Solutions

Purchasing Card (P-Card)		Virtual Card Solutions
Plastic, cardless and ghost/ supplier payment solution		Virtual, electronic, virtual card account payables solution
Eliminate costly manual processing on low value/high frequency spend		Automate higher value spend requiring A/P control or “one-off” transactions
Employee convenience with robust spend controls and added visibility		Benefits of P-Card with the added controls of a check (date, exact amount)
Processing cost savings plus rebate revenue and working capital opportunity		Efficiencies of ACH, plus rebate revenue and working capital opportunity

Transition your payments to ACH



Same Day ACH

NACHA Same-Day ACH Rule Summary

- All receiving financial institutions are mandated to receive Same-Day ACH transactions. Same Day ACH is optional for originators. Originating Financial Institutions will be able to submit Same-Day ACH transactions in two new processing windows.
- Participating banks will be assessed a Network transaction fee for Same-Day ACH items actions sent to the Network.
- Transactions above \$25,000 and IAT transactions are not eligible

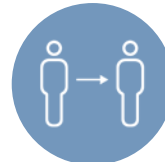
Greater Payment Flexibility

With 70 different Consumer and Business options, Same Day ACH will greatly enhance payment processing options for our clients.



Consumer to Government

- Bill Pay
- eCommerce
- POS check conversion
- Merchant debit
- Collections



Consumer to Consumer

- Person to Person
- Account to Account



Government to Vendor

- Trading partner payments
- Due-date and invoice payments



Government to Consumer

- Payroll
- Refunds

NACHA Implementation Timeline

September 2016

ACH Credits
Morning and Afternoon
Processing Windows
End of Day Receiver Funds
Availability

Phase 1

September 2017

ACH Credits and Debits
Morning and Afternoon
Processing Windows
End of Day Receiver Funds
Availability

Phase 2

March 2018

ACH Credits and Debits
Morning and Afternoon
Processing Windows
5:00 p.m. Receiver Funds
Availability

Phase 3

Check Print Outsourcing

	Your Challenge	How the Check Print Solution can help
Fraud Risk	The need to manage and control access to check stock and the check issuance process	<ul style="list-style-type: none"> ■ Eliminate the need to maintain internal controls around check stock and negotiable checks ■ Automatic integration with Positive Pay eliminates the need for another file and helps ensure that checks issued are valid
Disaster Recovery	Disaster recovery plans are difficult and costly to maintain	<ul style="list-style-type: none"> ■ Solution provides disaster recovery plan for check printing – no need to maintain a back up site or risk delaying payments
Expense Reduction	Per item expense increases as paper check usage declines and fixed costs remain	<ul style="list-style-type: none"> ■ Have your checks printed and mailed in an automated, high speed environment ■ Your organization will benefit from lower postage and per-unit cost on check stock and envelopes
Equipment Maintenance	The cost of upgrading and maintaining equipment	<ul style="list-style-type: none"> ■ Utilize the latest digital printing technologies to deliver accurate, high-quality checks ■ Banking provider maintain and upgrade our check printing equipment regularly
Multiple uses	Multiple check templates to fit your payment needs	<ul style="list-style-type: none"> ■ Utilize check print templates like accounts payable, payroll, claims, royalty, cashier's check

A new payment option for government consumer payments

Mobile transaction origination can help in electronifying your payments to consumers, providing you with a new electronic payment option to disburse payments to constituents, staff and other individuals, while also greatly reducing overhead and payment cost associated with traditional forms of payment. This is especially applicable for non-recurring payments under \$50,000.

Key Features and Benefits



Send consumers a variety of payments via email, including detailed remittance data



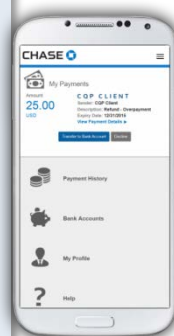
Reduces payment distribution and reconciliation costs and risks associated with checks



Eliminate the burden, expense and risk of maintaining customer remittance information by allowing payer to enter payment information into Banking Provider hosted page



Improve customer experience with faster receipt of electronic payments



Public Sector Applications

- **Tax Refunds:** Eliminate the need for sensitive banking information to disburse refunds
- **Restitution Payments:** Repayment of assets to individuals
- **Reimbursement of Deposits:** Reimburse individuals for utility deposits
- **Jury Payments/Expert Witnesses:** Reduce fraud susceptible checks when making small dollar disbursements
- **Staff Payments & Petty Cash:** Provide non-recurring payments and reimbursements for staff members

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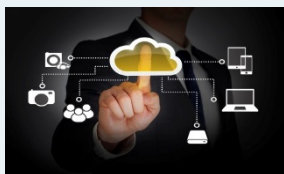
Overview of Current Fraud Landscape

Wholesale fraud landscape is primarily made up of 3 different methods which fraudsters utilize in attempt to gain access to funds

1 Email

Criminals hack email accounts or create similar accounts that appear to be authentic from CEO, CFO, vendors or third parties the victim conducts business with.

The email address is often missing just one letter or character and may use urgent language to trick you into clicking a link that leads to a phony website.



2 Malware

Malware is used to infiltrate, monitor, control and damage a computer. Fraudsters will re-direct victims to fake login pages that look very similar to their internet banking sites and ultimately capture valuable information.



3 Social Engineering

Social Engineers often pose as new employees, help desk workers or vendors and may offer credentials to appear legitimate. Through simple questions, they can piece together information via phone calls, email and casual conversation. Threats can come from anywhere, even former employees.



What we are hearing from our Clients across the globe regarding fraud

Education	<ul style="list-style-type: none">• Want to focus on educating their clients and vendors on the changing environment
Utilization of existing controls	<ul style="list-style-type: none">• Clients are surprised that employees are not using controls that can be leveraged in our systems
Understanding the difference between cyber and fraud	<ul style="list-style-type: none">• Misperception that a system breach must exist for frauds to be executed
Importance of strong payment controls	<ul style="list-style-type: none">• Importance of independent call back verifications were not realized
Understanding the fraud environment	<ul style="list-style-type: none">• Surprised to learn about different types of fraud, specifically the senior manager impersonations
Awareness of what to do if fraud is identified	<ul style="list-style-type: none">• In regards to recovery, not aware of how significant the first 24 hours are after a fraud is executed
Leveraging training	<ul style="list-style-type: none">• Online webinar training offered is extremely useful
Sharing best practices	<ul style="list-style-type: none">• Clients are surprised that JPMC is performing phishing tests on its own internal employees

Managing risk is highly complex in today's payables environment

Risk management



Source: 2013 AFP Payments Fraud and Control Survey

Countering fraud and mitigating risk



Accelerate conversion to electronic payments



Utilize technology to monitor and reconcile transactions



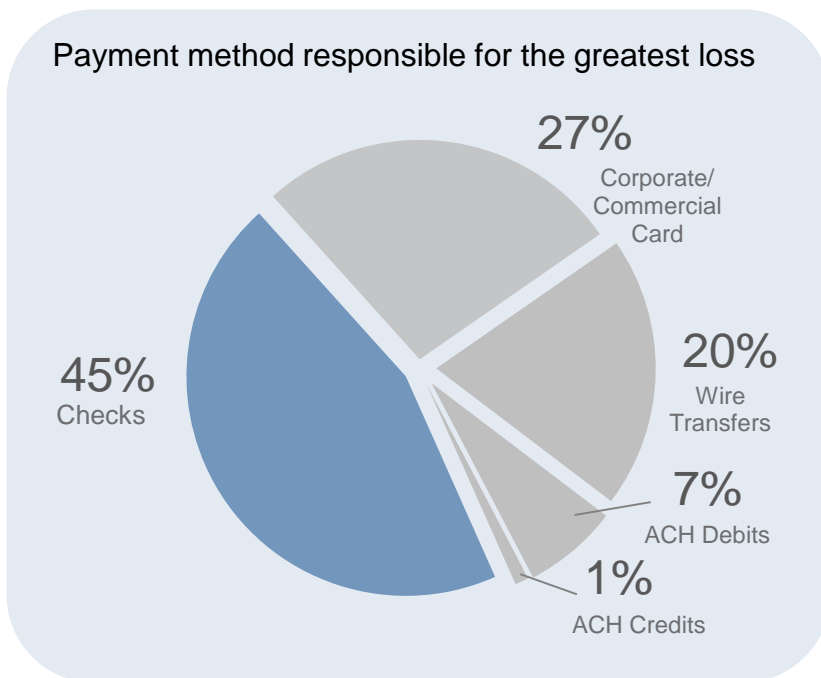
Keep abreast of the latest potential threats



Outsourcing non-key functions i.e. check printing

J.P. Morgan provides tailored risk management solutions to meet your payables requirements.

Despite decline in U.S. check payments, check fraud results in the greatest financial fraud losses



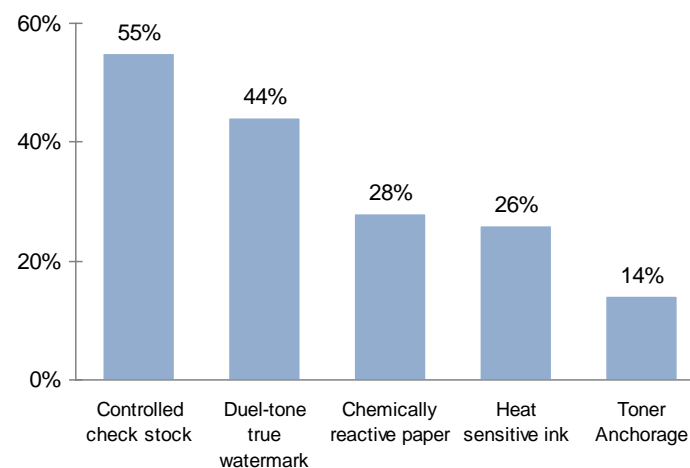
Payment trends

Checks paid volume	24.5 Billion	18.3 Billion	-9.2% CAGR* ↓
Average \$ per check	\$1,291	\$1,410	↑

*Compound Annual Growth Rate

Source: Federal Reserve Payments Study (2013)

Check features most effective in protecting against fraud



Source: 2015 AFP Payments Fraud and Control Survey

Why checks?

Attraction of paper-based crimes

Better quality and availability of technology

- Easier to commit than electronic fraud methods
- Increase in organized, professional fraud ring activity
- Access to scanners, printers, desktop publishing software, and other tools used to print and alter checks
- Weaknesses in the modern image exchange environment

Can you spot what's suspicious with this email?

From: Smith, Joe [mailto:Smith.Joe@yourconnpny.com]

Sent: Wednesday, February 03, 2016 1:01 PM

To: Smith, Jane

Subject: Pending Payment

Hi Jane,

I'm in China traveling for business. I just met with our client, ABC Company, and they did not receive our last payment.

ABC Company

SWIFT Code: 945ddd02e

Account #: 543a987b2c

It is imperative they get paid please resend our payment to them and ensure you follow up with our Bank to have the payment settled by tomorrow. Also, modify our payment instructions to reflect the new information for this client so that there are no issues going forward.

Thank you!

Regards,

Joe Smith

CEO

Your Company

Sent from my mobile device

Can you spot what's suspicious with this email?

From: Smith, Joe [mailto:Smith.Joe@yourconnpany.com]

Sent: Wednesday, February 03, 2016 1:01 PM

To: Smith, Jane

Subject: Pending Payment

The email address should be '@yourcompany'.
The email address is incorrect (the word company is spelled with two 'Ns' instead of an 'M').

Hi Jane,

Very familiar greeting

I'm in China traveling for business I just met with our client, ABC Company, and they did not receive our last payment.

ABC Company
SWIFT Code: 945ddd02e
Account #: 543a987b2c

Stating "traveling" or "away from the office" could be a red flag

It is imperative they get paid please resend our payment to them and ensure you follow up with our Bank to have the payment settled by tomorrow. Also, modify our payment instructions to reflect the new information for this client so that there are no issues going forward.

Thank you!

Regards,
Joe Smith
CEO
Your Company

Urgent request to send payment again and
modify payment instructions is highly
suspicious

Sent from my mobile device

Can you spot what's suspicious with this email?

From: Smith, Amy [mailto:asmith@globalsuppliers.com]
Sent: Wednesday, October 11, 2016 8:21 PM
To: Smith, Bob
Subject: New Payment Instructions

Hi Bob,

Urgent! As your vendor, I wanted to make you aware that Global Suppliers have chnaged banks. I've provided the new Bank, routing instructions, and account details below. Please update your records immediately for all payments going forward as our previous account is no longer active.

Global Suppliers
SWIFT Code: AAAA11
Account #: 123456789

Please note that our office will be on holiday the next 2 weeks so if you are not able to reach anyone, that is why.

Regards,

Amy Smith
Global Suppliers

Red Flags in an Email

The email address should be '@globalsuppliers'.
The email address is incorrect (the word global has two "Ls").

From: Smith, Amy [mailto:asmith@globallsuppliers.com]
Sent: Wednesday, October 11, 2016 8:21 PM
To: Smith, Bob
Subject: New Payment Instructions

Hi Bob,

Asking to update vendor routing instructions urgently

Urgent! As your vendor, wanted to make you aware that Global Suppliers have **chnaged** banks. I've provided the new Bank, routing instructions, and account details below. Please update your records immediately for all payments going forward as our previous account is no longer active.

Global Suppliers
SWIFT Code: AAAA11
Account #: 123456789

Incorrect spelling and grammar

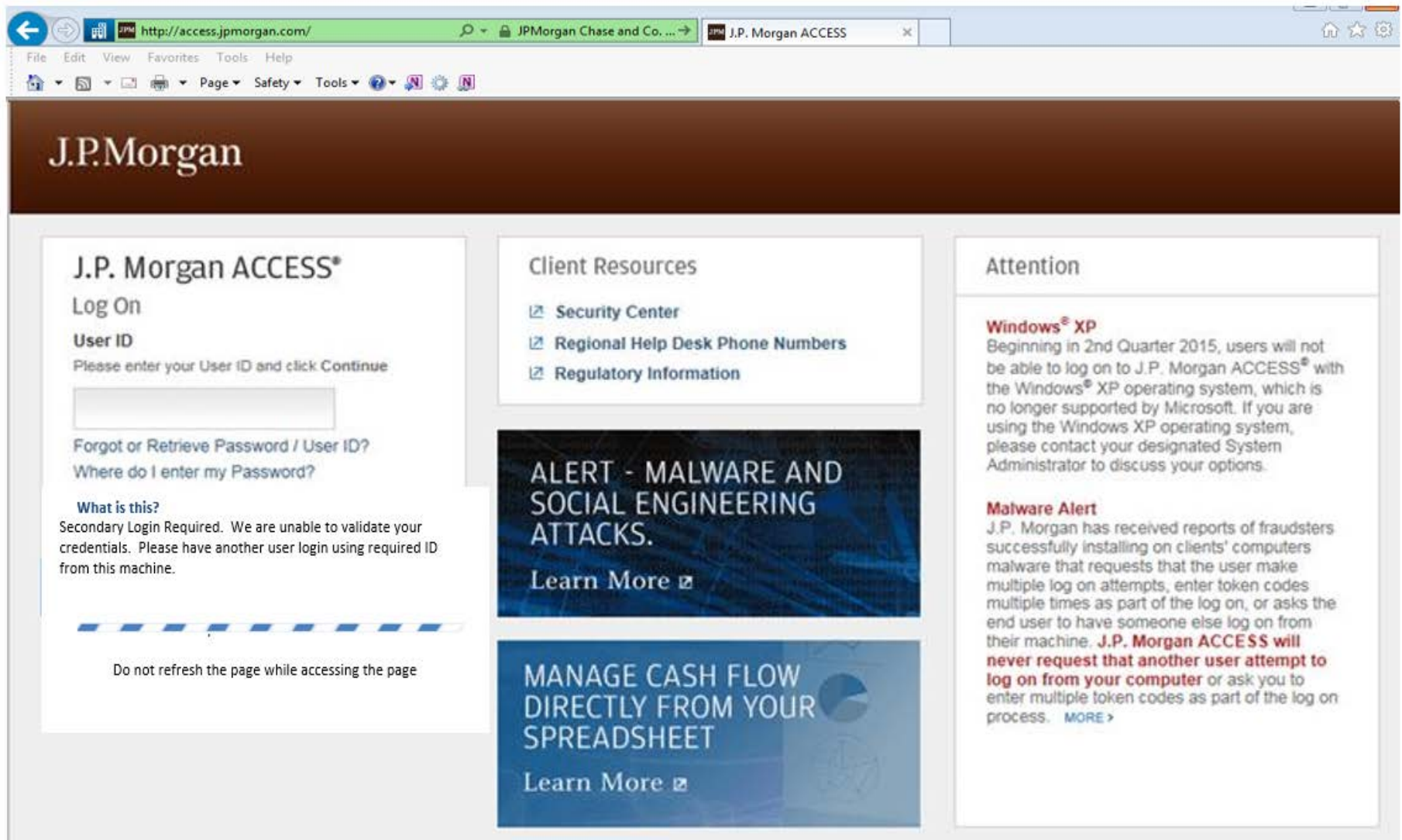
Please note that our office will be on holiday the next 2 weeks so if you are not able to reach anyone, that is why.

Regards,

Amy Smith
Global Suppliers

Noting they will be on holiday and providing rationale as to why someone may not be able to be reached when a call back is performed to verify the updated instructions

Can you spot what's wrong with this ACCESS webpage?



Red Flags on an ACCESS webpage

The screenshot shows a web browser window with the address bar displaying `http://access.jp.morgan.com/`. A red box highlights the missing 'S' in the URL, indicating a security certificate issue. The page title is "J.P. Morgan ACCESS". The main content area includes a "Log On" section with a "User ID" field and a "Forgot or Retrieve Password / User ID?" link. A red box highlights a message: "Secondary Login Required. We are unable to validate your credentials. Please have another user login using required ID from this machine." Another red box highlights a message: "JPMC would never ask for another user to login from the same machine". The page also features a "Client Resources" section with links to "Security Center", "Regional Help Desk Phone Numbers", and "Regulatory Information". A "Windows XP" alert is visible, stating that users will not be able to log on to J.P. Morgan ACCESS with the Windows XP operating system starting in 2nd Quarter 2015. A "MANAGE CASH FLOW DIRECTLY FROM YOUR SPREADSHEET" banner is also present.

Missing S indicates security certificate is missing

Secondary Login Required. We are unable to validate your credentials. Please have another user login using required ID from this machine.

JPMC would never ask for another user to login from the same machine

Windows® XP
Beginning in 2nd Quarter 2015, users will not be able to log on to J.P. Morgan ACCESS® with the Windows® XP operating system, which is no longer supported by Microsoft. If you are using the Windows XP operating system, please contact your designated System Administrator to discuss your options.

Do not refresh the page while accessing the page

MANAGE CASH FLOW DIRECTLY FROM YOUR SPREADSHEET
Learn More

Options to help solve challenges

Cost Pressures

- Increase straight-through processing
- Eliminate paper
- Migration to more electronic methods
- Shared Services for specific functions

Managing Cash Flow

- Staff allocation to value add functions
- Reduce all-in cost
- Lower risk profile

New Technology

- Mobile payment adoption
- EMV acceptance

Engage Banking Partners

- Technology & systems
- Compliance and regulation
- Working capital management
- Cash management, cash pooling structures
- Cash flow forecasting