

Modern Payment Platforms and Strategic Insights

Immediate Payments are Transforming Business Processes and Experiences with Students, Suppliers and Employees

Association of Independent Colleges and Universities of Pennsylvania
April 13, 2022



Recipe for Success

Convergence of Payments and Real Time Processing

Emerging faster payment solutions (such as RTP and Zelle), combined with real time processing and integration through API connectivity, are strongly aligned with broader preferences for toward **immediacy** and **interconnected** systems



And are helping organizations **interrupt** long-standing business practices and create transformative, digital experiences ...

Hungry for Results

Focus on Digital Transformation



Primanti Bros Sandwich

Hungry for Results

Digital Transformation is Powering Organizations to Compete and Win



Digital Transformation is Top-of-Mind



53% of surveyed CIOs identified enterprise-level digital transformation as the top initiative on corporate agendas¹

Effective Digital Adoption Significantly Increases Likelihood of Success



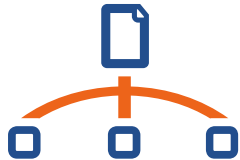
Technology leaders are almost **2X** as likely to realize enterprise objectives than their peers²

IT Investment is Prioritizing the Customer Experience



45% of surveyed CIOs identified Customer Experience and Engagement as the key area attracting business-managed IT investment¹

Application Programming Interfaces (APIs) are Driving Transformation



83% of organizations consider APIs to be a critical part of their ongoing business strategy³

How would you rate your organization's overall digital readiness ...

¹KPMG: CIO Survey (2020) ²The Hackett Group: Key Issues Study (2021) Technology leaders are the top quartile of respondents based on a composite score factoring in adoption of process automation, data and analytics and emerging technologies, and the extent to which these technologies met business objectives. ³Cloud Elements: The State of API Integration (2020)

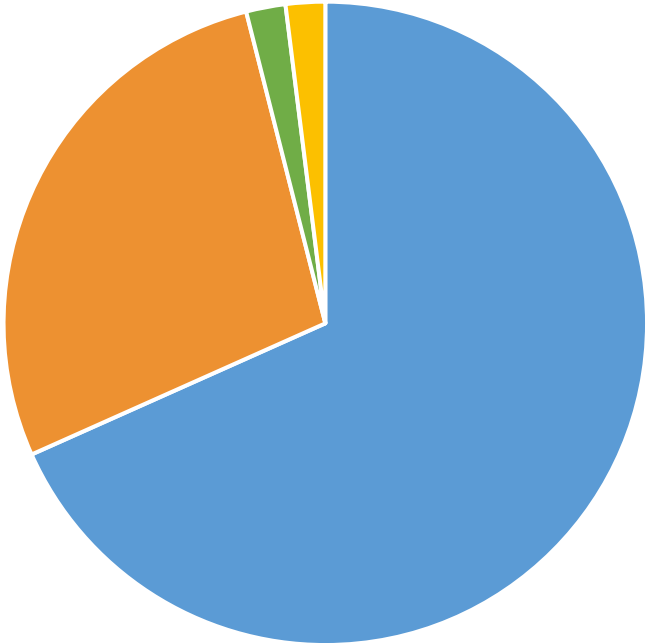
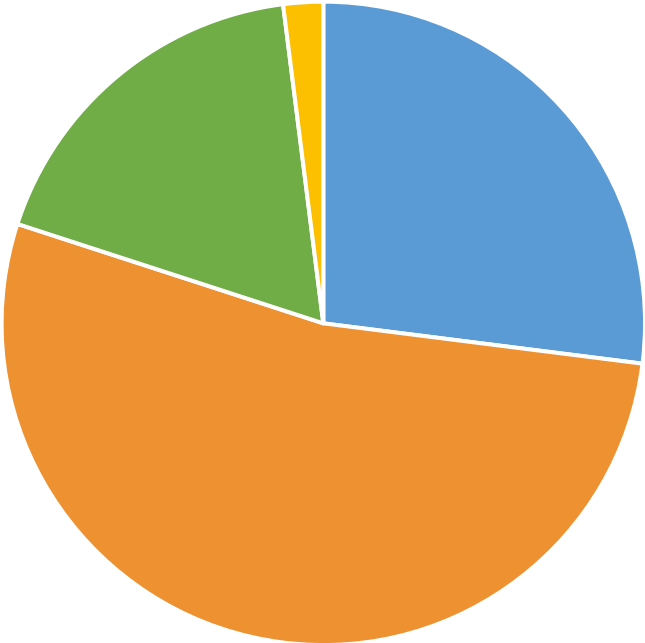
Hungry for Results

Higher Education Digitizing to Enhance Experiences and Improve Outcomes



Was your institution engaged in some level of digital transformation prior to COVID-19?

Is your institution now engaged in some level of digital transformation because of COVID – 19?



■ Significantly ■ Somewhat ■ Very Little ■ Not at All

■ Significantly ■ Somewhat ■ Very Little ■ Not at All

While the primary focus has been on impacting direct educational experiences, college and universities are now also looking to operating systems and business practices

¹University Business / Jenzabar: COVID – 19 is Driving Digital Transformation in Higher Ed (2021)

Key Ingredients

Accelerating Change is Creating Opportunity



Key Ingredients

Emerging Payment Modalities – Each Offering Different Attributes / Utility



	Real-Time Payments	Zelle	Push to Debit (P2D)	Same-Day ACH	Wire
Payment Method	Credits only	Credits only	Credits only	Credits or Debits	Credit
Target	B2B /B2C	B2C	B2C	B2B / B2C	B2B / B2C
Finality	Irrevocable	Reversals and Returns may be requested	Irrevocable	Reversals and Returns may be requested	Irrevocable
Remittance Data	140 characters	200 characters	None	9999 addenda records, 94 characters each	9,000 characters
Network Availability	24x7x365	24x7x365	24x7x365	1:45pm EST	5:57pm EST
Transaction Limit	\$1,000,000 (no limit if on-us)	None	\$50,000	\$1,000,000	None
Payee Information	Routing # Account #	Email	16-digit Debit Card Number	Routing # Account #	Routing # Account #
Settlement	15 seconds	5 minutes	10 seconds	Same Day	Near Real-time
Membership	RTP Network connection	Open to all banks	Visa/MasterCard bank issued cards	--	--

Note: Same Day ACH and RTP transaction limits are scheduled to increase from \$100,000 to \$1M in March and April, respectively

We are at a point of operational ubiquity for these solutions



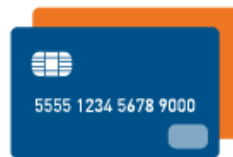
We've come a long way since PNC processed one of the first RTP transactions (11/14/17)



- **61%** of all US accounts currently accessible – technical accessibility increases to **75%** via TPSPs¹
- 38M transactions (\$16B) processed in Q4 2021 – 13% increase over prior quarter



- **1.8** billion payments processed in 2021 – increase of 49% over 2020²
- Payment value double that of closest P2P competitor
- Increasing business payments – up 162%



- Push to Debit solutions can deliver payments to **97%** of domestic Visa and MasterCard accounts³

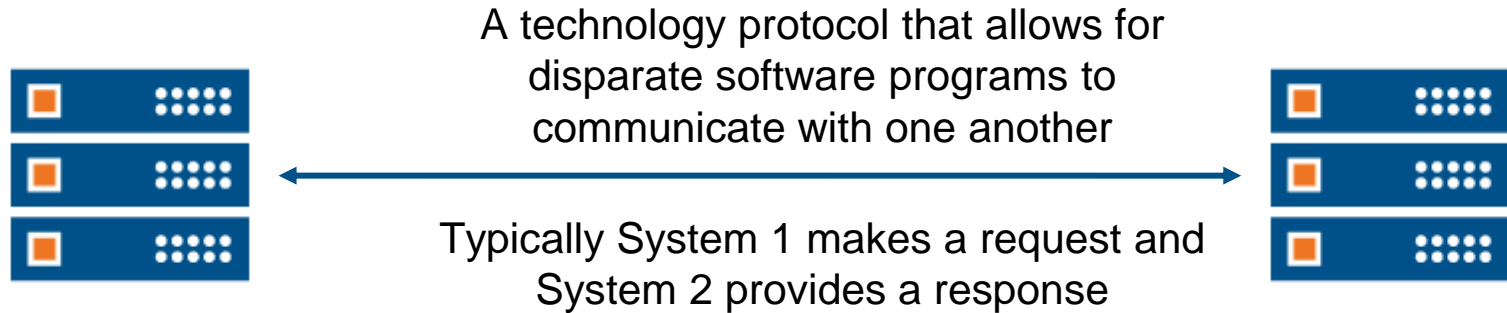
¹The ClearingHouse (2022)

²Zelle (2022)

³OPEN (2022)

Key Ingredients

API's Driving Convergence Of Processing With Real Time Connectivity



Banks Are Approaching API's From Varying Perspectives

Utilize API's to more seamlessly connect internal system operations

Enable development and integration with third party solutions

Create discrete capabilities and solutions to collect, pay and receive information

Key Ingredients

Examples of API's Impacting Financial Processes



Information Reporting Embedded in ERP

Banking Rules

Category	Amount	Match
SAVING BALANCE	\$160,000.00	Monkeys age
BANK BALANCE	\$-6,069,900.00	Monkeys age
SAVING BALANCE	\$1,633,873.95	Monkeys age
IN QUICKEBOOKS	\$240,000.00	6
IN QUICKEBOOKS	\$-6,069,900.00	✓
IN QUICKEBOOKS	\$-424,528.69	12

Take a shortcut! Discover all the ways you can save time in QuickBooks. It's all in this video (2:45)

We were able to get transactions from ZZ-CCNP-NEW starting from 03/11/2019. You can match items to existing records or add them as new records. Need more data?

Batch actions	DESCRIPTION	PAYEE	CATEGORY OR MATCH	SPENT	RECEIVED	ACTION
Accept Selected	Money Transfer Cr		Uncategorized Income		\$25,000.00	Add
Exclude Selected	Money Transfer Cr		Uncategorized Income		\$16,000.00	Add
Modify Selected	Money Transfer Db		Uncategorized Expense	\$15,000.00		Add

Invoice Automation into NetSuite

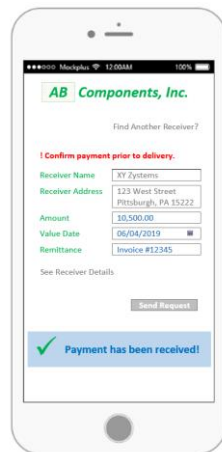
ORACLE NETSUITE

Confirmation
Transaction successfully saved

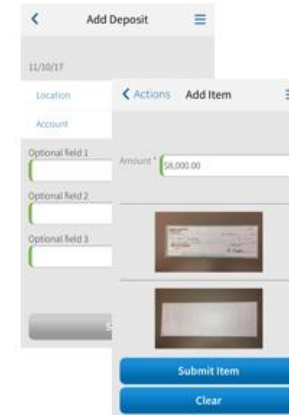
Bill Payment
24 Bayer Health Care

PAID IN FULL

Payment on Delivery



Mobile Check Deposit



Key Ingredients

Changing Preferences Toward Immediacy and Ease of Use



The Pandemic Accelerated Consumer Digital Payment Utilization



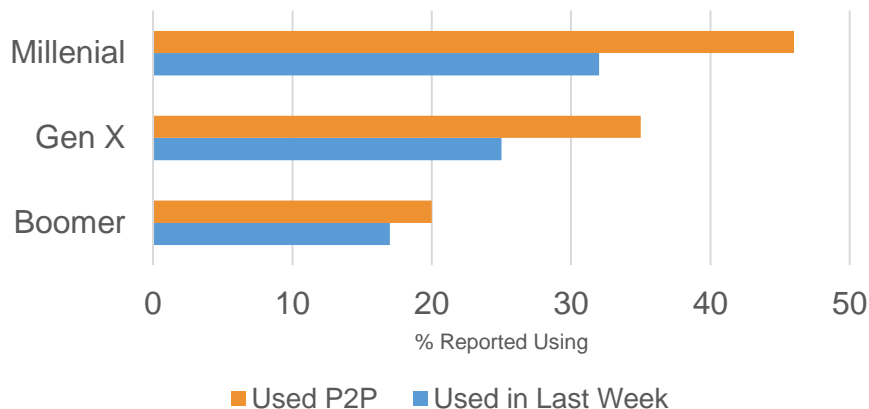
82% of American consumers reported using digital payments in 2021¹

Digital Wallets Casting a Larger Shadow over Payments



The percentage of digital wallet payments as a share of overall card payments increased more than **5X** from 2017 through 2020²

Younger Generations are Driving Peer to Peer Payment Network Growth³



Millennial Business Leaders are Leading Payments Change



Millennial led small and medium businesses have reported **2X** the increase of Zelle, Venmo and PayPal payments as those led by Baby Boomers⁴

¹McKinsey & Co: New Trends in US Consumer Digital Payments (2021)

²Federal Reserve: Findings from the Federal Reserve Payments Study (2021)

³DUE – How Age Affects Preferred Payment Methods (2022)

⁴FAiteNovarica: SMB Payments and Millennials (2022)

The Perfect Recipe

Actionable Strategies ...



Pranti's Burnt Almost Tort

The Perfect Recipe

One size doesn't fit all



- Think beyond wire transfer replacement for these solutions ... look where attributes such as enhanced information and transparency are providing value
- While these could fit for selected “batch” processes, they likely do not resonate for core payable and payroll processes
 - Speed of payment is likely not the driver here
 - There could be a fit for precision to limit Just in Time disruption of supply chain or as part of broader payment network strategy combining payment with acceleration?
- Focus on transaction streams or use cases creating differentiating experiences
- Target remaining check-based transaction stream subsets where the value and utility of these new modalities delivers a desired impact

The Perfect Recipe

Dining in or Taking Out




Retain Control



Eligibility & Verification APIs

Enables you to decision and originate payments through desired channels

Outsource Ultimate Payment Channel



Intelligent Routing

Helps determine the appropriate payment type based on preset parameters established by your organization



Consumer Driven Experience

Provides the recipient designate desired payment modalities including Zelle, Direct Deposit, Direct to Debit or check



Multi-Directional eWallets

Feasting on Left-overs - capture / maintain banking information ... facilitating future collection and payment activities

The Perfect Recipe

Leverage Differentiating Solution Attributes



The RTP Network also provides for **Request for Payment** messaging – requests can be delivered to individuals or organizations with subsequent payment including reference information from the request

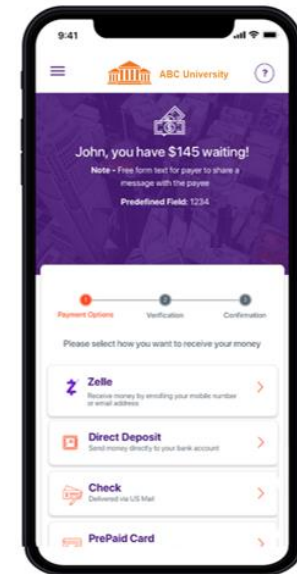


Real Time Payments can incorporate **Remittance Advice** – providing up to 4,000 characters of ISO structured information



Request for Information messaging allows for collaboration and communication of details associated with a Real Time Payment credit

Recipient Controlled Experiences allow student to select desired form of payment



Featured Items

Use Cases in Place and Being Pursued TODAY



Pierogies

Featured Items

Higher Education Use Cases



- Student / Parent Refunds
- Lunch, Program and Other Ancillary Refunds
- Scholarship and Grant Distributions
- Tuition Payments – using RFP

- Emergency Requests
- Critical Supplier Deliveries



- Exception Processing (emergency payroll)
- Termination Pay
- Earned Wage Advance

- Expense / Travel Reimbursements
- Athletic Program / Per Diem Payments
- Speaker Fees



Avoiding Indigestion

Key Considerations and Potential Obstacles ...

Avoiding Indigestion

Engage All Stakeholders



Potential impacts on student satisfaction, employee retention and supplier relationships resonate well beyond Treasury and Finance



These are more than pure payment conversations



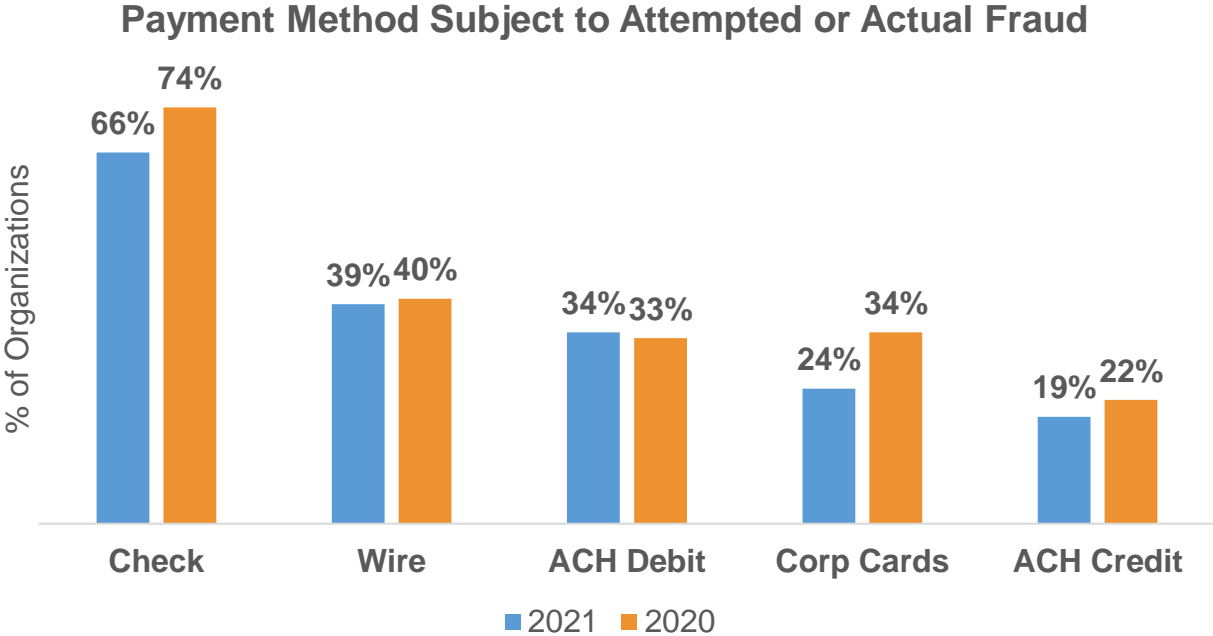
Assess your I/T partner's readiness for change



Initiatives need to be considered in relation to other projects – importance of valuing outcomes to set priority

Avoiding Indigestion

Don't Let Faster Payments Equal Increased Fraud¹



- **Wire Transfer** remains the dominate payment channel linked to BEC - **43%** of organizations had BEC attempts linked to Wire Transfer (from high of 60% in 2016) – points to value placed on **immediacy** of transfer
- 34% or organizations had BEC attempts linked to ACH Credit and 14% linked to Check payments – narrowing gap to Wire attributable to **increased scrutiny** on Wire Transfers

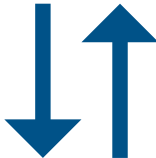
¹AFP: Payments Fraud and Control Survey Report (2021)

Avoiding Indigestion

Importance of Maintaining a Strong Internal Control Environment



**Masterfile Control
– new and
updates**



**Segregation of
Duties**



**Approval and
Execution**



**Leverage Bank
Risk Mitigation
Services**



**Cyber Best
Practices**



**Timely
Reconciliation**

Avoiding Indigestion

Focus on Reconciliation



Consider Potential Differences Between Settlement and Posting Dates



... and How These Transactions Will Be Presented in Information Reporting and BAI files

Importance of finding the right partner for your digital transformation journey



Modernized payment infrastructure – providing scalability, integration, transparency, tracking and control



Proven ability to **innovate** and **execute**



Additional Menu Items



STRIP DISTRICT • 412.281.4584 • 60 21st St • Pittsburgh, PA 15222

Egg Combos

Served with your choice of an Lysenette potatoes, French fries or french toast (available hot up to noon) & toast

MEAT & EGGS – 2 eggs any style with your choice of double smoked, thick-slice bacon, hand-cut hash, sausage links or turkey sausage patties

RELBASA & EGGS – 2 eggs any style with gulfed hashbrowns

2 EGGS – any style

Omelets

Served with your choice of an Lysenette potatoes, French fries or french toast (available hot up to noon) & toast

CHEESE OMELET – Choice of American, Swiss or cheddar

MEAT & CHEESE OMELET – Choice of beef, sausage or ham

WESTERN OMELET – ham, pepper, & onion

CORNED BEEF & SWISS OMELET

SPINACH & FETA OMELET

VEGGIE OMELET – tomato, onion, pepper, & mushrooms

MUSHROOM & CHEESE OMELET

BROCCOLI & CHEDDAR OMELET

EGG WHITES only:

CHEESE – American, Swiss or cheddar

SHRIMP – fresh mushrooms, onion, tomato, onion, pepper, mushrooms, broccoli

STEAK OMELET – onion

STIR FRY – beef, onion, sausage, ham, turkey sausage, cheese or ham

ADD CHICKEN OR TURKEY?

EGGS & CHEESE SANDWICH

With hash, sausage or ham

Served on butter, wheat, rye, English-muffin or bagel

Fan Favorites

Served with your choice of an Lysenette potatoes, French fries or french toast (available hot up to noon) & toast

TEX-MEX OMELET – Cheddar sausage, cheddar cheese and salsa, topped with guacamole & sour cream, served with Lysenette potatoes & toast

GARL'S FAVORITE EGGS – lightly scrambled, topped with cream cheese & sautéed, served with Lysenette potatoes & toast

Homemade Hash
Served with 2 eggs any style & toast or french toast

CHORIZO HASH – Lysenette potatoes mixed with chorizo sausage & jalapeno, topped with melted cheddar & sour cream

PITTSBURGH HASH – Lysenette potatoes mixed with hashbrowns & mushrooms, topped with Swiss

CORNED BEEF HASH – Lysenette potatoes mixed with corned beef

THE MORNING-AFTER BREAKFAST SPECIAL
2 eggs, your choice of ham, bacon, or sausage & hashbrowns
Substitute specialty hashbrowns extra

CRISANT FRENCH TOAST
Crispy french toast in cinnamon-sugar egg batter & topped with cream cheese & walnuts

BELGIAN WAFFLE
With walnuts, chocolate chips, bananas, strawberries or blueberries extra

Sides

Double smoked, thick-sliced bacon, hand-cut hash, cheddar potatoes, ketchup, sausage links or turkey sausage patties

Corned beef hash

Potato hash

Cheddar hash

Famous Lysenette potatoes 3

Extra egg

Bagel or english muffin

With cream cheese extra

Toast – butter, white wheat, rye or onion

Full loaf (served hot)

Side of strawberries

Banana

Specialty Hotcakes
Creme-Style

STRAWBERRY HOTCAKES – Stuffed with fresh strawberries, brown sugar, sour cream & topped with whipped cream

BLUEBERRY HOTCAKES – Stuffed with blueberries, brown sugar, sour cream & topped with whipped cream

CHOCOLATE CHIP BANANA HOTCAKES – Stuffed with bananas, chocolate chips & whipped cream

BANANA WALNUT HOTCAKES – Stuffed with bananas, walnuts & whipped cream

Hotcakes, French Toast & Waffles

PAMELA'S FAMOUS CREPE-STYLE HOTCAKES
Creme-Style

With meat – extra

Choice of meat – double smoked, thick-sliced bacon, hand-cut hash, sausage links or turkey sausage patties

CREPE-STYLE SHORT STACK HOTCAKES
Creme-Style

With meat – extra

Choice of meat – double smoked, thick-sliced bacon, hand-cut hash, sausage links or turkey sausage patties

FRENCH TOAST **With meat** – extra

Choice of meat – double smoked, thick-sliced bacon, hand-cut hash, sausage links or turkey sausage patties

CALIFORNIA FRENCH TOAST

Home-style whole wheat crust bread dunked in cinnamon-sugar egg batter

Topped with walnuts, chocolate chips, bananas, strawberries or blueberries extra

Belgian Waffle

With walnuts, chocolate chips, bananas, strawberries or blueberries extra



Additional Menu Items

Confidently Knowing Who You Are Transacting With

Stakeholder

Event

Verification

Action



Students



Employees



Suppliers

New Account Set-up

Account Change

Verify Account

Confirm the existence, status and other key data points regarding known U.S. bank accounts

Authenticate Accountholder

Compare inquiry data against signature data from participating U.S. banks



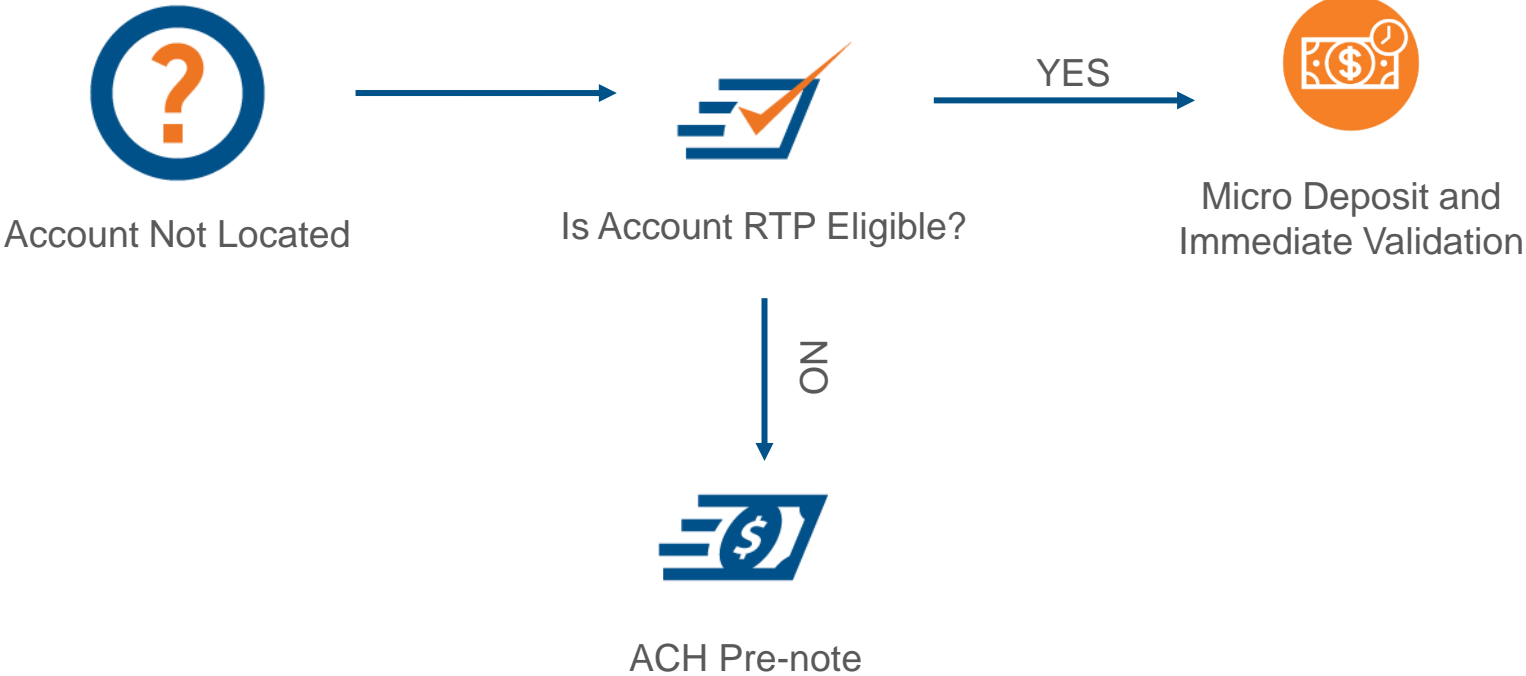
Process or Reject

Additional Menu Items

Extending Verification Coverage



Not all banks, credit unions and other FI's contribute account data ...



Additional Menu Items

Alternatives to International Wire Transfers

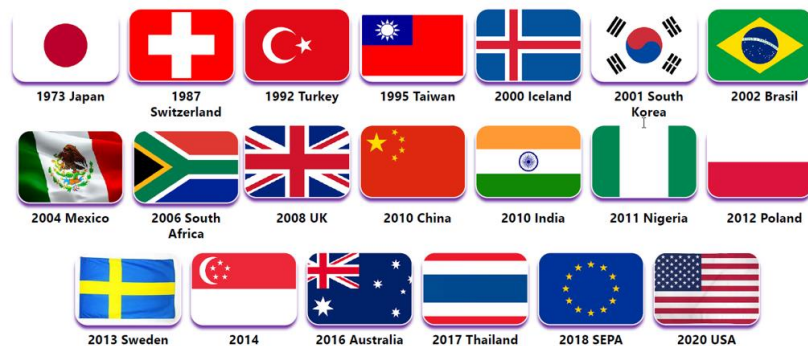
International Wire Challenges (beyond cost): settlement timing and ultimate settlement amount uncertainty

Now

Leverage traditional ACH processing options to connect to regional International Low Value systems

On The Way

Interoperability with other regional Faster Payment Networks



Immediate Cross-Border Payments (IXB) proof of concept featuring The Clearing House, SWIFT and EBA Clearing (10/21)

Thanks for stopping by ...

open



Treasury Management Platform



Continuously
Innovating
Technology



Teams of
Experienced
Professionals



Driving
Business
Performance

Access Through a Variety of Channels



Online



File
Transfer



ERP/TMS
Connectors



API

Where You've Been

Lockbox

Electronic
Invoice
Presentment

Prenote,
Micro Deposit,
Phone Call

Electronic
Payments

Integrated
Payables

Invoice
Automation

Where We Can Take You

Advanced
Receivables

Payment
Gateway

Account
Verification

Immediate
Payments

Intelligent
Routing

Electronic
Invoicing

Traditional and Virtual Account Management

Helping You Meet Your Business Needs

PNC, PNC Bank, ACHIEVEMENT, PINACLE, Working Cash, ActivePay, Global Trade Excellence, Vested Interest, Midland Loan Services, Enterprise!, CMBS Investor Insight, Portfolio Investor Insight, Borrower Insight, Shared Servicing, PNC Riverarch Capital, and PNC Erievue Capital are registered marks of The PNC Financial Services Group, Inc. ("PNC"). PNC Retirement Solutions is a service mark of PNC.

Bank deposit, treasury management and lending products and services, and investment and wealth management and fiduciary services, are provided by PNC Bank, National Association ("PNC Bank"), a wholly-owned subsidiary of PNC and **Member FDIC**. Certain fiduciary and agency services are provided by PNC Delaware Trust Company. Foreign exchange and derivative products (including commodity derivatives) are obligations of PNC Bank. Equipment financing and leasing products are provided by PNC Equipment Finance, LLC, a wholly-owned subsidiary of PNC Bank. Energy financing is provided by PNC Energy Capital LLC, a wholly-owned subsidiary of PNC Equipment Finance, LLC. Aircraft financing is provided by PNC Aviation Finance, a division of PNC Equipment Finance, LLC. Asset-based lending is provided by PNC Business Credit, a division of PNC Bank and PNC Financial Services UK Ltd. (an indirect wholly-owned subsidiary of PNC Bank) in the United Kingdom. Specialty finance products are provided by Steel City Capital Funding, a division of PNC Bank. Merchant services are provided by PNC Merchant Services Company. Direct equity investing and mezzanine financing are conducted by PNC Capital Finance, LLC through its PNC Riverarch Capital, PNC Mezzanine Capital and PNC Erievue Capital divisions. Investment banking and capital markets activities are conducted by PNC through its subsidiaries PNC Bank, PNC Capital Markets LLC, Harris Williams LLC, Harris Williams & Co Ltd. and Solebury Capital LLC. Services such as public finance investment banking services, securities underwriting, and securities sales and trading are provided by PNC Capital Markets LLC. Merger and acquisition advisory and related services are provided by Harris Williams LLC and Harris Williams & Co. Ltd. Equity capital markets advisory and related services are provided by Solebury Capital LLC. PNC Capital Markets LLC, Harris Williams LLC and Solebury Capital LLC are registered broker-dealers and members of FINRA and SIPC, and Harris Williams & Co. Ltd is authorized and regulated by Financial Services Authority (FRN No. 540892). Harris Williams & Co is the trade name under which Harris Williams LLC and Harris Williams & Co. Ltd. conduct business. Retail brokerage services and managed account advisory services are offered by PNC Investments LLC, a registered broker-dealer and a registered investment adviser and member of FINRA and SIPC. Annuities and other insurance products are offered through PNC Insurance Services, LLC. PNC Bank is not registered as a municipal advisor under the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Act"). Investment management and related products and services provided to a "municipal entity" or "obligated person" regarding "proceeds of municipal securities" (as such terms are defined in the Act) will be provided by PNC Capital Advisors, LLC, a wholly-owned subsidiary of PNC Bank. PNC Bank and certain of its affiliates including PNC TC, LLC, an SEC registered investment advisor wholly-owned by PNC Bank, do business as PNC Real Estate. PNC Real Estate provides commercial real estate financing and related services. Through its Tax Credit Capital segment, PNC Real Estate provides lending services, equity investments and equity investment services relating to low income housing tax credit ("LIHTC") and preservation investments. PNC TC, LLC provides investment advisory services to funds sponsored by PNC Real Estate for LIHTC and preservation investments. Registration with the SEC does not imply a certain level of skill or training. This material does not constitute an offer to sell or a solicitation of an offer to buy any investment product. Risks of each fund are described in the funds' private placement memorandum or other offering documents.

Important Investor Information: Securities and insurance products are:
Not FDIC Insured • Not Bank Guaranteed • Not A Deposit
Not Insured By Any Federal Government Agency • May Lose Value

In Canada, PNC Bank Canada Branch, the Canadian branch of PNC Bank, provides bank deposit, treasury management, lending (including asset-based lending through its Business Credit division) and leasing and lending products and services (through its Equipment Finance division). Deposits with PNC Bank Canada Branch are not insured by the Canada Deposit Insurance Corporation. Deposits with PNC Bank Canada Branch are not insured by the Federal Deposit Insurance Corporation, nor are they guaranteed by the United States Government or any agency thereof. In the event of the failure of PNC Bank, deposits with PNC Bank Canada Branch would be treated as unsecured general liabilities, and creditors would be considered general creditors of PNC Bank.

Lending and leasing products and services, as well as certain other banking products and services, require credit approval.

PNC does not provide legal, tax or accounting advice unless, with respect to tax advice, PNC Bank has entered into a written tax services agreement. PNC does not provide investment advice to PNC Retirement Solutions and Vested Interest plan sponsors or participants.

©2017 The PNC Financial Services Group, Inc. All rights reserved.

