

Evolution of Payments and the Impact on your Organization

Trends to Watch

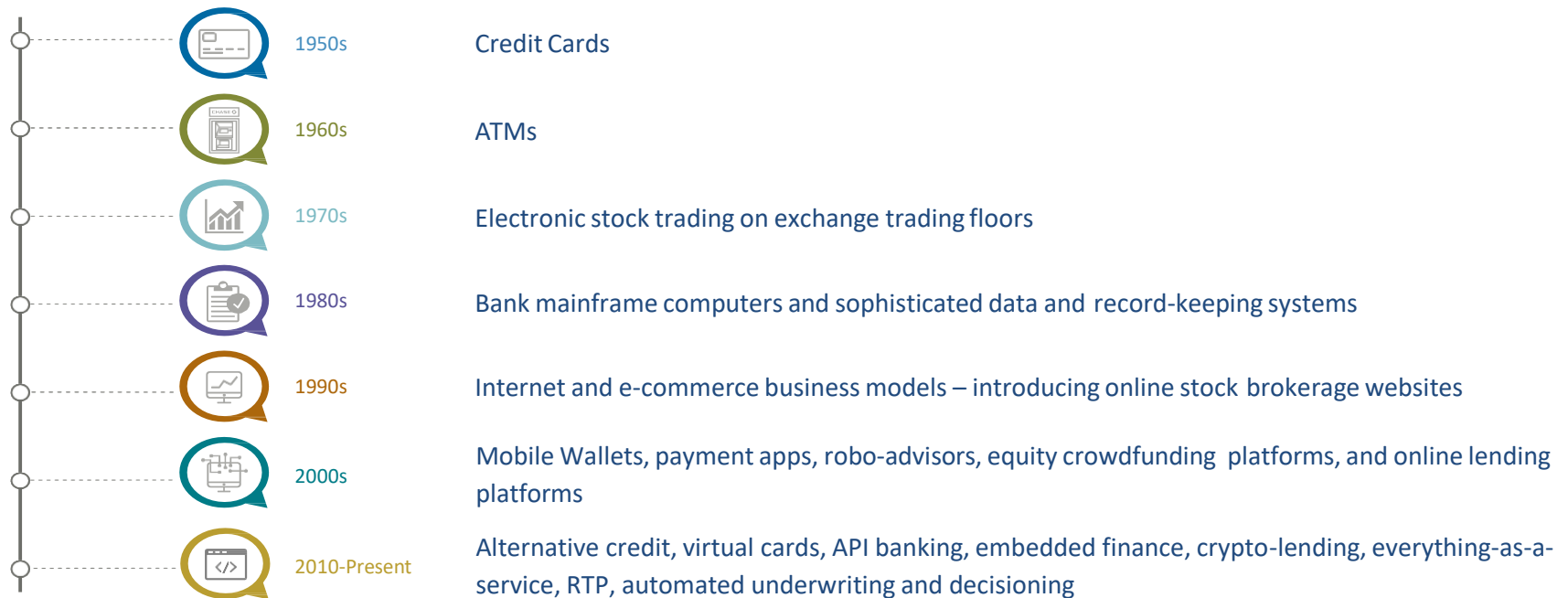
The pace of change is continually increasing, and the payments landscape is evolving more quickly than ever. We'll discuss payment trends that will impact your organization and what you can do to prepare for the future.



#SOGF2023

Financial services innovation through the years –

Innovation in financial services has existed for a long time



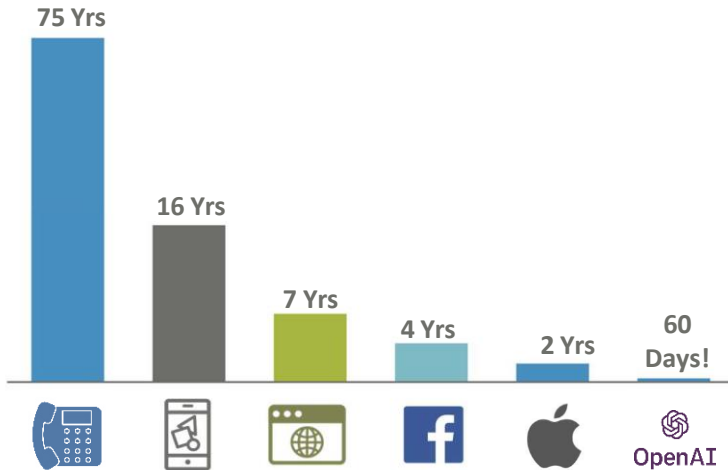
Source: Forbes



It's not you... The world is changing fast

The pace of technology adoption has increased exponentially.....

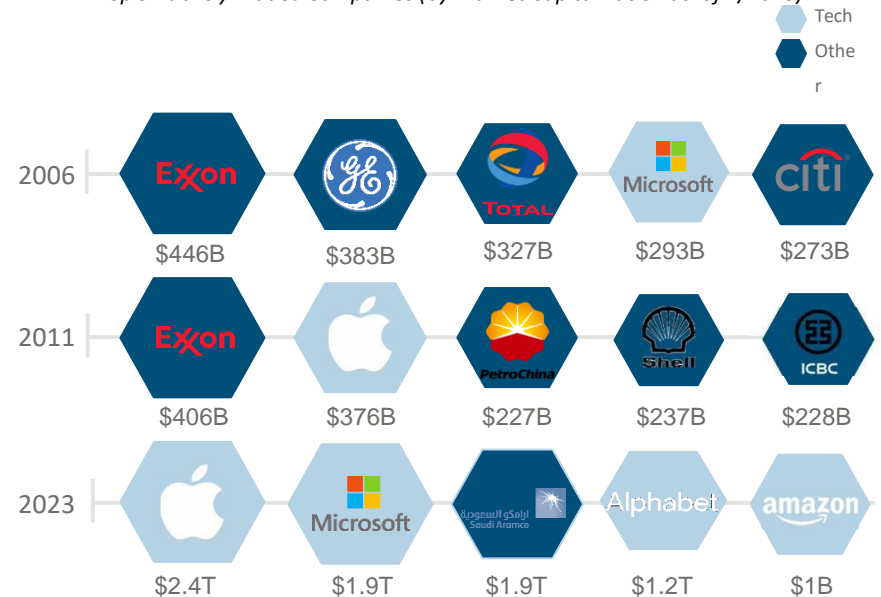
Time to reach 100M users



Source: Visual Capitalist, Yahoo! Finance

...dramatically shifting how the world perceives value

Top 5 Publicly Traded Companies (by Market Capitalization as of 2/2023)



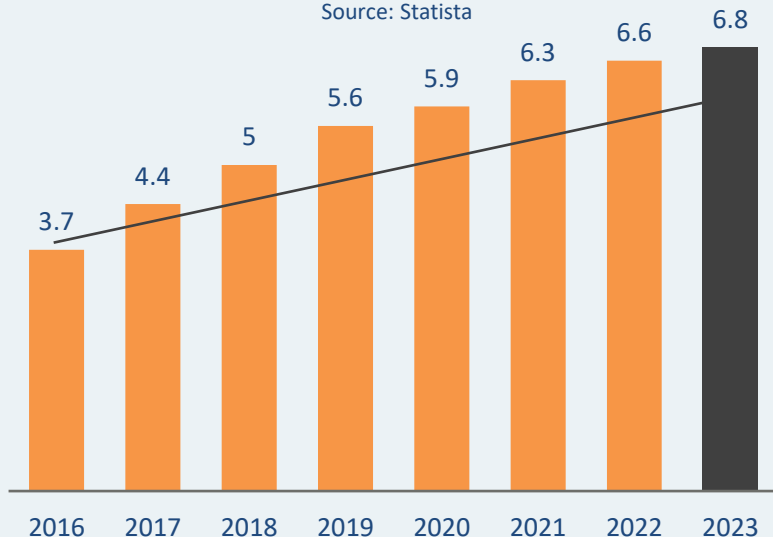
Data is the new oil



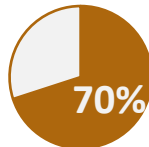
Almost everyone is connected...

No. of Smartphone Users Worldwide (Billions)

Source: Statista



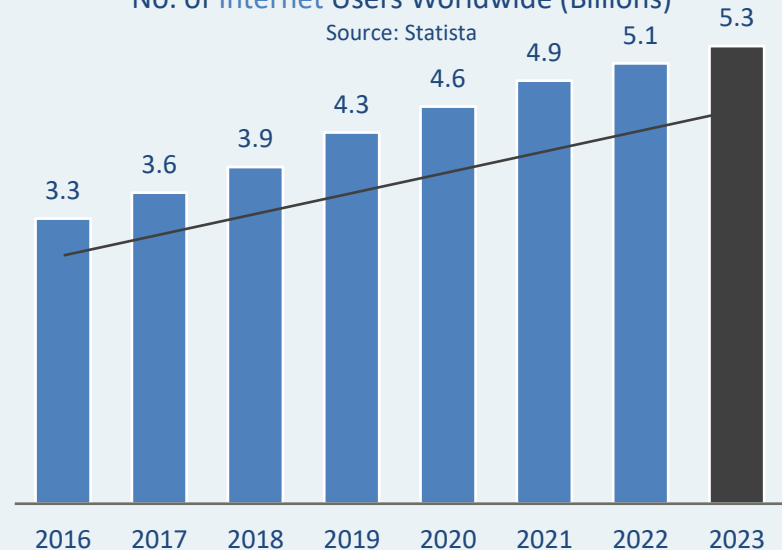
Businesses and consumers alike expect digital capabilities



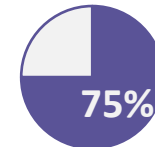
...of businesses indicate they are undergoing digital transformation

No. of Internet Users Worldwide (Billions)

Source: Statista



Millennials grew up with internet and mobile



...of the workforce will be made up of Millennials by 2030

Source: State of Mobile Internet Connectivity, GSMA 2021, 2022



Post Global Financial Crisis: Investment and innovation



Financial Crisis

- 2008 financial crisis had profound economic & political impact with lens on banking practices that led to unmitigated risk
- Regulatory focus increased on banks. As a result, banks and other FIs started investing heavily in compliance and controls – increasing such costs by over \$50B a year
- Low Interest Rates
- Flood of VC Money – Seeking yield




Technology & Venture

- Cloud – Cloud computing, open source and mobile drastically reduced the cost of starting a tech company. The cost of starting a tech company today is 100x cheaper vs 15 years ago
- Mobile – Smartphone penetration rose dramatically... giving rise to:
 - Social Media era
 - Smartphone app economy
 - Millennial Consumer Subsidy (*Derek Thompson, Atlantic*)
 - AI



Fintech and tech companies reimaged traditional banking

<i>Banking Service</i>	<i>Product Innovation</i>	<i>Example</i>
Checking	No-fee mobile banking and early paycheck advance	
Point of sale finance	Pay-in-four and installment loans at the point of sale	
Consumer loans	Digital-native application experience	
Digital wallet	Wrapper enabling frictionless payments on- and off-line	
Merchant acceptance	Affordable credit card acceptance for small merchants	
Consumer Payments	Frictionless peer-to-peer payments	
Wealth / Investing	Commission free trading	

- Fintech challengers were formed, designed to digitally deliver a single component of banking better than incumbents



The golden era of partnerships

Sentiment has moved from attacking incumbents...

...to collaborating with them and achieving integral synergies



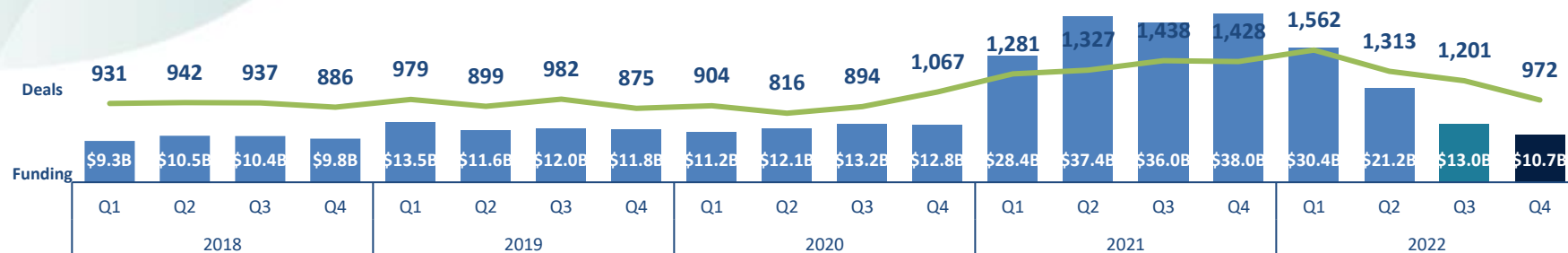
FINANCIAL INSTITUTION STRENGTHS	FINTECH STRENGTHS
Charter / License	Obsessive Focus on a Narrow Problem Set
Regulatory Compliance and Security	Modern Tech-Stack and Modern Development Tools
Subject Matter Expertise	Speed to Market
Distribution – Existing Customer Base	Cost to Build
	User Design Expertise (Intuitive User Flows)

The overwhelming amount of FinTechs are focused on collaborating with traditional firms to achieve their business objectives, with significant uptick over the years

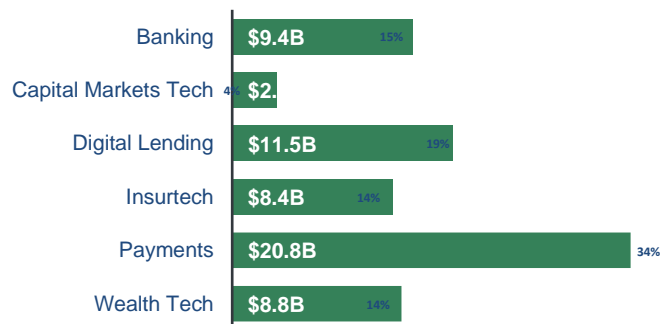
Source: Forbes, The Financial Brand, McKinsey, Capgemini, Company Websites



State of Fintech – Venture Capital funding



YTD'22 total funding by sector¹:



Key industry trends¹:

Fintech deal activity slowed in Q4'22 to the lowest volume in last four years amidst persistent high inflation, interest rate hikes, fears of pending recession, overall global economic uncertainty, and increased regulatory scrutiny:

\$10.7B

Total Fintech funding in Q4'22. Lowest level since Q4'18 and down 72% from Q4'21.

-24%

QoQ drop in US fintech funding to \$3.9B. Lowest point since Q1'18.

34%

Percent of 2022 total funding in Payments, largest sector by a considerable margin.

5

New unicorn deals in Q4'22. A new low since Q2'20.

22

\$100mm+ mega-round deals. Up from 20 in Q3'22.

\$87mm

Average M&A deal size in Q4'22. Quarterly average in 2021 was \$232mm².

-17%

Private financing volume decline QoQ. There was only one Fintech IPO in 2022, 41 in 2021³.

52%

Discount on late-stage startup funding valuations seen in the secondary market³.

Source: ¹ CB Insights Fintech Report 2022; ² FT Partners Research | January 2023 ³ Hivve December Market Report

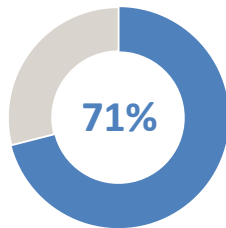
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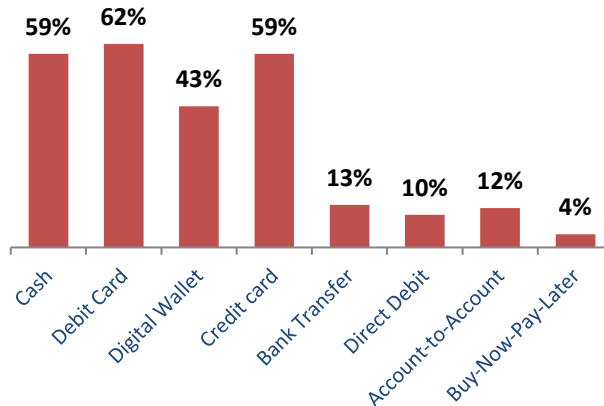
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Trends in consumer payments

Consumers of all ages currently use automatic or recurring payments¹

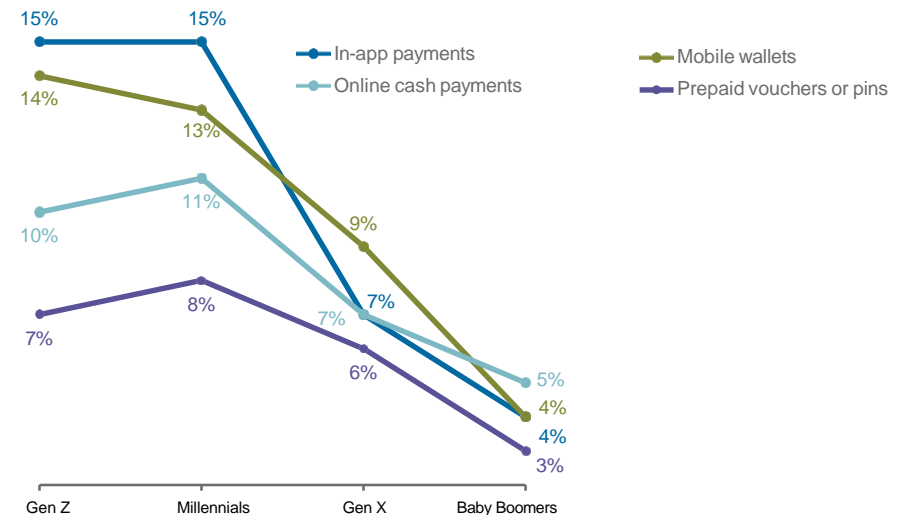


Consumers payment preferences



Younger consumers are driving the diversification of the payments landscape

Regular use of alternative payment methods by age demographic²

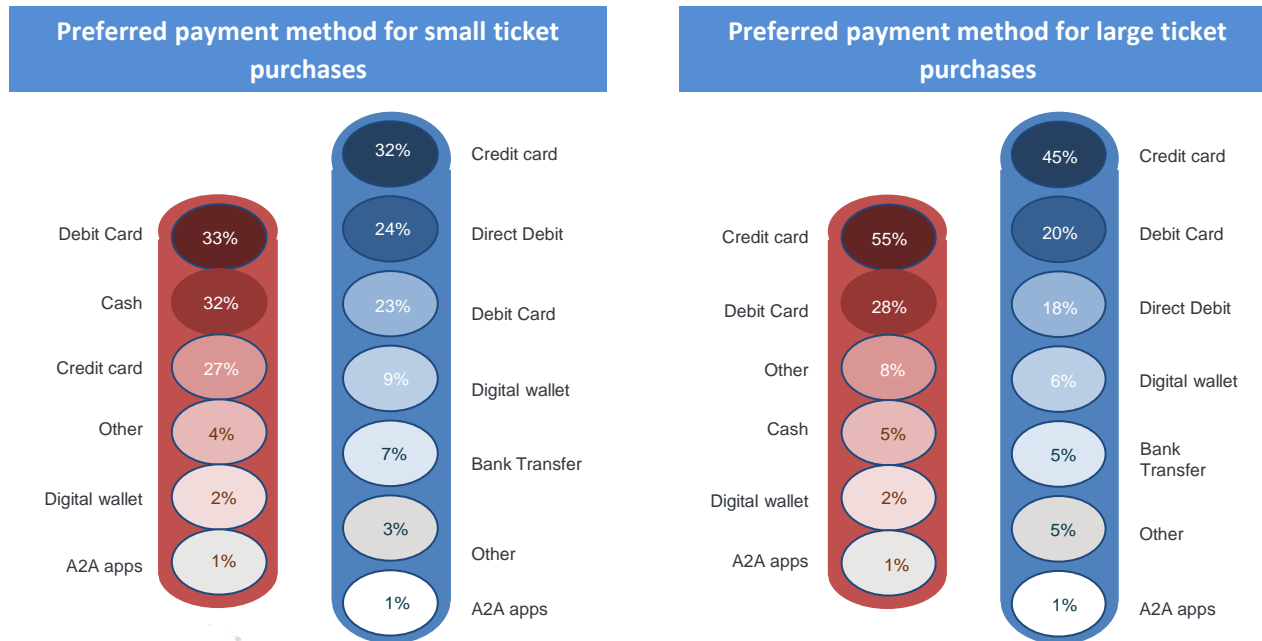


Source: ¹Consumer payments 2020 Fiserv report (survey conducted on US consumers from Nov 18–Dec 4, 2019); ²Paysafe report (survey conducted in Apr 2019 in USA, Canada, UK, Germany, Austria, and Bulgaria)
Note: Generation Z (16-24-year-olds), Millennials (25-39-year-olds), Generation X (40-54-year-olds), and Baby Boomers (over 55-year-olds)



Trends in consumer payments

Consumers' payment preferences vary by ticket size

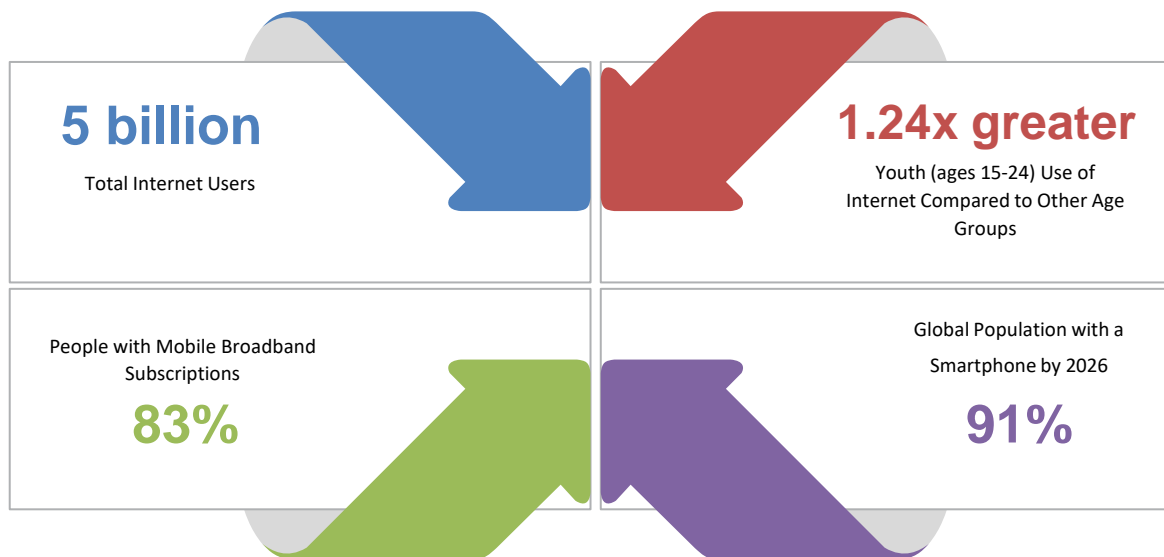


Source: Accenture Payments Survey, 2022



Trends in consumer payments

PAYMENTS LANDSCAPE



Source: Measuring digital development: Facts and Figures (2021). ITU Payments are eating THE WORLD (2021)



Trends in consumer payments

Shaping the future of payments

Platforms

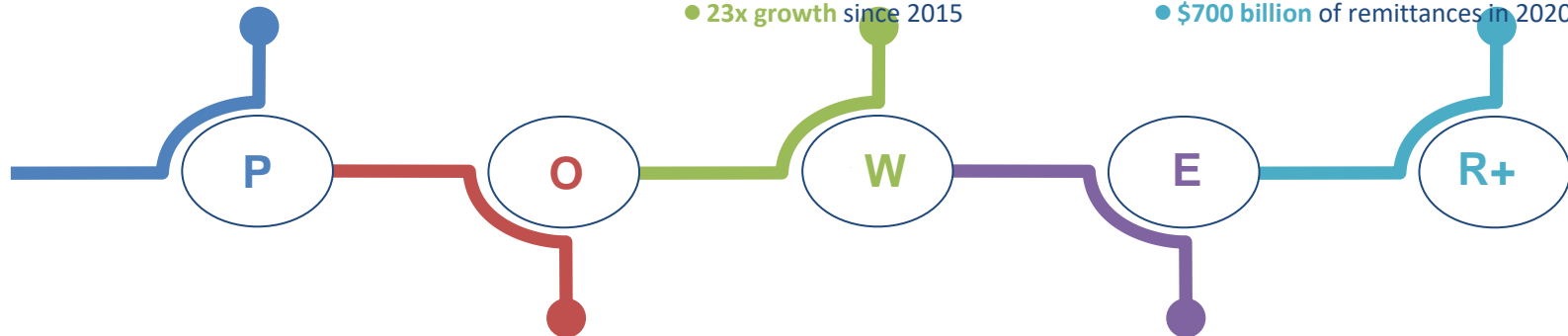
- Super apps as a destination platform
- Chinese vs global usage

Wallets

- 75 million blockchain wallet users worldwide
- 23x growth since 2015

Real Time

- 1.219 billion real-time transactions in the U.S. in 2020
- \$700 billion of remittances in 2020



Online

- By 2023, online marketplaces are expected to make up 60% of e-commerce
- 25% of financial service applications are abandoned due to friction during onboarding

Embedded

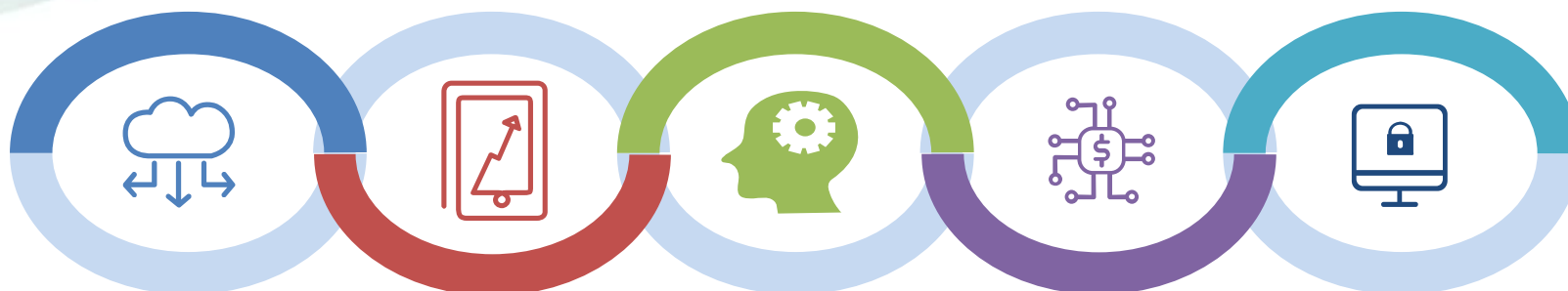
- Total number of device connections is expected to grow to 41.2 billion in 2025
- 47.8 million digital bank account openings in the U.S. by 2024

Source: Payments are eating THE WORLD (2021)



Trends in consumer payments

TOP TRENDS SHAPING THE FUTURE OF DIGITAL RECEIVABLES



Data

- “The world is now awash in data and we can see consumers in a lot clearer ways” - Max Levchin, PayPal co-founder
- Data is critical in providing customer tendencies, cash flow positioning, and potential risk offering insights to make educated business decisions

Source: AFP Study, PR Newswire

Digital

- People and businesses continue to **move to digital invoicing** allowing for **faster receipt of payment**
- According to J.D. Power, the ‘Billing and Payment’ experience drives up to **58% of total customer satisfaction scores**

Automation

- Optimizing invoicing and payments processes with automation **streamlines payment transactions and increases accuracy while decreasing costs**
- Companies can **reduce cost by 85%** moving digital compared to paper invoicing

Emerging Payments

- **Payment methods continue to evolve** as more and more consumers lean into utilizing Digital wallets
- **Global digital wallet adoption rate** is expected to reach **75% by 2025**
 - Surpassing credit cards as most used payment method in 2025

Fraud Protection

- As payments move digital, **fraud protection is highlighted as a top receivables focus**
- Capturing sensitive **data ensuring PCI Compliance** and NACHA Guidelines on **account validation services** is at the forefront heading into 2022

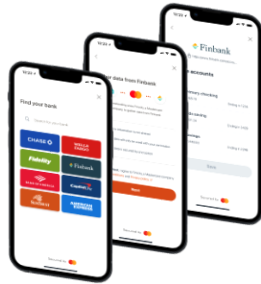


Investment in Digital Solutions

Pay-by-Bank

WHAT IS PAY-BY-BANK?

A payment option that allows consumers to conveniently pay for goods and services directly from their bank account using traditional banking rails (e.g., ACH, RTP)



- **Open banking powered**, relying on the merchant to obtain consumer consent to initiate payment directly from their account
- **A new payment option at checkout**, sitting alongside credit card, debit cards, and other alternative payments like PayPal
- **Market-specific**, requiring differing models across region/country depending on regulation, state of payments infrastructure, and local customs

WHY PAY-BY-BANK?



Billers & Merchants

- ✓ **Increases appeal and usage of account-based payments**
- ✓ **Reduces NSF's and better NSF retry rates**
- ✓ **Increases authorization rates with lower fraud**
- ✓ **Simplifies integration and connectivity** (vs. buying a standalone PBB solution)
- ✓ **Eliminates need for merchants to store sensitive customer banking information**
- ✓ **Provides some cost savings** relative to card / negotiating leverage with the networks



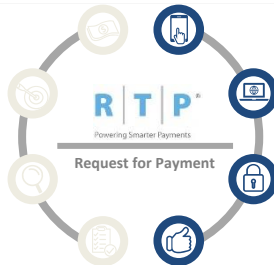
Consumers

- ✓ **Provides significantly improved UX for accepting account-based payments** (eliminates need for consumer to manually enter their banking information)
- ✓ **Reduces overdrafts and NSF's**
- ✓ **Improves transparency** into available funds
- ✓ **Increases security at sign-up**, as banking information is shared with the bank/processor and not underlying merchant
- ✓ **Rewards** and other **incentives** passed on to consumers from merchants' savings



Investment in Digital Solutions

REQUEST FOR PAYMENT



What is Request for Payment (RFP)?

Request for Payment (RFP) is a new messaging technology on the RTP network that allows corporate entities to send secure payment requests directly to their customers through their retail bank's desktop or mobile app *(for pilot it's available Chase Retail customers only)*.

Payments made in response to an RFP are settled in real-time, allowing for E2E payment request and completion within seconds (as soon as the payment is released).

Key Benefits



API-based: Request for Payment via direct connectivity for a native real time experience and notification of payment



Good funds: Customer payments require a sufficient balance and settlement is irrevocable – there are no reversals



Instant & 24/7: Payment funds are available for use immediately, 24/7 – even weekends and holidays



Security: Payment requests are delivered directly to the end customer's banking app for a secure, centralized experience *(available only to Chase retail customers in pilot)*

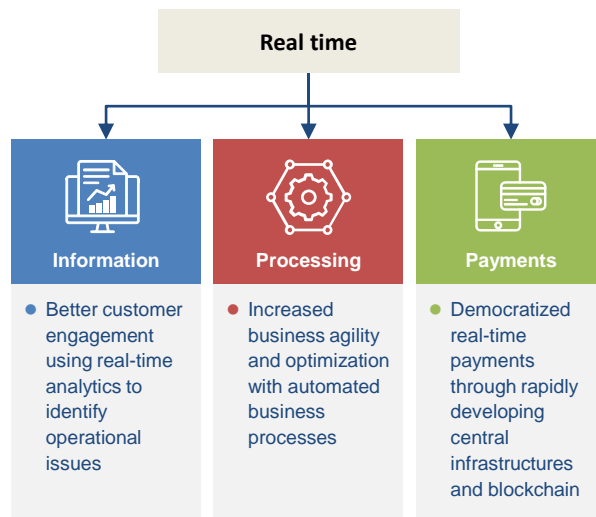
Request for Payment and all associated features / technology are preliminary and under development. All features and timelines are subject to change.



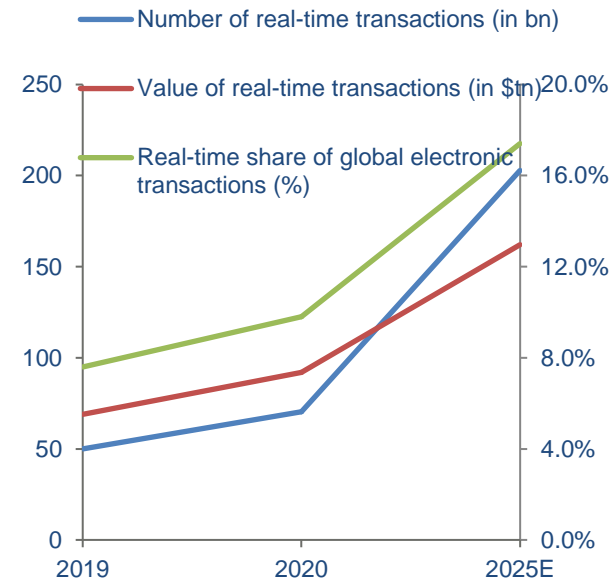
Investment in Digital Solutions

Growth in global real-time payments

THE WORLD IS MOVING TOWARD....



ACCELERATING TREND TOWARDS INSTANT PAYMENT



Treasury must continue to evolve their function

Traditional Treasury remits are expanding

Cash
management

78%

Of companies implemented regular training for cyber fraud detection*

Risk
management

73%

Of companies view cash flow forecasting automation as a top priority for the near future¹

Financial
advisor

New responsibilities are required

Business
advisor

Leverages next generation technology and data analytics to build business cases, mitigate risks and gain cost efficiencies

89%

Of companies consider Treasury's role as a **strategic advisor to the business** an important or critical mandate

Necessitates new skills



Ability to be an **influencer** within the business and with external partners to drive growth



Technology & data expertise drives insights and efficiency to target new growth, revenue, and business opportunities

Source: Deloitte Global Treasury Survey 2022



Payments are now an integral part of a wider shift in the way we live and work today

How can payments innovation help you drive sustainable growth in 2022?

Digital as a culture

54%

of organizations globally are prioritizing digital transformation¹

Anything-as-a-service

7x

Anything-as-a-service growth compared to traditional companies²

Payments as a revenue driver

Top 4

Payments as a priority for commerce tech investment by merchants³

Aligning working capital & liquidity

10^{year}

Cash levels continue to be at a 10-year high with positive signs in working capital⁴

Addressing ESG agendas

72%

of Fortune 500 companies outlined ESG strategies⁵

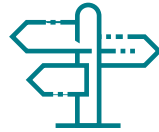
¹Flexera, [Flexera 2021 State of Tech Spend Report](#), 2021. ²The Subscription Economy Index, March 2021. ³2022 Payments Outlook, S&P market Intelligence, Feb 2022. ⁴CapIQ, J.P. Morgan Working Capital Index 2021. ⁵Bloomberg, [Global Sustainable Investments Rise](#), April 2019.



Organizations are changing faster than ever, and you might be facing new challenges



Resource &
staffing constraints



Fragmented solutions



Friction in the
payment experience



Financial health of
supply chain



Rapid growth without
scaled infrastructure



Delay in reconciling
payments



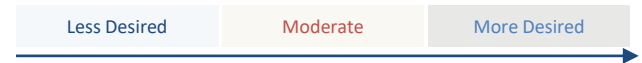
What is driving digital adoption... Both payers and billers are motivated to go digital







Benefit	Payers	Billers
 <p>Payment Speed</p>	<p>Digital tools reduce time in making payments by increasing convenience and access</p>	<p>Decreasing Days Sales Outstanding, because moving digital gets you paid faster</p>
 <p>Security</p>	<p>High confidence that payment information will be guarded and delivered successfully</p>	<p>Decrease risk of fraud and achieve PCI Compliance with less effort</p>
 <p>Engagement</p>	<p>Provide payer choice with an easy-to-use interface including multiple payment methods and channels</p>	<p>Digital interaction with payers improves client experience</p>
 <p>Data Access</p>	<p>Digital tools enable payers to stay informed on end-to-end payment status</p>	<p>Drive business decisions with access to payment data insights</p>



Payment Options

How to identify appropriate payment methods that can help enhance your Payments Strategy



	Speed	Ubiquity	Price	Experience
 >	Current to 1 Business Day	Ubiquitous	\$	Full bank account details required
 >	Instant	Up to 50–60% receipt coverage ¹	\$\$	Full bank account details required
 >	Typically minutes	85mm+ U.S. users ²	\$\$\$	Alias based— email address or phone number
 >	Typically minutes (30 minutes maximum)	99% receipt coverage ³	\$\$\$	Debit card details
 >	Typically minutes	375mm+ global PayPal ⁴ users 70mm+ Venmo users	\$\$\$	Alias based— email address or phone number
 >	2 Business Days	Ubiquitous	\$\$\$\$	Paper based/Non-digital

¹ The Clearing House Website; ² Zelle: Money Movement Momentum Continues; ³ Nilson Report October 2018, Issue 1141; Statista; ⁴ Number of PayPal's total active user accounts; ⁵ Push to Wallet is on the roadmap. Future capabilities are under development; features and timelines are subject to change



Instant Payments

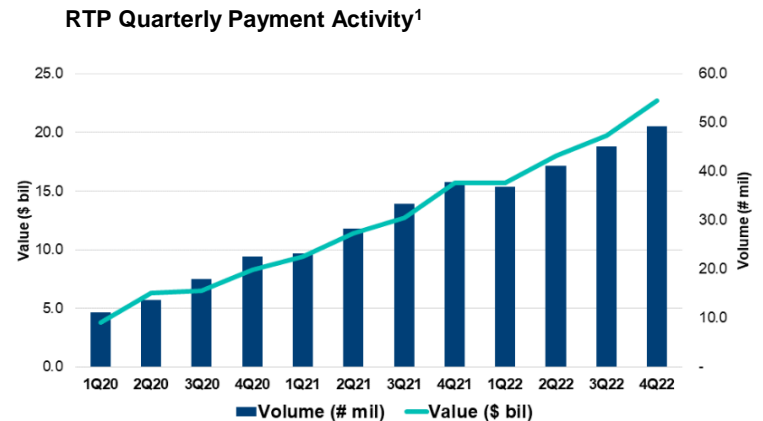
- What is it?
 - Immediate, final settlement to the payee
 - 24x7x365
 - Businesses and individuals can send and receive instant payments
 - Recipients have full access to funds immediately

Available Now

- RTP® from The Clearing House®
 - Payments up to \$1MM
 - currently reaches 65% of U.S. DDAs¹
 - Open to all federally insured U.S. depository institutions

Coming Soon – phased deployment starting in mid-2023

- FedNowSM developed by Federal Reserve Banks
 - 24x7x365
 - Planned credit transfer transaction limit will be \$500,000; Participants will have a default limit of \$100,000, with option to adjust it up or down²
 - At launch, will support only domestic payments between U.S. depository institutions



Source: 1 <https://www.theclearinghouse.org/payment-systems/rtp/institution>

2 FedNow Service product sheet - https://explore.fednow.org/resources?id=15&resourceRole=fi_spe&resourceTitle=fednow-product-sheet



Reimagining the future of payroll with Earned Wage Access

What is Earned Wage Access?

- Earned wage access (EWA) is a financial product that give employees the ability to draw on their **accrued wages before pay day** with the remainder being paid at the end of the pay period **without disrupting payroll**
- **Voluntary access** by employee
- When EWA programs are used effectively, employees can gain **greater financial security**.

Why Earned Wage Access now?



On-demand Payroll:

Shift away from Bi-weekly/ Monthly processing cycles



Addressing Corporate's focus on

Social well-being



Preserving **Human Capital**



Financial and Mental Wellness



Account Validation Solutions

Originate payments with confidence leveraging information regarding the status and ownership of the accounts

- 1 DECREASE THE LIKELIHOOD OF RETURNED OR ERRONEOUS PAYMENTS**
Validate account status and account ownership information
- 2 DETECT POTENTIAL FRAUD RISKS**
Review potentially high-risk changes to payment instructions, received via non-secured channels, such as email or fax
- 3 INCREASE OPERATIONAL EFFICIENCY**
Avoid originating payments with erroneous data, reducing the potential for manual exception handling
- 4 EASILY COMPLY WITH THE NACHA WEB DEBIT RULE**
Requires the use of a commercially reasonable validation solution
- 5 ENHANCED SECURITY**
Avoid retaining personally identifiable information and credential sharing.



The state of fraud today

- A third of all organizations are not doing any payment beneficiary information validation in spite an overall increase in cyberattacks that can come from anywhere.

71%

reported their organizations were victims of payments fraud attacks in 2021*

66%

reported that checks were the top payment method most impacted by payments fraud activity, followed by ACH debits*

58%

reported that accounts payable departments continue to be the most susceptible to business email compromise*

Why fraud is growing?

1

Capturing your data is getting easier

- Legitimate business models are easy to exploit
- Non-traditional payments invite crime
- Organized crime is on the rise
- There have been major data breaches
- Billions of accounts have been compromised

2

Protecting your data is even harder

- Fraud is fast, sophisticated and complex
- Compliance and privacy policies hinder response
- User experience is at odds with fraud controls
- New business models create vulnerabilities
- Rules do not pertain to fraudsters

Fraud losses associated could prove significantly more costly over time than investments to mitigate them¹

*2022 AFP® Payments Fraud and Control Survey



Cybersecurity risks

Definition

Business Email Compromise

Business Email Compromise (BEC) is an electronic scam to obtain confidential, personal or financial information through email

BEC scams rose **33%** in 2021 and resulted in losses of **~\$2.4B (USD)**¹

Risk areas

- Email Spoofing / Masking
- Client Email Compromise
- Vendor Email Compromise / Supply Chain
- Lookalike Domain

Best practices considerations

- Consider available email security solutions to defend against lookalike domains
- Enable controls to mark outside emails as external and ensure the process for reporting suspicious emails is clear and simple
- Use call backs to confirm payment changes

Financial malware

Malware is malicious software, to include viruses, ransomware, and spyware, designed to cause damage to data and systems, or gain unauthorized access

The average cost of a ransomware breach is **\$4.62MM**² up from **\$4.44MM** in 2020³

- Malware modifying legitimate payment instructions to a bad beneficiary
- Encryption of critical files & servers for extortion

- Update operating systems and software
- Raise awareness about the risks of suspicious links and attachments
- Secure and monitor Remote Desktop Protocol
- Regularly backup and secure data offline

Social Engineering

Social Engineering refers to psychological manipulation of people into performing actions or divulging confidential information

20% of breaches were caused by compromised credentials and **17%** were caused by Phishing²

- Call from someone pretending to be a vendor
- Client Received SMS message from a spoofed phone number

- Train & test all staff regularly against the latest social engineering threats
- Limit the amount of information employees are permitted to disclose on social media
- Consider layered email controls Employee robust caller authentication processes

¹FBI 2021 Internet Crime Report, ^{2,3}2021 IBM Cost of a Data Breach Report



Business email compromise (BEC) & impersonation

Cybercriminals use executive, business partner and vendor email impersonation to trick you into sending them money or data. **Common tactics include:**

- Phishing attacks
- Use of compromised email accounts
- Claims a bank account can't be used due to an audit
- Multiple account changes sent to victim during attack
- Use of inbox email forwarding rules to send emails to fraudsters

Criminals Register Look-alike Domains

Good domain:
marquettefarm.com

Bad domains:
marquettefarms.com,
marquettefram.com,
marquettefarm.co,
marquettfarm.com,
marquetefarm.com

19,954 | Complaints²

\$2.4B | Adjusted Losses²

4/8/2022 8:34 AM

From: Alissa Teal <a.teal@marquettefarm.com>

Subject: Urgent – Payment Account Change

To: James McKnight

Hi James,

We can't use our normal account due to an ongoing audit. Please send all future payments to our updated account.

Routing number: 987654321
Account number: 12345678

Kindly confirm you made this change.

Alissa Teal
Contract Company
(123) 456-7890



² 2021 FBI IC3 Report

BEC prevention & response



The Critical Control

- ✓ Perform a callback to the person making the request
- ✓ Use a phone number retrieved from a system of record to validate requests for payment, change of payment instructions or contact information
- ✓ Reject out of band payment processes



Additional Controls

- ✓ Establish written policies implementing mandatory callbacks
- ✓ Take calls from your bank regarding unusual transactions seriously
- ✓ Train employees on internal payment verification policies and BEC threats
- ✓ Encourage employee questions and holding a payment if it's suspicious



These steps are critical to maximize chances for recovery

Response

- ✓ Notify your bank immediately
- ✓ File a report with the FBI's Internet Crime Complaint Center
- ✓ Contact your local FBI field Office
- ✓ Notify other law enforcement agencies as appropriate



Payment security & controls

User Access

- ✓ Know who has access to your banking relationships and accounts; review entitlements regularly
- ✓ Set payment limits at account and employee level based on trends/history
- ✓ Establish multiple approval levels based on various thresholds
- ✓ Do not permit multiple users to log in from the same computer to initiate or release payments
- ✓ Use approved templates/verified bank lines and restrict use of free form payments
- ✓ Require multifactor authentication

Verification

- ✓ Don't move money based solely on email, text or phone instructions
- ✓ Perform callbacks for request for payments, changing payment instructions or contact information
- ✓ Conduct callbacks with the person making the request via a phone number from a system of record
- ✓ Don't use numbers obtained from sources like email, pop-up messages, texts or voicemail
- ✓ Never give information to an unexpected or unknown caller
- ✓ Establish with customers / partners how changes in account information will be communicated and validated
- ✓ Have a process to respond to your financial institution if they call about unusual payments

Reconciliation

- ✓ Perform daily reconciliation
- ✓ Validate that vendors have received payments on payment date.
- ✓ If volume is an issue, perform sampling or set thresholds such as validating payments over a certain amount



Questions



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