

Contents

Executive summary	1
Business-to-business payments: legacy and evolution	2
Shaping your company's future payments capability	3
Not entirely "out with the old," but definitely "in with the new"	4
Paper checks are going, going, but not gone	
Digital transformation: acceleration and opportunity	6
The digital transformation has already begun.	7
Large-scale shifts in B2B payments	8
How shifting payments create opportunities	
Innovation is inevitable	10
The real-time payments global landscape	11
Real-time payments bring more than just speed	13
Increased organizational intelligence through data	16
Future state: Business Payments 2022	17
Organizations must adapt now to meet the coming demand	
Connecting the processing points	
Meeting business needs with payments excellence	
Mastercard Business Payments: keeping businesses ahead of the curve	21
A complete suite of solutions across all payment needs	22
Payment platforms and infrastructure	
Conclusions	24
Endantes	24



What was once an evolution of capabilities is now a revolution of technology and expectations as we move into the new era called **Industry 4.0**.

The financial services sector has come to a critical crossroads. How do we, as an industry, determine our own future when delivering business payment solutions to customers, regardless of size or complexity?

Emerging, rapidly evolving technologies have forever altered the payments landscape. Banks in particular – given the complexity of services, global delivery, and intense regulatory scrutiny – must navigate it carefully. It's a journey that can no longer be successfully travelled alone, instead requiring the inputs of trusted partners and the precise execution of modern technology.

An age accelerated by real-time expectations is driving worldwide reform

While traditional payment rails remain reliable solutions, continuing to be at the center of cash cycle management, the shift from paper-based to digital processes is inevitable. The universal desire to improve efficiency, respond to innovation and reduce operational risk is necessitating worldwide reform of payments.

- Today more than 20 countries possess real-time payment (RTP) systems.
- · Some first-moving markets including the UK, Mexico and Switzerland, adopted RTP due to regulatory pressure.
- Markets such as South Africa and India, banks proactively (and wisely) responded to the growth of digital and non-financial players entering the market.

The U.S. has launched its first new payment system in 40 years

With data and messaging functionality seen as the most advanced in the world, the U.S. RTP system's robustness accelerates innovation, impacting multiple use cases and flows including P2P, C2B, B2C and B2B. For example, technology pioneered by Vocalink, a Mastercard® company, powers the real-time payments (RTP) infrastructure and rails operated by The Clearing House (TCH). This becomes the foundation for a safer, smarter, faster digital payments system.

Innovation is creating new avenues for connectivity and intelligence

Thanks to digital innovation, companies can now connect all processing points in the cash cycle digitally, improving costs and mitigating risk. But more than that, companies can see the competitive advantage of more broadly available enterprise intelligence through easier data access and analytics.

Banks remain key delivery partners for businesses navigating the new economy created by Industry 4.0. Success will come by pairing with powerful financial technology providers possessing the vision and global expertise to navigate toward 2022 and beyond.

Business-to-business payments: legacy and evolution

The rapid pace of technological advancement sees the world changing in profound ways at an unprecedented rate.

In 2016, the World Economic Forum suggested that the Fourth Industrial Revolution, now heralded as "Industry 4.0", is officially underway."

We are on the cusp of a new industrial revolution, unlike anything we've experienced before. While the first two – the mechanization of production followed by the creation of mass production – took place over the course of 150 years, the third, spawned by electronics and information technology, commenced a mere 20 years ago.

Now a fourth revolution is building on the third: a digital age moving at a speed with no historic precedent – effectively blurring the lines between the physical and virtual worlds, utilizing quantum computing, artificial intelligence, distributed ledger, advanced visualization, and other technologies. The cycle of change has become rapid and continuous – keeping up with the pace requires vision and collaboration. Even global C-level executives see the need for improvement in preparing to manage this convergence of technologies (*Figure 1*). As companies confront their ability to take on the intricacies of rapidly changing technologies, partnerships will acquire heightened importance. As such, connecting with partners that have proven to be technology savvy will play a huge role in future success.

FIGURE 1: THE C-SUITE IS NOT ENTIRELY CONFIDENT ABOUT PREPAREDNESS FOR THE TECHNOLOGY REVOLUTION

How prepared is your organization to address these issues?



Emergence of new business delivery models

"Highly prepared"



Blurred lines between businesses



Smart and autonomous technologies

Extent of agreement with following statements about organizational readiness to benefit smart and autonomous technology:



A strong understanding of the effect on the workforce and organizational structure



"Highly confident"

A strong understanding of how to integrate our solutions within the external infrastructure



A strong business case for our new technology solutions

 $Source: Deloitte \ and \ Forbes, \ Survey \ of \ Global \ C-Suite, \ "The \ Fourth \ Industrial \ Revolution \ is \ here-are \ you \ ready?", 2018$



The history of Business Payments is a long one, beginning with central check clearing through the Federal Reserve about 100 years ago. The 1960s and 1970s ushered in the next era of payment systems, with incremental – but not revolutionary – changes occurring in the ensuing 50 years.

Until very recently, there were four basic types of Business Payments systems in the United States, with similar systems and some variations across the globe:



Paper checks

Centrally cleared through the Federal Reserve, with most checks today converted to electronic images.



Automated Clearing House (ACH)

Net electronic settlement system with both debit and credit solutions, including the privately owned Electronic Payments Network and the FedACH system. Each developed foreign market has an equivalent system, such as Bankserv for electronic funds transfer (EFT) in South Africa and ACSS in Canada.



Card payment systems

Credit, debit, and prepaid card systems in both open- and closed-loop global networks, issued through bank and nonbank payment companies.



Real-time gross settlement (wires)

The privately owned Clearing House Interbank Payments System (CHIPS) and the federally-managed system (Fedwire). The equivalent system in the United Kingdom is CHAPS and in Australia RITS.

The past ten years saw the development of **real-time payment systems**, which have been deployed in various international markets including the United Kingdom, Singapore, Mexico, India, and Taiwan. These are either real-time or near real-time hybrid systems, typically used for consumer and small business purposes. The U.S. has now deployed an upgraded ACH system called Same Day ACH (credit and debit) as well as real-time payments from The Clearing House. It's important to distinguish between these various types, since not all "faster" systems deliver payments in real-time. For example, Same Day ACH is not immediate but will allow payments posting on the same day (on business days only) if initiated before 2:45 p.m.

PAPER CHECKS ARE GOING, GOING, BUT NOT GONE

The use of paper checks has been diminishing across developed markets for years. We're seeing an upward trajectory in electronic payments, most significantly in the cards space in markets outside of the U.S. Between 2012 and 2016 there was an 18.5% growth in card transactions in non-U.S. markets. Yet, the U.S. still remains a heavy user of checks, especially for business transactions. Based on an analysis of payment flows in the U.S. (*Figure 2*), Mastercard sees the business-to-business (B2B) payments market in the range of \$25 trillion per annum, with checks accounting for more than 50% of the overall transaction value.

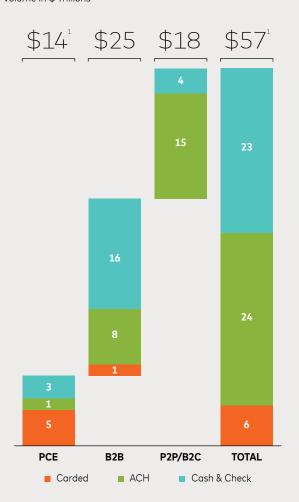
Companies are recognizing the advantages of digitizing payments, which include more data, more control, and more automation. These improvements can substantially reduce the cost and risk associated with paper processes in general, but the greatest benefits lie in business payment inefficiencies and payments fraud risk (*Figure 3*).

FIGURE 2: THE U.S. REMAINS A HEAVY USER OF B2B PAYMENT CHECKS

North America

Market size by payment flow

Volume in \$ Trillions

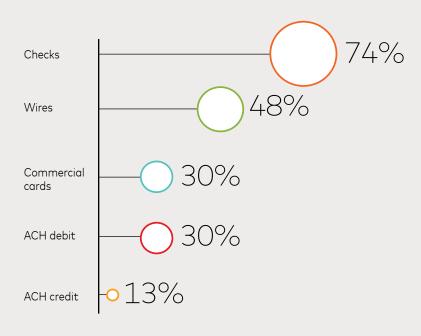


Note: Figures may not sum due to rounding.

1 Includes approximately \$4 trillion in non=purchase personal consumption Sources: 2016 - Oxford Economics, Euromonitor international, Kaiser Associates, Mckinsey Payment Data, U.S. Bureau of Economics Analysis; 2017, Statistics Canada; 2017, Mastercard internal analysis

FIGURE 3: CHECKS ARE NOT ONLY COSTLY BUT A RISKIER MEANS OF B2B PAYMENT

Payment methods by incidence of actual/attempted fraud 2017



Source: 2018 AFP Payments Fraud and Control Survey

Reducing check processing by 10-50% equates to

\$1.3-\$58.3B savings/annum

based on an estimated 5.3B B2B checks processed in 2015

Source: 2015 RPMG EAP Benchmark Survey, CSS Survey, Fed Payments Study 2016



Digital transformation: acceleration and opportunity

Several trends are redefining Business Payments.

The upswing in card payments continues to grow, accelerated by enhanced straight-through-processing capabilities. But the biggest shift is the onset of real-time payments in the U.S., spurring improved customer experiences and new efficiencies for business.

According to The Association for Financial Professionals (AFP) 2016 Electronic Payments Survey, business payments continue to skew toward checks, especially in the U.S., with the use of checks for B2B payments in the U.S. remaining more-or-less flat from 2013 to 2015. But that trend is now changing. The Federal Reserve Payments Study 2017 supplement has projected a decline of 3.7% in commercial check usage for the year. This raises the question: how quickly will paper be eliminated from business payments? The answer lies in a combination of variables driving the rapid trend away from paper-based payments processes in the U.S. – a move that is well underway in other world markets.



The surge of **investments in financial technology** (fintech) of the past four years continues. Early fintech products and services were driven primarily by consumer applications, but now the shift is toward B2B solutions. These digital solutions are becoming more familiar to the end users, who increasingly expect an easier experience in the workplace.



The era of **open banking** is upon us, with the European Union's revised Payment Services Directive (PSD2) now in force and similar regulatory initiatives underway in Australia, Hong Kong, and Singapore. Open banking will provide banks an opportunity to offer next generation services through various 3rd party channels.



Real-time payment systems are becoming more commonplace, helping to drive adoption of global standards (ISO 20022). The adoption of the global messaging and data standards will unlock new innovations.

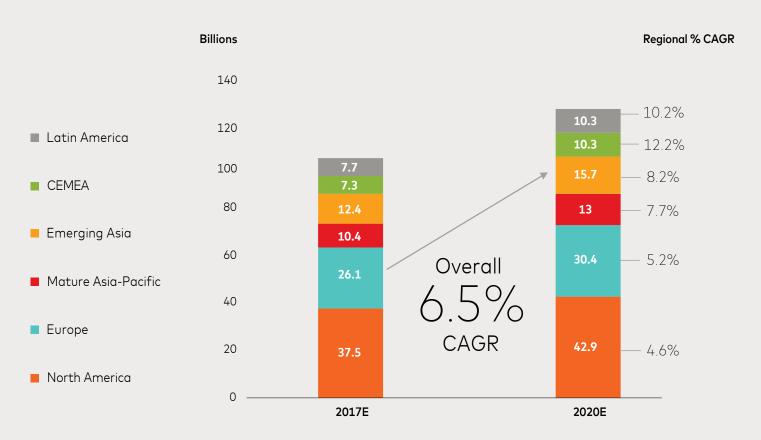


LARGE-SCALE SHIFTS IN B2B PAYMENTS

Mastercard estimates that the current global business payments market exceeds \$100 trillion, encompassing all forms of payment. That said, the number of B2B noncash transactions continues to grow thanks to two major factors: (1) general economic growth, which varies by region and market, and (2) businesses' continuing adoption of digital payments. Global B2B noncash payments are expected to increase at a cumulative average growth rate (CAGR) of 6.5% through 2020, reaching 122.4 billion transactions (*Figure* 4). Because financial institutions rely on transactions to generate noninterest revenues, it is critical for them to deliver modern digital payment solutions in order to retain key clients and relationships.

FIGURE 4: B2B NONCASH PAYMENTS CONTINUE TO GROW IN VOLUME

Global B2B noncash transactions



Source: Capgemini, World Payments Report 2017

HOW SHIFTING PAYMENTS CREATE OPPORTUNITIES

The loss of revenue associated with the declining use of checks is a cause for concern for banks. But a greater concern should be not having a better electronic alternative in place. Displaced B2B check spending can be dispersed among various payment types, including cards – both physical and virtual – and account-based payments. The wise bank will see beyond checks and optimize their ability to capture both organic and displaced business payments volume.

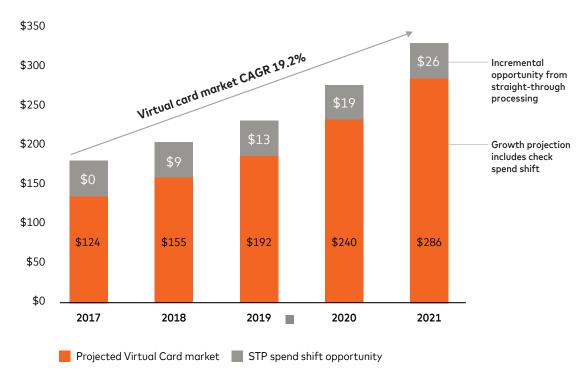
For commercial card issuers, claiming a higher percentage of this displaced check spending can come via high-growth virtual card accounts (also know as single-use accounts), now gaining usage in accounts payable. By using innovative virtual card push-payment technology and advanced supplier onboarding capabilities, bank issuers can accelerate the use of virtual cards beyond the already robust projected growth rates of 20% per annum. The latest virtual card capabilities allow for straight-through processing (STP) to supplier bank accounts, easing the experience and reducing processing costs. *Figure 5* illustrates the incremental volume of B2B payments that better digital execution can bring to bank issuers through 2021.

FIGURE 5: STRAIGHT-THROUGH PROCESSING WILL ACCELERATE THE CONVERSION OF CHECK TO CARD PAYMENTS IN THE B2B SPACE

Growth of Faster Payments by Segment Updated August 2018

- U.S. businesses want to eliminate checks
- Current virtual card market captures about 6% of check spend shift
- Opportunity exists for an incremental 2%-5% of check spend shift through STP

Additional Check-to-Card Conversion Represents a \$67B Opportunity (Dollars below represented in Billions)



Source: Mercator Advisory Group (October 2017) and Mastercard internal analysis



INNOVATION IS INEVITABLE

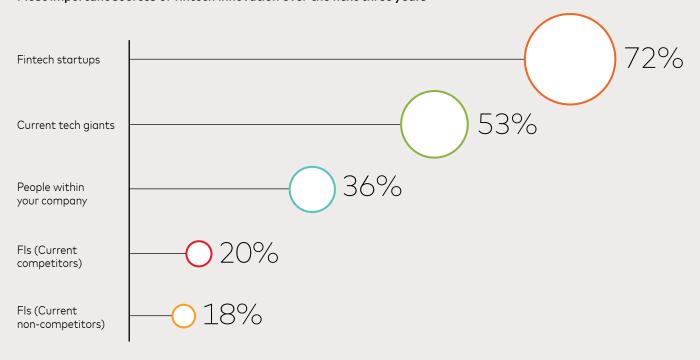
The disruptive nature of Industry 4.0 will inevitably impact financial services sooner than later. Corporate end-users are already demanding easier navigation of their daily work routines through modern solutions. These expectations coincide with – and can be driven by – evolving technology, creating massive product growth potential for providers who proactively capitalize on change.

Digital Business Payments capabilities deliver two major benefits: The first is a more seamless experience for end users, who can effortlessly access work routines through multiple devices. The second is overall process efficiency, since digital capabilities add scale, reduce errors, and provide ongoing flexibility for growing businesses. Providing access to the most advantageous solution to a specific situation benefits both buyers and suppliers.

Banks are beginning to deliver on digital advances by partnering with fintechs, which have been responsible for much of the disruption in recent years. For decades the industry has been well-served by established fintech partners delivering core systems, network access, payments processing, and multiple additional services. More recently, fintech start-ups have been backed by venture capital funding estimated to total \$44 billion since 2014. Partnerships between mature fintechs and the more recent entrants have proven to be strong combinations. Banks are now seeing the value of utilizing fintech expertise to adapt to the future needs of their business clients (*Figure 6*).

FIGURE 6: BANKS SEE A NEED FOR PARTNERS

Most important sources of fintech innovation over the next three years



Source: KPMG International, Global Fintech Survey 2017



THE REAL-TIME PAYMENTS GLOBAL LANDSCAPE

Organizations are demanding easier navigation of their daily work routines through modern solutions. This demand has triggered the worldwide reform of payments, driven by the need to improve efficiency, respond to technological innovations and reduce systemic risk.

FIGURE 7: FACTORS DRIVING REAL-TIME PAYMENTS ADOPTION



Need to improve efficiency of the payment system



Need to respond to technological innovations



Need to reduce systemic risk



Market demand for better payment system/settlement services



End-user demand for better payment/ settlement services



Government demand or better payment services

Statistics based on a survey of 120 organizations
Source: Payment systems worldwide – A snapshot – Outcomes of the Global Payment System Survey 2010, World Bank

The above factors have brought on the adoption for real-time payment systems around the world. Today, more than 20 countries are live with real-time payment systems (*Figure 8*).

For a number of first-moving markets like the UK, Mexico and Switzerland, the introduction of RTP was triggered by regulatory pressure. Banks in several other markets, such as South Africa and India, proactively moved to real-time payments in response to digital growth and non-financial players entering the market.

The U.S. has recently joined the ranks of other forward-thinking markets, launching real-time payments in 2017 by leveraging public and private collaboration.

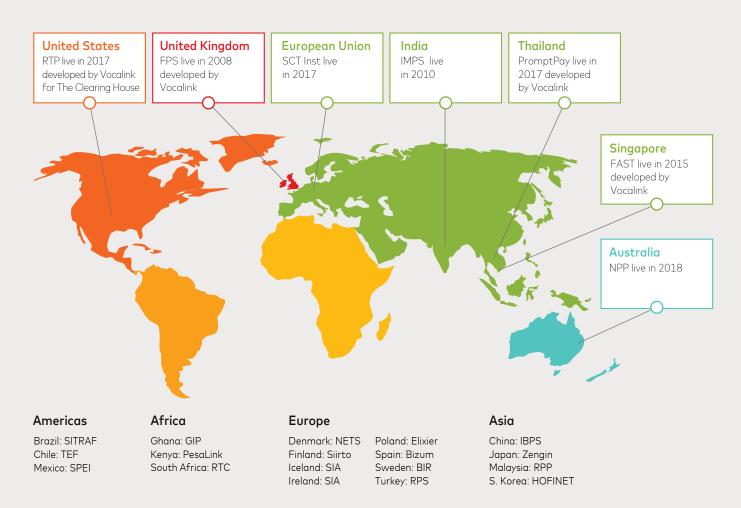
Publicly, the Faster Payments Council, led by the U.S. government, has set out to establish a ubiquitous world-class payment system by 2020 where Americans can safely and securely pay anyone, anywhere, at any time, with funds instantly available.

Privately, the first new payment system in 40 years was launched in the U.S.



Vocalink, a Mastercard company, powers the RTP infrastructure and rails operated by The Clearing House, which is providing the foundation for a safer, smarter, faster digital payments system. Business Payments was the primary driver, allowing for real-time settlement of large-value payments.

FIGURE 8: REAL-TIME PAYMENTS ARE ALREADY HERE



Source: Mastercard Business Payments

REAL-TIME PAYMENTS BRING MORE THAN JUST SPEED

While real-time suggests absolute immediacy, its greater advantage may be the powerful unlocking of shared data. This can lead to greater security, scalability, efficiency, and a common global language – this in addition to 24/7/365 accessibility (*Figure 9*).

With such robust capabilities, we can expect to see a new era of innovations to emerge.

In fact, 85% of banks believe that real-time payments are the foundation for growth and new product enhancements.

FIGURE 9: THE U.S. RTP SYSTEM IS THE MOST ADVANCED GLOBALLY GIVEN ITS DATA AND MESSAGING FUNCTIONALITIES

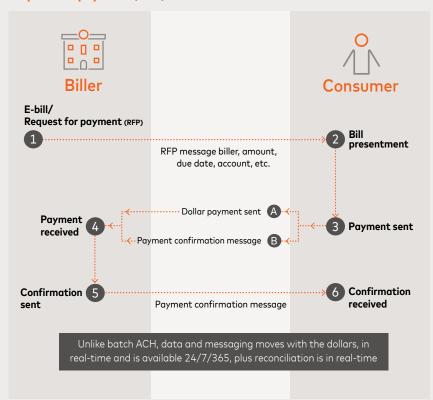
Beyond speed of payment, a key benefit of RTP lies in delivering payments and data in tandem

Innovation unlocked through messaging and data standards

ISO 20022 – A robust international framework enabling security, flexibility, scalability and interoperability through a common language for alobal financial communications

RTP MESSAGE TYPES – Beyond payment messages, RTP uniquely supports rich non-payment messages like Request for Pay, Payment Confirmation, Extended Remittance Advice, and several exception and admin messages

Request for payment (RFP) in action



The potential to innovate and create value beyond the speed of transactions can be seen in the ability to overlay services and applications on the RTP rails. Financial crime solutions is one more example. By leveraging payments data and applying cutting-edge data analytics and machine learning, banks and financial institutions can quickly detect and prevent fraud. This applies to money laundering as well as fraud tactics such as business email compromise (BEC), a multidirectional attack targeting corporate communications systems in order to trick employees into making payments to fraudulent accounts. Technology can now recognize false invoices or out-of-pattern urgent requests for payment to new bank accounts before fraudsters receive an instant, irrevocable payment.



The foundational value of RTP systems is flexible payment capabilities that operate in conjunction with modern technology – providing the essential connection to today's always on economy. These benefits (*Figure 10*) offer business users much greater choice and flexibility for cash management and working capital decisions.

FIGURE 10: BENEFITS OF REAL-TIME PAYMENTS IMPLEMENTATION

The key value of RTP goes beyond the speed of payments and can help:



Consumers

- 24/7/365
- "Zero" friction payments
- Security from anytime emergency payments



Corporates

- Efficiency e-invoicing and billing
- Improved liquidy management
- Optimized working capital management



Government

- Anytime, traceable, emergency benefit payments
- Increased tax revenue from GDP growth
- · Global harmonization



The Economy

- Increased velocity of money
- GDP growth from higher payment volumes
- Market efficiency from competition



Society

- Reduction of crime and security issues related to cash handling
- Reduced systemic risks (eg., fraud, AML)
- 24/7 service culture

Real-time payments will have broad impact across several use cases and flows including P2P, C2B, B2C, and B2B. Mastercard believes the greatest opportunity is concentrated within business flows. *Figure 11* provides a visual overview of scenarios across the Business Payments spectrum.

FIGURE 11: CREATE OPPORTUNITIES TO SERVE BUSINESSES ACROSS THE GLOBE IN MULTIPLE USE CASES

RTP can deliver value across B2B, BG2C and C2B channels



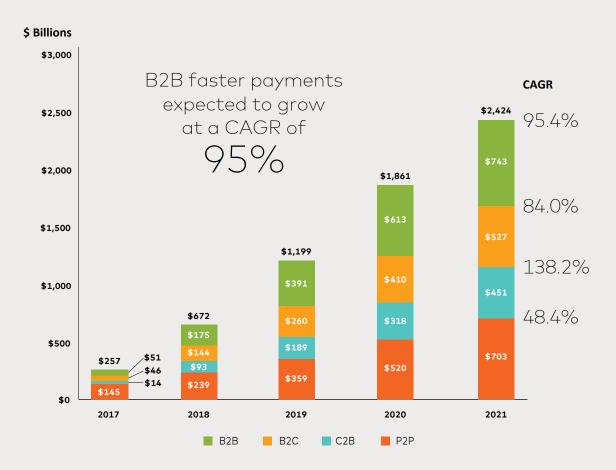
Source: Mastercard Business Payments



Figure 12 illustrates the substantial growth expected in faster-payment systems in the U.S. through 2021 based on various business uses.

FIGURE 12: U.S. FASTER PAYMENTS VOLUMES, PROJECTED 2017–2021

Growth of faster payments by segment



Source: Mercator Advisory

Real-time payments have become the focus of much debate, especially since the recent launch of RTP in the U.S. by The Clearing House. The reality is, however, that similar systems have existed for a number of years in multiple markets across the globe, and will become even more commonplace over the next few years.

One of the overall concerns of the payments industry is how the real-time payments systems will impact legacy payments. This is certainly a legitimate area for discussion given the operational and revenue implications. This very question was addressed, in part, by The Federal Reserve Bank of Atlanta's 2017 report titled *Faster Payments Implementations in the United Kingdom and the United States*. In effect, real-time payment systems have a value proposition far superior to checks, but card-based payments will continue to grow given the variety of customer needs that demand unique applications.

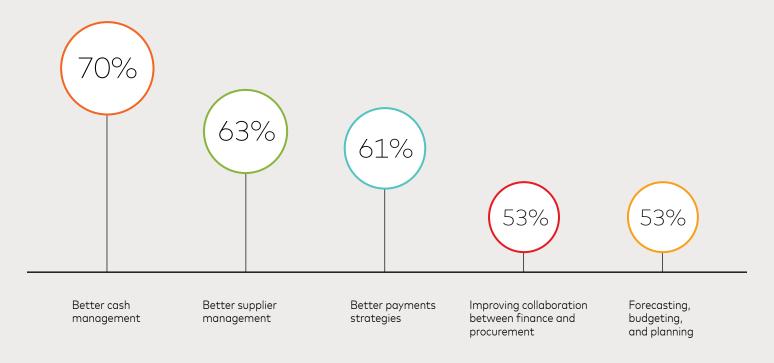


INCREASED ORGANIZATIONAL INTELLIGENCE THROUGH DATA

Business Payments is just one of the process boxes in the corporate cash cycle flow chart. A more complete view of that flow includes procurement, receiving goods, inventory, supplier payments, cash visibility, collections, and analysis. Digitizing the cash cycle allows for more efficiency within the payables business process box, as well as more effective communication with other parts of the business flow, to the overall advantage of an organization. For example, the use of a Business Payments hub can greatly benefit companies by connecting the central nerve of the digital payables workflow with internal partners and external suppliers. This not only creates choice for the "best" payment type, it also capitalizes on integration for end-to-end data capture which feeds multiple intelligence opportunities. Nimble providers are now also using application programming interfaces (APIs) to access and analyze data across multiple sources. One example is the ability for a CFO to slice and dice consolidated information by segmenting spend by department, vendor or project. Individual client transaction intelligence can assist in providing an easier and more relevant payment experience. Another example, illustrated in *Figure 13*, is the opportunity cost resulting from a lack of business insights due to underutilization of analytics made available with digital information. It's the CFO's mandate to leverage data to better manage company finances; companies should strive to give the CFO all useful data from daily operations.

FIGURE 13: CREATE OPPORTUNITIES. DON'T LOSE THEM.

Opportunities created when CFOs leverage accounts payable data



Source: Ardent Partners, The State of ePayables 2017

Future state: Business Payments 2022

"We always overestimate the change that will occur in two years and underestimate the change that will occur in the next ten. Don't let yourself be lulled into inaction." - Bill Gates

When the phrase "the internet of things" (IoT) was coined in 1999, the concept seemed farfetched. Not anymore. Today we are living at the leading edge of that world. Autonomous vehicles, Al, robotics, natural language processing, and virtual reality are all manifestations of connectivity between the physical and virtual using advanced data communications.

The need to adapt to new schemes and business models reflecting both consumer and business preferences is most evident in the rapid transformation of the retail business sector, where failure to recognize and adapt to the mobile-enabled revolution can be deadly.** Retail banks have been undergoing makeovers for several years, adapting to changing demographic preferences and new technology with modern branches and online-only business models. Future-forward thinking that once determined the direction of bricks-and-mortar banking is now manifesting itself in the planning and execution of digital strategies. Technologies such as Al, APIs, and blockchain, in combination with mobile delivery of corporate financial services, will allow banks that have the right vision, partners, and connections to help corporates of all sizes and segments to eliminate multiple nondigital process inefficiencies across their cash cycle.



The onset of Industry 4.0 demands that companies adapt their strategies, systems, processes, and potentially even their entire business models if they don't want to risk irrelevancy.

What will the business world of 2022 look like?

The near-future will bring a more "networked" payments environment, where the best companies will see:

- · full interoperability between interorganizational, client product delivery and vendor systems
- · fundamental cash cycle functions communicating and exchanging transaction information in real time
- systemically driven intelligent payment choices that align with the best interests of both buyer and supplier for the given situation
- · elimination of check payments, incorporating real-time payments into their capabilities
- · establishment of full, ongoing adaptability to technology advancements and the latest payments types.

Examining the future from the perspective of corporate financial professionals, we envision:

- treasurers gaining easy, secure access to their companies' account information in close to real time
- · optimization of liquidity systems bringing visibility into cash across multiple bank relationships and accounts
- the ability to forecast cash positions across their entire banking relationship structures
- the initiation of payment or funding requests in their preferred channel

 streamlined operations enabling timely cash management decisions based on visible transaction flows.

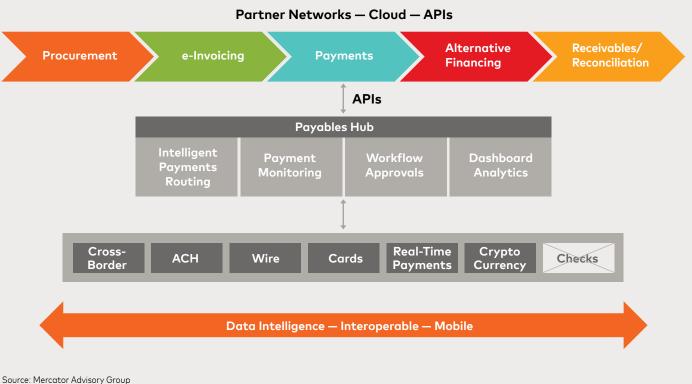
This vision for 2022 seamlessly connects all the steps in the cash cycle from procurement to reconciliation. A natural outgrowth of this digital continuum is best-in-class working capital management, which banks must deliver to their clients.



Figure 14 illustrates how systems and providers can help banks deliver this future vision to clients. Best-in-class Business Payments providers will extend the value of their services by fully connecting all cash cycle business systems and processes. Users will access systems through any device or channel, and the networked environment will be enabled through APIs. The methods and timeframe for achieving a fully transformed organization will vary, xiii but to compete in the new era of globally interconnected access, digitalization is key.

FIGURE 14: DIGITAL CONNECTIONS ARE THE FUTURE

Executing superior Business Payments solutions with the right partners



MEETING BUSINESS NEEDS WITH PAYMENTS EXCELLENCE

The technology-enabled and connected bank of 2022 should be able to meet any business payment need on behalf of clients regardless of the business use case. It should also be able to incorporate increasingly mobile preferences with the highest level of security. The dynamic and global economy will be more fully connected by 2022, and banks can't afford to lose relationship and transactional opportunities due to a lack of forward vision. Business cases range from payments between trading partners to participation in the gig economy, where independent workers need to both get paid and pay for services. This increasingly borderless economy expects faster payments both domestically and across borders in local currency. The fast-growing e-commerce environment also demands better, easier, and safer ways to pay, using any device or channel purchasers prefer. Banks need to manage these adjustments as open banking becomes more of a global market standard and regulators expect compliance in each market where services are provided. Without the right expertise, this is a formidable challenge on a global scale.

Mastercard Business Payments: keeping businesses ahead of the curve

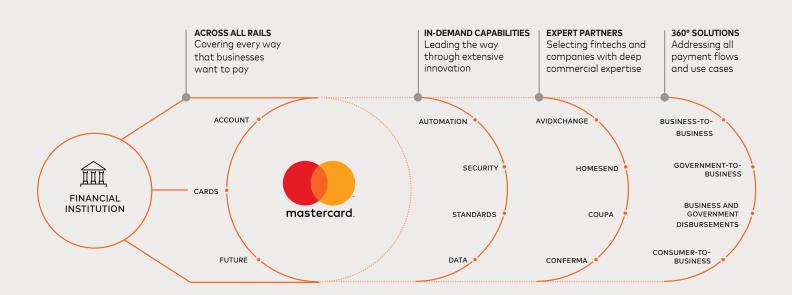
Mastercard's respected capabilities and expertise in the global payments business now exceed five decades.

As business payments transforms, Mastercard continues to adapt its capabilities, delivering client solutions at the forefront of modern technology. Through research and development, forward-thinking strategy, and acquisitions and partnerships, Mastercard delivers business payment solutions across multiple use cases.

Mastercard is ready for Industry 4.0.

Mastercard's vision (*Figure 15*) is to work with its bank partners to shape the future of business payments – making them faster, simpler, and more intelligent, and then delivering the solutions that the banks' corporate clients need in one place. Mastercard has become a network of networks, consistently and directly connected to the rapidly changing and improving payments ecosystem.

FIGURE 15: A SMARTER WAY OF DOING BUSINESS



Source: Mastercard Business Payments



PAYMENT PLATFORMS AND INFRASTRUCTURE

Vocalink was acquired by Mastercard in 2017, powering The Clearing House RTP system. Vocalink was responsible for delivering both the United Kingdom's Faster Payments Service (FPS) and Singapore's Fast and Secure Transfers (FAST), both real-time rails. Mastercard is now poised to work with the market for expanded use of the newest U.S. RTP rails, while promoting communications standards across the globe.

Mastercard Send® is a global push-payments platform that delivers domestic funds directly to card accounts in near real-time. It enables secure cross-border payments to 100 markets with connections to bank accounts, cards, mobile wallets, and cash-out locations

Commercial cards are the foundation for Mastercard's long-standing reputation for delivering superior card products and services to banks and, in turn, their corporate clients. Mastercard In Control – an industry-leading virtual cards technology has been widely adopted and now easily integrates with broader payables capabilities delivered by banks and other payment services providers. Mastercard travel, purchasing, multi, and fleet card network solutions continue to grow around the world.

VALUE-ADDED SERVICES



Data and security

are not only traditional mainstays of Mastercard's product and service capabilities (which include Mastercard Smart Data and Mastercard In Control®), but they continue to improve, with Vocalink Analytics adding yet another level of risk management solutions as other channels become ubiquitous. Payments consulting and thought leadership to the industry are also available through Mastercard Advisors.



Automated payables

have become a key capability of Mastercard with the launch of the Mastercard B2B Hub® in 2017. This solution allows midsize businesses to finally eliminate paper processes by converting invoices to digital form, then seamlessly pushing out payments through automated workflow for various payment types.



Mastercard spend optimization services

make it easy for financial institutions and their clients to develop effective payment strategies through automating, streamlining, and creating efficiencies.

Optimization also provides a structured repeatable process that paves the way for continual improvements, thus optimizing working capital effectiveness for both buyers and suppliers.



Merchant acceptance

is a key priority, as Mastercard works with the industry to promote merchants' acceptance of electronic payments for all business circumstances, including the massive trend toward B2B marketplace commerce.



Conclusions

CONCLUSIONS

Being on the cusp of the Fourth Industrial Revolution creates massive challenges for all industry vertical segments, especially banks.

As the virtual and physical worlds merge, creating expectations for real-time financial services, many institutions struggle simply to keep up, let alone get ahead of the curve.

Providing business capabilities that will be relevant in 2022 requires vision, modern digital capabilities, the right partnerships, and global reach. Even the largest financial institutions have difficulty managing the continuous changes underway – not only with technology, but with the numerous market regulatory compliance requirements. Succeeding with business payments solutions that play in the coming world of 2022 requires partners with forward vision, technical savvy, global experience, and a history of success in delivering best-in-class products and services.

Mastercard recognizes these challenges and has been staying ahead of the curve through business partnerships that extend the Mastercard network and capabilities beyond cards and into modern business payments befitting all use cases, ensuring that those serviced will succeed in 2022 and beyond.



ENDNOTES

World Economic Forum

https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/

"Forbes

 $\underline{\text{https://www.forbes.com/sites/bernardmarr/2016/06/20/what-everyone-must-know-about-industry-4-0/\#2ea15db1795f}$

iii BIS, Statistics

https://www.bis.org/cpmi/publ/d172.htm

ⁱ Federal Reserve

https://www.federalreserve.gov/paymentsystems/fr-payments-study.htm

√ Shine

https://www.shine.cn/biz/company/1802281049/

vi Herbert Smith Freehills

https://www.herbertsmithfreehills.com/latest-thinking/open-banking-developments-in-asia-pacific

vii Forbes

 $\frac{https://www.forbes.com/sites/agoodman/2017/03/07/new-virtual-credit-cards-for-businesses-eliminating-the-need-for-checks/\#6c773b352e6d$

viii Mercator Advisory Group

https://www.mercatoradvisorygroup.com/

Reports/U_S_-Commercial-Cards--The-Drive-Toward-Mainstream-Payables/

ix CB Insights

https://www.cbinsights.com/research/fintech-startups-deals-funding/

* ACI Worldwide

https://www.aciworldwide.com/-/media/files/collateral/trends/2018-global-payments-insight-retail-banking.pdf

xi FRB of Atlanta

https://www.frbatlanta.org/rprf/publications/2016/05/risks-in-faster-payments.aspx

xii Financial Times

https://www.ft.com/content/455b027c-27d4-11e8-b27e-cc62a39d57a0

xiii I-scoop

https://www.i-scoop.eu/digital-transformation/

