

Disintermediation is amping up the sense of competition between FIs and fintechs, but also enabling many opportunities for innovation and cooperation between them-with both sides having much to gain.

Authored by Erika Baumann, Aite-Novarica Group Edited by Katy Burne, BNY Mellon

For questions or further information, please contact Carl.Slabicki@bnymellon.com

Contents

EXECUTIVE SUMMARY 4
INTRODUCTION 6 Methodology 6
A CHANGING LANDSCAPE 7 The pace of change 8
BANK SATISFACTION 9 Gaps by region 12
TECHNOLOGY 13
PARTNERING AND WHITE LABELING 15
DISINTERMEDIATION TREND 16 Fintech use by region 19
FUTURE SYNERGIES 20
CONCLUSION 22

Executive Summary

regulatory burdens and cost pressures, it can be challenging for financial institutions (FIs) to keep up with the pace of change and abundance of choice in payments. Because of this lag, businesses can sometimes be enticed to circumvent their banks by engaging directly with fintechs to solve for points of friction in the payments process.

This so-called "disintermediation" is amping up the sense of competition between FIs and fintechs, but also enabling many opportunities for innovation and cooperation between them — with both sides having much to gain.

The potential for collaboration is driving a surge in innovation as the industry races to meet new end-user demands. The future of payments should see a lot more synergies between banks and fintechs as they collaborate on new ways to drive growth.

In this research, several supporting trends have been identified:

Many FIs are modifying their strategy roadmaps to partner and collaborate

With fintechs to bring better, more robust capabilities to market quicker than they could by utilizing only internal resources and development teams.

Overall, businesses report that they would actually rather partner with an

 ${f FI}$ than have to seek other third-party fintech providers.

- Some 62% of businesses are already working with a fintech provider and 28% are working with multiple fintech providers.
 - Only 34% of businesses feel that their FI fully understands their needs when it comes to payments. This represents a large opportunity for FIs to invest and differentiate to meet the individual needs of their end clients, including by partnering up with other banks or purchasing white-labeled solutions.
- Almost 60% of businesses report that the speed of payment and settlement is the biggest gap in their current payment strategy.
 - An overwhelming 88% of businesses have already made a significant, or somewhat significant, investment in improving their payment technologies or processes, and this number is expected to remain high.



Fintech

DEFINITION

At its most fundamental level, the word "fintech" refers simply to a provider of financial services technology. This can incorporate anything from existing banks, through to large-scale technology firms and established legacy providers, as well as emerging fintech players. In its popular use however, "fintech" is primarily used to refer to technology providers that offer disruptive solutions that challenge legacy business models and processes within financial services.

Introduction

There has never been a more exciting time to be involved in the business of payments and payment technology. Automation and value-added payment capabilities are removing manual intervention, allowing for instant settlement, and generating opportunities for market differentiation among businesses and banks. At the same time, business end-users have greater choice in payment providers, and significantly higher expectations and demands for robust, real-time payment capabilities than ever before.

Banks and other financial institutions, particularly small and midsize FIs, are challenged with meeting the needs of an increasingly sophisticated client base, while providing best-in-class cash management and payment solutions to their customers. Businesses also have the challenge of deciphering the many payment options in the market while still focusing on their core business activities.

With the increase in the pace of change in the industry, businesses and FIs can create beneficial outcomes regardless of their current state, so long as they consider corporate end-user needs at the center of efforts.

With FIs focusing on their core competencies, distribution networks and infrastructure resiliency, and fintechs bringing more agile thinking and innovation, the possibilities in modernizing payments are set to expand further still. FIs and fintechs partnering together, or even FIs partnering with other FIs, provides a field that is ripe for even greater possibilities.

METHODOLOGY

This report is based on an online survey of 790 employees of midsize and large corporates in seven North American and European countries (Canada, France, Germany, Italy, Spain, U.K., and the U.S.) that Aite-Novarica Group undertook in the second quarter of 2022. Respondents are employed in operations, finance, accounting, payments strategy or treasury/control and are knowledgeable about their organizations' finance, treasury, payment operations, methods and processes. Organizations represented in the pool of respondents generate annual revenue/turnover of at least US\$20 million, GBP10 million, or EUR10 million, respectively. Aite-Novarica Group estimates that the data for the total sample have a three-point margin of error at the 95% level of confidence.

— A Changing Landscape

Constant change is now accepted in the world of payments; it is how to prioritize and monetize that change that has taken center stage. FIs of all sizes, including top global banks all the way down to local community banks and credit unions, have to decide which payment technologies to invest in, and how to translate investments into a positive go-to-market strategy.

Historically, many FIs have had the reputation of lagging behind industry needs and expectations. The COVID-19 pandemic highlighted for many businesses the areas of weakness in internal processes, but also in the offerings of their primary FI. Solutions typically take considerable time from concept development to full market roll-out, proving not nearly as nimble as end-users would have hoped.

1	Regulation and compliance	Every product enhancement, new product development o third-party partnership must go through extensive vetting.
2	Legacy infrastructure	The history of legacy infrastructure takes time to unwind and modernize. To do this takes deep internal knowledge of legacy procedures and systems, long-term resource commitment, and of course commitment to funding.
3	Complex landscape	In the U.S. alone there are over 11,000 FIs. With such a fragmented structure, it is difficult to foster an environment of consistency. This creates proprietary processes and systems that are difficult to interoperate.
4	Competing priorities	The list of available payment technologies and modernization tools continues to get longer, making it difficult to keep up with end-user needs while shuffling the roadmap.

COMMERCIAL PAYMENT TRENDS | 6

FIs have an advantage in that they hold banking licenses, while fintechs are reliant on third parties.

The COVID-19 pandemic, while highlighting some gaps in payment solutions like speed of settlement, reliance on paper items being delivered in the mail, and fragmented reconciliation processes, has also increased the speed of innovation to fill these gaps.

Market solutions to automate payments were available prior to the pandemic, but businesses have had a renewed interest in these tools and industry leading providers have eagerly accelerated development activities to meet the demand. However, smaller and midsize FIs have not typically led the innovation race, and businesses have taken note of this dynamic.

THE PACE OF CHANGE

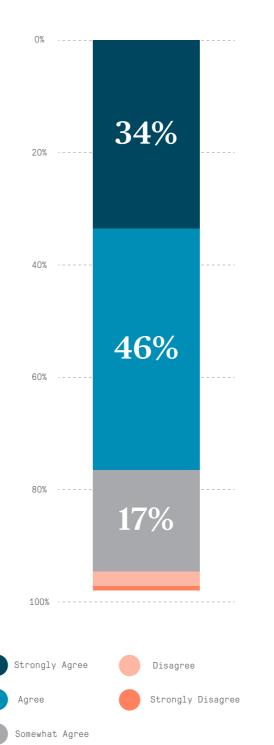
While emerging fintech vendors garner much of the hype and attention with the broader payments landscape, innovation and disruption are now emerging from fintech providers of all sizes.

The growth of emerging fintech vendors has significantly increased levels of competition within the broader fintech and financial services space. But FIs have an advantage in that they often hold banking licenses, while fintechs are reliant on third parties. This includes compliance with regulatory requirements as well as know-your-customer (KYC), anti-money laundering (AML), funding and stability requirements that constitute the core strength and stability of an FI. While fintechs are contributing to innovation, they have some market dependency and reliance on FIs.

FIGURE 1

How Businesses View FI Understanding of Their Needs

Q: HOW MUCH DO YOU AGREE WITH THE FOLLOWING STATEMENT? "OUR FINANCIAL INSTITUTION UNDERSTANDS OUR ORGANIZATIONS' NEEDS SPECIFIC TO PAYMENT INITIATIVES." (N-790)



Bank Satisfaction

With a few top-tier exceptions, FIs have a reputation for lagging behind in their use of technology.

There are some FIs, particularly large banks with a lot of resources to invest, that consistently show leadership and innovation and take pride in being early adopters of new technology. Many of these leading FIs have already recognized the benefits of partnering with fintechs and have dedicated resources and budget to creating differentiated value-added payment and cash management solutions. Smaller FIs tend to be followers, waiting until solutions are already industry standard before beginning to implement them. But for FIs that are fast followers or mass adopters, partnerships either with fintechs or with larger, market-leading banks should be explored.

This creates an environment where many businesses are engaged with FIs that are not able to fully meet their needs and expectations. In fact, research shows that only about a third (34%) of businesses surveyed think their FI fully understands their payment needs (Figure 1).

SOURCE: AITE-NOVARICA GROUP | Base: 790 employees of mid-sized and large North American and European organizations

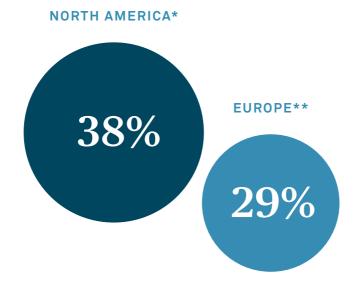
COMMERCIAL PAYMENT TRENDS | 8 COMMERCIAL PAYMENT TRENDS | 9

There is also a significant difference between how North American and European businesses view the ability of their FI to understand their needs. Amid a market perception that the European banking and payments technologies are ahead of, or even superior to, North American offerings, data throughout this report suggests otherwise, including when it comes to their general level of confidence in understanding the payment needs of customers (Figure 2).

A combination of factors has left businesses with gaps and pain points in their payment processes, and a circumstance ripe for disruption. Many of these factors are magnified at smaller FIs, as evidenced by the significant difference in confidence in understanding of needs by FI size. Only 29% of businesses that are engaged with a smaller, regional FI believe that their FI fully understands their payment needs (Figure 3).

North American and European Confidence in FI Understanding of Payment Initiatives

PERCENTAGE OF RESPONDENTS STRONGLY
AGREEING THAT THEIR FINANCIAL INSTITUTION
UNDERSTANDS THEIR ORGANIZATION'S NEEDS
SPECIFIC TO PAYMENT INITIATIVES (AMONG
EMPLOYEES OF MID- AND LARGE-SIZED
ORGANIZATIONS).

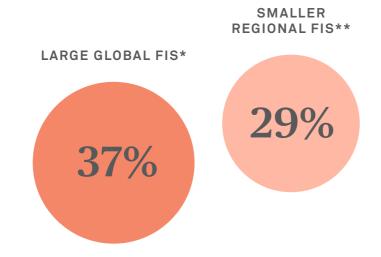


SOURCE: AITE-NOVARICA GROUP | *Base: 399 | **Base: 391

FIGURE 3

FI Understanding of Payment Initiatives by FI Size

PERCENTAGE OF RESPONDENTS
STRONGLY AGREEING
THAT THEIR FINANCIAL
INSTITUTION UNDERSTANDS
THEIR ORGANIZATION'S
NEEDS SPECIFIC TO PAYMENT
INITIATIVES (AMONG EMPLOYEES
OF MID- AND LARGE-SIZED
ORGANIZATIONS).

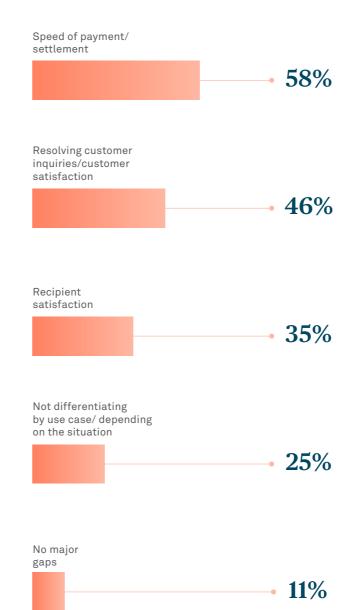


SOURCE: AITE-NOVARICA GROUP | *Base:555 | **Base:217

FIGURE 4

Biggest Gaps in Payment Strategy

Q: WHAT DO YOU BELIEVE ARE THE BIGGEST GAPS IN YOUR ORGANIZATION'S PAYMENT STRATEGY OR PROCESSES? (SELECT ALL THAT APPLY)



BIGGEST GAPS

Gaps in a business's payment strategy or process can have myriad negative effects on its activities. Some of the most critical ones are resources spent on manual tasks instead of focusing on more strategic ones; less visibility into balances and cash positions for adequate cashflow forecasting; as well as poor decision-making capabilities based on this information and less than optimal working capital positioning.

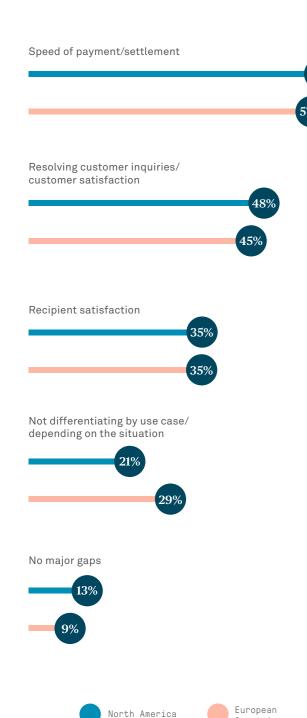
Many businesses experience several of these factors at the same time, which has a significant impact on their bottom line and causes negative impacts to shareholders. The biggest gap reported is the speed of payments and settlements. This means not just the time it takes for funds to be available in an account, but also the time it takes to reconcile that payment and apply it to the general ledger or close an outstanding invoice. Almost 60% of businesses report that this is the biggest gap in their payment strategy or process (Figure 4).

Other gaps, like resolving customer issues, recipient satisfaction, delays and use case differentiation are also becoming a significant factor in the overall sustainability and success of the business. FIs need to focus on these business gaps when prioritizing strategic roadmap initiatives as well as when identifying potential solution partners.

SOURCE: AITE-NOVARICA GROUP | *Base: 790

Biggest Gaps in Payment Strategy by Region

Q: WHAT DO YOU BELEIVE ARE THE BIGGEST GAPS IN YOUR ORGANIZATION'S PAYMENT STRATEGY OR PROCESSES? (SELECT ALL THAT APPLY)'



SOURCE: AITE-NOVARICA GROUP | *Base: 399 **Base: 391

GAPS BY REGION

With faster payments having been available much longer in Europe, it is surprising to see no significant difference in payment processes between North America and Europe (Figure 5). The data set further demonstrates the disconnect between FIs and their clients in offering and implementing robust payment solutions to meet end-user needs. These unmet needs form the foundations of why some businesses are bypassing some of their FIs and considering alternative providers.

Furthermore, some FIs are losing significant recurring revenue from payments and treasury management fees, as well as deposits. The revenue from these types of services is also attached to very "sticky" services that can be an anchor of predictable revenue and that take some effort for clients to unwind.

For smaller FIs, leveraging the knowledge of larger banks that are leaders in the space as a fintech partner can be a very effective path to implementing solutions that fill these end-user gaps.

— Technology

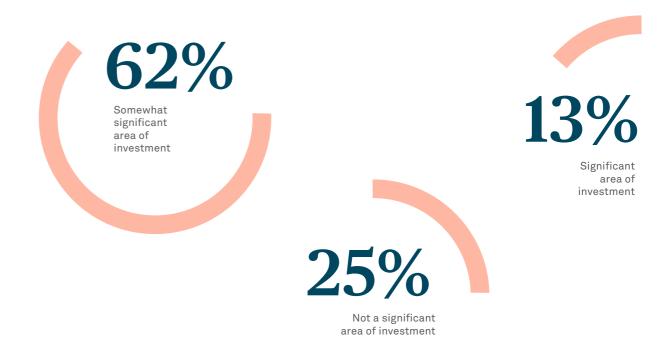
Many businesses are anticipating having to make significant investments in payment technology capabilities to close the gaps in their current offerings. If an FI isn't meeting their needs, that investment may go elsewhere — either to other FIs or to niche fintech providers. An overwhelming 87% of businesses have already made a significant, or somewhat significant investment, in improving their payments technology or processes (Figure 6).

Because the demands for more robust offerings are happening at a quicker pace than ever, it is not too late for FIs to capture growing market share. Also, businesses themselves must meet their own

FIGURE 6

Past Investment in Payments Technology

Q: HOW SIGNIFICANT WAS YOUR ORGANIZATION'S INVESTMENT IN IMPROVING PAYMENTS TECHNOLOGY OR PROCESSES IN THE PAST 3 YEARS?*

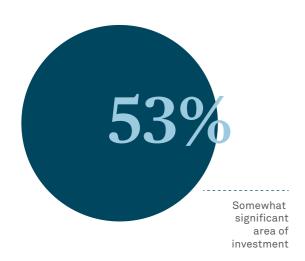


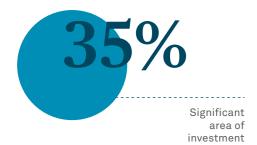
SOURCE: AITE-NOVARICA GROUP | *Base: 787

COMMERCIAL PAYMENT TRENDS | 12 COMMERCIAL PAYMENT TRENDS | 13

Planned Investment in Payments Technology

Q: HOW SIGNIFICANT DO YOU EXPECT YOUR ORGANIZATION'S INVESTMENT IN IMPROVING PAYMENTS TECHNOLOGY TO BE IN THE NEXT 24 TO 36 MONTHS?*







customer demands, which include faster settlements and a better transactional experience. Those businesses that plan to make a significant, or somewhat significant, investment in improving their payment technologies or processes is strikingly high at 88% (Figure 7).

This suggests that there is still an abundance of market opportunity and potential return on investment for payment providers, both among FIs and fintechs that are coming to market with comprehensive payment services.

As FIs are refining strategic roadmaps and also planning for investment in new and more robust capabilities to capture new market opportunities, it is important to also consider the opportunity cost of lagging investment. Businesses that are not able to solve their payment needs with their current FI are open to seeking a solution with other FIs as well as with fintechs directly.

— Partnering and White Labeling

The popularity of mutually beneficial cooperation between FIs and fintechs is becoming quite prominent in the race to capture the technology investment dollars and recurring transactional revenues.

FIs are growing more adept and secure in working with other providers and making these partnerships and integrations seamless to end-users. This is significant because as the volume of payments continues to rise, there is more market share to go around and more possibilities for symbiosis for all FIs.

It's also the case that small to midsize banks are using larger banks in the capacity of fintechs. White labeling and integrating technology solutions can help those firms to mitigate some of the concerns that can exist when partnering with fintechs. The risk of a large bank failing, overlooking compliance needs, or changing strategic direction due to M&A activity is negligible.

Regardless of the structure, the benefits of partnerships also are undeniable. They include a quicker time to market to close critical gaps, the ability to offer solutions that would have otherwise been out of scope due to resources and development constraints, and the opportunity to grow market share and prevent loss of existing market share.

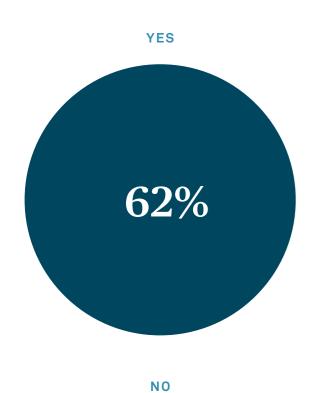
FI partnerships, both with fintechs and other FIs, are creating an environment of intense innovation. This includes new ways to utilize artificial intelligence and machine learning with natural language capabilities and automation that can reduce or remove points of friction from the payments process. The fruits of that work are only now beginning to emerge.

Small to midsize banks are using larger banks in the capacity of fintechs.

SOURCE: AITE-NOVARICA GROUP | *Base: 780

Businesses Using a Fintech Provider

Q: DOES YOUR ORGANIZATION CURRENTLY WORK WITH ANY FINTECH FIRMS DIRECTLY FOR CASH MANAGEMENT OR PAYMENT SERVICES?*



38%

DisintermediationTrend

Despite the white labeling trend with banks, the number of businesses approaching fintechs is growing. That's because fintechs actively target businesses with niche solutions that solve critical payment process gaps. Not all of the innovation of fintechs is unwelcome to banks. However, disintermediation is a critical threat to fee-based FI revenue from business clients.

Table A identifies some of the key differentiators between fintech vendors and many FI offerings, highlighting some of the strengths and opportunities of each.

About 60% of businesses are currently working with a fintech vendor for core cash management or payment offerings (Figure 8), a number that is experiencing a dramatic growth trend according to previous trends. These include services like integrated receivables, information reporting, cashflow forecasting, and disbursement services including automated payables – all critical services that have historically been provided by FIs.

These areas are ripe for disruption because FIs either do not yet offer these solutions or they offer a solution that is not robust like fintechs and/ or other competing bank solutions. Alternatively, sometimes they are not able to effectively communicate the value-added benefits and integration process for implementation.

COMMERCIAL PAYMENT TRENDS | 16

SOURCE: AITE-NOVARICA GROUP | *Base: 780

Fintech vendors are especially Most FIs do not have the **IMPLEMENTATION** effective at taking the IT resources, expertise or structure **EXPERIENCE** burdens off businesses. to support customer IT tasks. Solutions tend to be very FIs tend to provide solution sets, niche, which means fintech meeting a series of needs all in **BREADTH OF OFFERING** one place, but generally not all vendors often have a single solution that is best in class. of these are best in class. **Businesses** implementing Fintechs are adapt at solutions with FIs often have integrating with businesses' INTEGRATION CAPABILITIES backend, ERP and accounting to rely on their internal IT software as a core part of their resources to integrate FI solution offering. solutions. Limited value-added information Websites and marketing outside of product descriptions. materials can be flashy MARKETING MATERIALS and flush with self-service Marketing material focuses on information gathering. capability descriptions. FIs offer a slower development Fintechs offer a nimble and process due to siloed structure, responsive development TIME TO MARKET process, and quick time to a high number of competing market both internally and for priorities and a lack of robust client implementations. development teams. Heavily regulated and required Not regulated and remain to comply with KYC, AML, as dependent on third parties like REGULATORY REQUIREMENTS banks, potentially putting risk well as funding and stability

burden on customer.

FINTECH VENDORS

FINANCIAL INSTITUTIONS

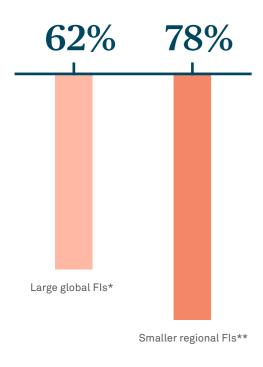
requirements.

SOURCE: AITE-NOVARICA GROUP | *Base: XXX

TABLE A

European Businesses Using a Fintech Provider

Q: DOES YOUR ORGANIZATION CURRENTLY WORK WITH ANY FINTECH FIRMS DIRECTLY FOR CASH MANAGEMENT OR PAYMENT SERVICES?



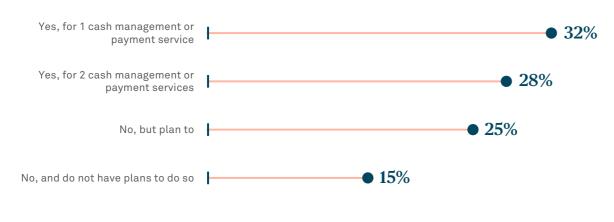
Interestingly, the trend is even more prevalent in European countries than in North America. A staggering 78% of European businesses are already utilizing a fintech vendor directly for cash management or payment services (Figure 9). This again is interesting set in the context of a market perception that European FIs provide ecosystems and products that are much further advanced than their North American counterparts. European banks should be paying particular attention to the elevated rapid growth of disintermediation.

Due to the ease of integration, many businesses have recognized that fintechs are open to collaborating with each other and are willing to provide easy integration between solutions. Because of this, about 30% of businesses say they are already working with two or more fintechs (Figure 10), opening up the possibilities for businesses to use providers a la carte. This is despite the consideration that not all end-clients are comfortable using fintechs for core services, as there can be question marks around their resiliency compared to traditional FIs.

FIGURE 10

Businesses Using Multiple Fintech Providers

Q: DOES YOUR ORGANIZATION CURRENTLY WORK WITH ANY FINTECH FIRMS DIRECTLY FOR CASH MANAGEMENT OR PAYMENT SERVICES?***

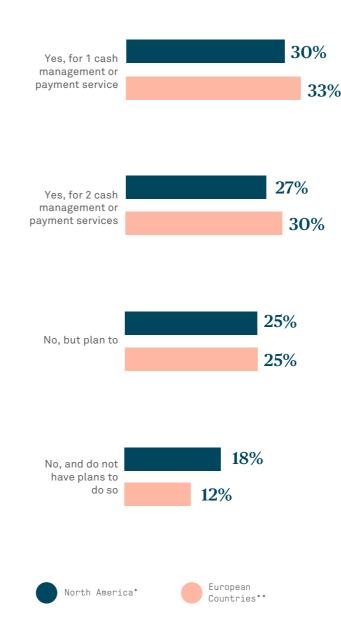


SOURCE: AITE-NOVARICA GROUP | *Base: 265 | **Base: 120 | ***Base: 729

FIGURE 11

Regional Differences in Businesses Using Fintech Vendors

Q: DOES YOUR ORGANIZATION CURRENTLY WORK WITH ANY FINTECH FIRMS DIRECTLY FOR CASH MANAGEMENT OR PAYMENT SERVICES?



FINTECH USE BY REGION

For banks partnering with fintechs, the primary benefit is a quicker time to market to close critical product gaps and the ability to claim an intentional fintech partnership strategy. These partnerships are creating robust product offerings that have never been seen in the payments landscape before, including new ways to utilize artificial intelligence and machine learning.

But it is important to acknowledge some of the regional differences in payments and fintech providers, primarily when it comes to the regulatory environment and market drivers for innovation. In North America, while banks are of course highly regulated, there are no mandates around data-sharing or open banking, so change is driven by the marketplace, rendering it slow and fragmented.

In Europe, the dynamic is exactly the opposite. SEPA (the Single Euro Payments Area) and PSD2 (Payment Services Directive 2) have created some regional ubiquity in offerings, and in the scalability and accessibility of those offerings. Interestingly, these two opposite landscapes still create the same fintech vendor disintermediation dynamic with similar percentages of businesses partnering with multiple fintech vendors (Figure 11).

It is also remarkable that North America has a much more fragmented landscape than Europe, yet there is still little to no regional differentiation in business behaviors. The dynamic of bank disintermediation crosses regional differences and is everyone's, and anyone's, problem to solve.

SOURCE: AITE-NOVARICA GROUP | *Base: 384 | **Base: 345

Businesses report that they would actually rather partner with an FI than have to seek other thirdparty fintech providers.

Future Synergies

For many years, FIs and fintechs were seen as foes and there is still some element of truth to this as they are often competing for market share in the same space. Lately there are more cases of collaboration than competition.

Some businesses have been able to completely disintermediate their FI — they are not using an FI at all for any core cash management or payment needs. For these companies, payment choice and connecting to faster payment rails is the primary motivator of such a drastic change (Figure 12). Overall, however, businesses report that they would actually rather partner with an FI than have to seek other third-party fintech providers.

There is some concern over the stability of fintechs, however, and what the options and implications would be if a fintech were to shut down abruptly. There is little to no fear of this with FIs. FIs are also perceived to be more secure than fintechs with a proven history of fraud monitoring and fraud prevention tools and minimal client impact due to M&A activities.

Key product areas that are particularly susceptible to disintermediation include value-added services that create operational efficiencies and increased useability, including integrated receivables, automated payables, bill pay and cash-flow forecasting. These are core cash management and payment services historically offered by FIs.

Almost half of businesses using fintechs are looking for more automated payment processes (Figure 13). This means that businesses want to remove manual processes that are resource-intensive as well as increase the availability of funds and posting of remittances that impact working capital.

Even with the potential risks and considerations, it is increasingly common for FIs to partner with fintechs. The advantages for the fintech include access to an array of potential clients that are already engaged with Fls. There are factors that Fls must consider when selecting fintech partners, however, including culture, integration capabilities, costs and servicing models. The biggest concerns are if the fintech becomes insolvent and/or is bought by a competitor bank or another fintech, shifting its priorities and partnership model.

FIGURE 12

Why Businesses Are Using Fintech Vendors Instead of an FI

Q: WHAT ARE THE MAIN REASONS YOUR ORGANIZATION WORKS WITH A FINTECH FIRM **INSTEAD OF A FINANCIAL INSTITUTION?***

Why Businesses Are Using Fintechs Instead of an FI

45%

Better or automated

Better integration

Better

functionality

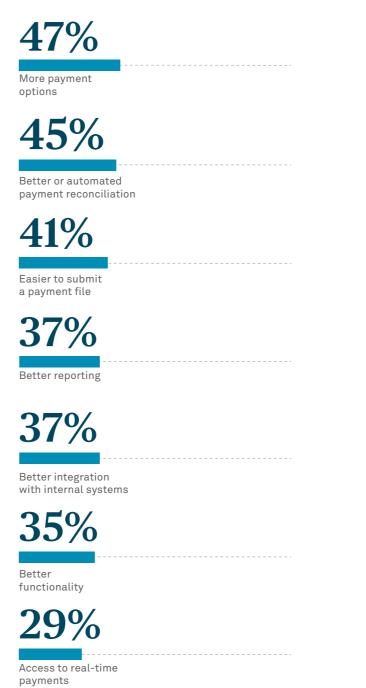
More payment

with internal systems

payment reconciliation

FIGURE 13

Q: WHAT ARE THE MAIN REASONS YOUR ORGANIZATION WORKS WITH A FINTECH FIRM IN ADDITION TO ITS FINANCIAL INSTITUTION?**



SOURCE: AITE-NOVARICA GROUP | *Base: 51 Employees of midand large-sized organizations that work with a fintech in

addition to a financial institution

Acess to real-time payments Fasier to submit a payment file

Better Reporting

SOURCE: AITE-NOVARICA GROUP | **Base: 436 employees or mid- and large-sized organizations that work with a fintech in addition to a financial institution

Conclusion

- Businesses have more choice of payment services providers than ever before.

 Solutions that have historically been provided by banks are now available from a variety of fintech providers that are adept in positioning solutions to solve points of friction in the payments process. To compete, Fls need to have a deep understanding of their corporate customers' needs in order to earn and keep their business.
- Many businesses are actively investing in payments technology, yet most do not believe that their primary FI fully understands their payments needs. This leads to market opportunity for fintechs as well as FIs that have reacted to market demand by developing robust payment solutions that fill the biggest gaps businesses have in their payment strategy. These gaps include speed of payments, the ability to resolve customer inquiries, recipient satisfaction and the need to differentiate disbursement method by use case.
- Partnerships and white labeling solutions are the quickest way for FIs to close these gaps to remain competitive or to catch up to peer institutions that have been executing a superior technology strategy. **Businesses would actually rather partner with an FI.**
- Smaller FIs, in particular, find it beneficial to partner with larger FIs that have proven stability, industry experience and perspective unique to FIs vs. alternative payment solution providers. It is not too late for FIs to take action and implement a strategic roadmap that considers how to solve the biggest challenges of business customers through such mutually beneficial partnerships.

BNY Mellon is the corporate brand of The Bank of New York Mellon Corporation and may be used as a generic term to reference the corporation as a whole and/or its various group entities. This material and any products and services may be issued or provided under various brand names of BNY Mellon in various countries by duly authorized and regulated subsidiaries, affiliates, and joint ventures of BNY Mellon, which may include any of those listed below:

The Bank of New York Mellon, a banking corporation organized pursuant to the laws of the State of New York, whose registered office is at 240 Greenwich St, NY, NY 10286, USA. The Bank of New York Mellon is supervised and regulated by the New York State Department of Financial Services and the US Federal Reserve and is authorized by the Prudential Regulation Authority ("PRA") (Firm Reference Number: 122467).

The Bank of New York Mellon operates in the UK through its London branch (UK companies house numbers FC005522 and BR000818) at One Canada Square, London El4 5AL and is subject to regulation by the Financial Conduct Authority ("FCA") at 12 Endeavour Square, London, E20 IJN, UK and limited regulation by the PRA at Bank of England, Threadneedle St, London, EC2R 8AH, UK. Details about the extent of our regulation by the PRA are available from us on request.

The Bank of New York Mellon SA/NV, a Belgian limited liability company, registered in the RPM Brussels with company number 0806.743.159, whose registered office is at 46 Rue Montoyerstraat, B-1000 Brussels, Belgium, authorized and regulated as a significant credit institution by the European Central Bank ("ECB") at Sonnemannstrasse 20, 60314 Frankfurt am Main, Germany, and the National Bank of Belgium ("NBB") at Boulevard de Berlaimont/de Berlaimontlaan 14, 1000 Brussels, Belgium, under the Single Supervisory Mechanism and by the Belgian Financial Services and Markets Authority (FSMA) at Rue du Congrès/Congresstraat 12-14, 1000 Brussels, Belgium for conduct of business rules, and is a subsidiary of The Bank of New York Mellon.

The Bank of New York Mellon SA/NV operates in Ireland through its Dublin branch at Riverside II, Sir John Rogerson's Quay Grand Canal Dock, Dublin 2, DO2KV60, Ireland and is registered with the Companies Registration Office in Ireland No. 907126 & with VAT No. IE 9578054E. The Bank of New York Mellon SA/NV, Dublin Branch is subject to limited additional regulation by the Central Bank of Ireland at New Wapping Street, North Wall Quay, Dublin 1, DOI F7X3, Ireland for conduct of business rules and registered with the Companies Registration Office in Ireland No. 907126 & with VAT No. IE 9578054E.

The Bank of New York Mellon SA/NV operates in Germany through its Frankfurt branch "The Bank of New York Mellon SA/NV, Asset Servicing, Niederlassung Frankfurt am Main", and has its registered office at MesseTurm, Friedrich-Ebert-Anlage 49, 60327 Frankfurt am Main, Germany. It is subject to limited additional supervision by the Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaußicht, Marie-Curie-Str. 24-28, 60439 Frankfurt, Germany) under registration number 122721.

The Bank of New York Mellon SA/NV operates in the Netherlands through its Amsterdam branch at Strawinskylaan 337, WTC Building, Amsterdam, 1077 XX, the Netherlands. The Bank of New York Mellon SA/NV, Amsterdam Branch is subject to limited additional supervision by the Dutch Central Bank ("De Nederlandsche Bank" or "DNB") on integrity issues only (registration number 34363596). DNB holds office at Westeinde 1, 1017 ZN Amsterdam, the Netherlands.

The Bank of New York Mellon SA/NV operates in Luxembourg through its Luxembourg branch at 2-4 rue Eugene Ruppert, Vertigo Building - Polaris, L. 2453, Luxembourg. The Bank of New York Mellon SA/NV, Luxembourg Branch is subject to limited additional regulation by the Commission de Surveillance du Secteur Financier at 283, route d'Arlon, L-1150 Luxembourg for conduct of business rules, and in its role as UCITS/AIF depositary and central administration agent.

The Bank of New York Mellon SA/NV operates in France through its Paris branch at 7 Rue Scribe, Paris, Paris, 75009, France. The Bank of New York Mellon SA/NV, Paris Branch is subject to limited additional regulation by Secrétariat Général de l'Autorité de Contrôle Prudentiel at Première Direction du Contrôle de Banques (DCB I), Service 2, 61, Rue Taitbout, 75436 Paris Cedex 09, France (registration number (SIREN) Nr. 538 228 420 RCS Paris - CIB 13733).

The Bank of New York Mellon SA/NV operates in Italy through its Milan branch at Via Mike Bongiorno no. 13, Diamantino building, 5th floor, Milan, 20124, Italy. The Bank of New York Mellon SA/NV, Milan Branch is subject to limited additional regulation by Banca d'Italia - Sede di Milano at Divisione Supervisione Banche, Via Cordusio no. 5, 20123 Milano, Italy (registration number 03351).

The Bank of New York Mellon SA/NV operates in Denmark as The Bank of New York Mellon SA/NV, Copenhagen Branch, filial af The Bank of New York Mellon SA/NV, Belgien, and has its registered office at Tuborg Boulevard 12, 3. DK-2900Hellerup, Denmark. It is subject to limited additional regulation by the Danish Financial Supervisory Authority (Finanstilsynet, Århusgade 110, 2100 København Ø).

The Bank of New York Mellon SA/NV operates in England through its London branch at 160 Queen Victoria Street, London EC4V 4LA, UK, registered in England and Wales with numbers FC029379 and BR014361. The Bank of New York Mellon SA/NV, London branch is authorized by the ECB (address above) and is deemed authorised by the Prudential Regulation Authority (address above). Subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. Details of the Temporary Permissions Regime, which allows EEA-based firms to operate in the UK for a limited period while seeking full authorisation, are available on the Financial Conduct Authority's website.

The Bank of New York Mellon SA/NV operates in Spain through its Madrid branch with registered office at Calle José Abascal 45, Planta 4ª, 28003, Madrid, and enrolled on the Reg. Mercantil de Madrid, Tomo

41019, folio 185 (M-727448). The Bank of New York Mellon, Sucursal en España is registered with Banco de España (registration number 1573).

Regulatory information in relation to the above BNY Mellon entities operating out of Europe can be accessed at the following website: https://www.bnymellon.com/RID.

For clients located in Switzerland

The information provided herein does not constitute an offer of financial instrument or an offer to provide financial service in Switzerland pursuant to or within the meaning of the Swiss Financial Services Act ("FinSA") and its implementing ordinance. This is solely an advertisement pursuant to or within the meaning of FinSA and its implementing ordinance.

Please be informed that The Bank of New York Mellon and The Bank of New York Mellon SA/NV are entering into the OTC derivative transactions as a counterparty, i.e. it is acting for its own account or for the account of one of its affiliates. As a result, where you enter into any OTC derivative transactions with us, you will not be considered a "client" (within the meaning of the FinSA) and you will not benefit from the protections otherwise afforded to clients under FinSA.

The Bank of New York Mellon, Singapore Branch, is subject to regulation by the Monetary Authority of Singapore. The Bank of New York Mellon, Hong Kong Branch (a branch of a banking corporation organized and existing under the laws of the State of New York with limited liability), is subject to regulation by the Hong Kong Monetary Authority and the Securities & Futures Commission of Hong Kong.

For recipients of this information located in Singapore: This material has not been reviewed by the Monetary Authority of Singapore.

The Bank of New York Mellon is regulated by the Australian Prudential Regulation Authority and also holds an Australian Financial Services Licence No. 527917 issued by the Australian Securities and Investments Commission to provide financial services to wholesale clients in Australia.

For clients located in Brunei

The Bank of New York Mellon does not have a banking license under the Banking Order 2006 of Brunei, or capital market service license under the Securities Market Order 2013 to carry out banking business, or to provide investment advice to clients in, or to undertake investment business, in Brunei.

For clients located in Malaysia

None of the Bank of New York Mellon group entities, including the Bank of New York Mellon, Kuala Lumpur, Representative Office, are registered or licensed to provide, nor does it purport to provide, financial or capital markets services of any kind in Malaysia under the Capital Markets and Services Act 2007 of Malaysia or Financial Services Act 2013 of Malaysia.

For clients located in New Zealand

The Bank of New York Mellon does not hold a market services license under the Financial Markets Conduct Act 2013 of New Zealand and it is not a registered bank in New Zealand.

The Bank of New York Mellon has various other branches in the Asia-Pacific Region which are subject to regulation by the relevant local regulator in that jurisdiction.

The Bank of New York Mellon Securities Company Japan Ltd, as intermediary for The Bank of New York Mellon.

The Bank of New York Mellon, DIFC Branch, regulated by the Dubai Financial Services Authority ("**DFSA**") and located at DIFC, The Exchange Building 5 North, Level 6, Room 601, P.O. Box 506723, Dubai, UAE, on behalf of The Bank of New York Mellon, which is a wholly-owned subsidiary of The Bank of New York Mellon Corporation.

Past performance is not a guide to future performance of any instrument, transaction or financial structure and a loss of original capital may occur. Calls and communications with BNY Mellon may be recorded, for regulatory and other reasons.

Disclosures in relation to certain other BNY Mellon group entities can be accessed at the following website: http://disclaimer.bnymellon.com/eu.htm.

This material is intended for wholesale/professional clients (or the equivalent only), is not intended for use by retail clients and no other person should act upon it. Persons who do not have professional experience in matters relating to investments should not rely on this material. BNY Mellon will only provide the relevant investment services to investment professionals.

Not all products and services are offered in all countries. [INSERT THE FOLLOWING IF APPLICABLE: If distributed in the UK, this material is a financial promotion.] If distributed in the EU, this material is a marketing communication.

This material, which may be considered advertising (but shall not be considered advertising under the laws and regulations of Brunei, Malaysia or Singapore), is for general information purposes only and is not intended to provide legal, tax, accounting, investment, financial or other professional advice on any matter. This material does not constitute a recommendation or advice by BNY Mellon of any kind. Use of our products and services is subject to various regulations and regulatory oversight. You should discuss this material with appropriate advisors in the context of your circumstances before acting in any manner

on this material or agreeing to use any of the referenced products or services and make your own independent assessment (based on such advice) as to whether the referenced products or services are appropriate or suitable for you. This material may not be comprehensive or up to date and there is no undertaking as to the accuracy, timeliness, completeness or fitness for a particular purpose of information given. BNY Mellon will not be responsible for updating any information contained within this material and opinions and information contained herein are subject to change without notice. BNY Mellon assumes no direct or consequential liability for any errors in or reliance upon this material.

This material may not be distributed or used for the purpose of providing any referenced products or services or making any offers or solicitations in any jurisdiction or in any circumstances in which such products, services, offers or solicitations are unlawful or not authorized, or where there would be, by virtue of such distribution, new or additional registration requirements.

Any references to dollars are to US dollars unless specified

This material may not be reproduced or disseminated in any form without the prior written permission of BNY Mellon. Trademarks, logos and other intellectual property marks belong to their respective owners.

Neither BNY Mellon nor any of its respective officers, employees or agents are, by virtue of providing the materials or information contained herein, acting as an adviser to any recipient (including a "municipal advisor" within the meaning of Section 15B of the Securities Exchange Act of 1934, as amended, "Section 15B"), do not owe a fiduciary duty to the recipient hereof pursuant to Section 15B or otherwise, and are acting only for their own interests.

The Bank of New York Mellon, member of the Federal Deposit Insurance Corporation ("FDIC").

© 2022 The Bank of New York Mellon Corporation. All

© 2022 Aite-Novarica Group. All rights reserved. Reproduction of this report by any means is strictly prohibited. Photocopying or electronic distribution of this document or any of its contents without prior written consent of the publisher violates U.S. copyright law, and is punishable by statutory damages of up to US \$150,000 per infringement, plus attorneys' fees (17 USC 504 et seq.). Without advance permission, illegal copying includes regular photocopying, faxing, excerpting, forwarding electronically, and sharing of online access.