



FINTECH LEADERS

May 2020

HIGHLIGHTS REPORT FOR:



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ABOUT CEFPRO

The Center for Financial Professionals (CeFPro™) is an international research organization and the focal point for financial risk professionals to advance through renowned thought leadership, knowledge sharing, unparalleled networking, industry solutions and lead generation.

CeFPro is driven by, and dedicated to high quality and reliable primary market research. It is this market research that allows CeFPro's 400,000+ finance, technology, operations, risk and compliance professionals to benefit from:

- Leading industry events
- End-user vendor rankings currently covering fintech and non-financial risk solution providers
- Unique industry-specific reports
- Thought leadership from industry experts
- Filmed conference sessions, interviews and panel discussions
- Quarterly magazine written by the industry, for the industry
- Educational live and on-demand webinars covering latest trends and challenges
- Monthly e-newsletters summarizing the latest content and industry insights.

TOPICS COVERED BY CEFPRO

Asset management | Banking risk, regulation and compliance | Credit risk | Financial crime / Fraud management | Insurance risk, regulation and compliance | Liquidity and treasury risk | Market risk | Operational risk / Vendor and third party / Cyber risk | Stress testing | Technology and innovation

VALUED BY GLOBAL FINANCIAL LEADERS

“ It's good to see that, as an industry, we experience similar challenges. The sharing of insights through the CeFPro survey regarding investment priorities and what is actually out there in terms of fintech is really helpful. ”

Allan Reid, CeFPro Fintech Advisory Board Member and Nominated Officer, Tesco Bank

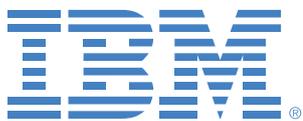
“ Automation and technology-driven fintech has the potential to revolutionize how consumers and businesses handle financial transactions. I'm excited to be part of an activity that will guide the industry to understand hype from reality. ”

Frank Morisano, CeFPro Fintech Advisory Board Member and Chief Risk Officer, Industrial and Commercial Bank of China

“ The Fintech Leaders Report represents an honest and unbiased evaluation from a cross-section of our sector about trends, challenges and key players in the fintech industry. Our hope is that the information gathered through this study will create awareness about issues and key market participants shaping and impacting the fintech space, but also have the potential to influence the way in which the industry both views and understands this important emerging area. ”

Sabeena Ahmed Liconte, CeFPro Fintech Advisory Board Member and Deputy Chief Operating Officer & Chief Legal Officer, BOC International Holdings Inc., a member of the Bank of China Group

A WORD FROM THE FINTECH LEADER 2020: IBM



TRANSFORM RISK AND COMPLIANCE WITH IBM REGTECH

Banks and other financial institutions, today, are reeling under the pressure of an increasingly complex and costly regulatory environment while continually striving to lower costs and deliver greater transparency to enhance and preserve client and stakeholder trust.

IBM, with the unique combination of financial services, technology and regulatory expertise, enables institutions to make more risk-aware and timely decisions. We apply the latest advancements in AI, machine learning and automation to the risk and compliance process, increasing operational efficiency, accelerating insight and improving transparency.

This greater oversight and understanding helps our clients preserve institutional trust and enhance value to their shareholders and customers alike.

IBM RegTech, or regulatory technology, is a set of solutions that combine cognitive capabilities of Watson AI and advanced analytics, regulatory and domain knowledge to help firms better meet their regulatory monitoring, reporting, compliance and risk management needs while significantly cutting down costs.

IBM REGTECH OFFERS THE FOLLOWING SOLUTION PORTFOLIOS

- **Governance, Risk and Compliance (GRC)** – Understand applicability of rapidly changing regulations to enact appropriate controls.
 - **OpenPages with Watson** - Improve operational efficiency and drive down costs with a fully integrated SaaS-based GRC platform, leveraging AI and advanced analytics. OpenPages with Watson V8.1 offers eight modular solutions for enterprise GRC.
 - OpenPages Operational Risk Management
 - OpenPages Policy Management
 - OpenPages Financial Controls Management
 - OpenPages IT Governance
 - OpenPages Internal Audit Management
 - OpenPages Regulatory Compliance Management
 - OpenPages Model Risk Governance
 - OpenPages Vendor Risk Management
- **Financial Crimes Insight** – Understand relationships and behaviors to identify financial crimes. IBM Financial Crimes Insight runs on IBM Cloud Pak for Data, providing financial institutions an advanced data science tool kit to build and govern models as well as a flexible, containerized deployment architecture.
 - **Financial Crimes Insight for Alerts Triage** - Augment existing AML transaction monitoring and sanctions screening systems with AI, advanced analytics, automation and machine learning capabilities to help financial institutions improve alert triage and investigative efficiencies.
 - **Financial Crimes Insight for Entity Research** - Better understand customer, counterparty and related entity risk, streamlining Know Your Customer (KYC) using a Watson AI solution.
 - **Financial Crimes Insight for Claims Fraud** - Reduce losses from medical fraud, P&C fraud, motor/auto fraud etc. by applying cognitive analytics to identify complex and changing insurance fraud patterns.
 - **Safer Payments** - Protect all cashless payments from fraud with a real-time fraud detection, fraud modelling and case management platform built to mitigate fraud in all cashless payment systems.

EVOLVING FINTECH – FROM NICHE TO MAINSTREAM

The concept of fintech should not be considered new or novel. Financial technology has pervaded the industry since the 1970s, with the roots of machine learning dating back a decade earlier. In fact, the first automated teller machine (ATM) was introduced more than 50 years ago.

The difference now is that enablers such as exceptional computing power, new and emerging markets, widespread internet penetration, and increased internet speed and coverage, thanks to 4G and 5G-enabled mobile access, are allowing fintech to penetrate the market more widely than ever before. In addition, increased demand, greater customer expectations and the need to reduce costs while providing a faster, safer and more reliable service, have combined to create the rise of the so-called 'new' fintech sector we see today.

There is no doubt that technology is changing and shaping financial services business models. The number of fintech companies in this sector has exponentially increased in recent years, in part because they operate at a fraction of the cost of conventional banks. Customers are also becoming more digitalized, increasingly expecting straight-through processing (STP) as a result of fintech's ability to combine programs through application programming interfaces (APIs) and deliver services via interactive devices, such as smartphones and tablets.

Fintech has also had a profound effect on influencing the ways in which more traditional financial services firms operate. In pursuit of greater security, enhanced customer service and cost reductions, they are being forced to adapt to the digital revolution by making adjustments that take into account internet reliance, data and analytics. As one Fintech Advisory Board Member commented, 'we are all fintech now'.

“ Millennials prefer to conduct their financial services digitally, for convenience and ease. If the traditional financial institutions choose not to adapt to these changing times, they might face the same fate as once-prominent retailers who have disappeared from their industries.”

Albert Chin, CeFPro Fintech Advisory Board Member and Head of Model Risk Management, Signature Bank

“ With the growing excitement surrounding the potential for financial technology to change the world and transform lives, it is worth remembering that financial innovation has been with us for some time. From the invention of money before the beginning of written history to the advent of the double-entry accounting method in Korea during the Goryeo dynasty and its adoption by the Medici family in the 14th century, fintech has come a long way.”

This CeFPro report really helps firms understand how the markets are changing. Today we cannot open an industry publication without reading about the promise of artificial intelligence, distributed ledger technology, cloud computing and ever-cheaper computer power. Combined with the creation of new business models, the increasing democratization of technical education, significant investment and appropriate public policy and regulation, it is hard not to be optimistic about fintech's future. This report endorses that.”

Peter Smith, CeFPro Fintech Advisory Board Member and Director, Seneca Investment Management

CEFPRO'S GLOBAL FINTECH RESEARCH

From July to October 2019, CeFPro embarked on a global research initiative to gather market data on fintech trends, priorities and challenges. Its aim was to assess the current state of the fintech industry and its relationship with financial services, explore current and future opportunities, and assess the key players across numerous categories.

The Fintech Leaders 2020 Report is the most far-reaching and rigorous program for ranking the leaders in the fintech industry. CeFPro's research and analysis team took the pulse of the sector by surveying 1,276 finance, technology, operations, risk, legal and compliance professionals. Centered around end-users' expenditure priorities, the report allows those within the industry to benchmark their standing against their peers.

As well as gauging the state of the overall fintech ecosystem, this report also provides valuable analysis on key trends that are shaping the industry. Rankings have been made across 30 individual categories, with CeFPro's Fintech Advisory Board providing unrivalled insight, analyzing individual sectors and delivering a balanced overview of leading issues.

The research incorporated the following:

- Online and offline surveys of end-users, practitioners and subject matter experts (1,276 respondents);
- Surveys and interviews with CeFPro's Fintech Advisory Board Members – see page 5 for full list of Board Members;
- Data analysis and formulation of key findings.

FIGURE 1: OVERALL SURVEY DEMOGRAPHICS

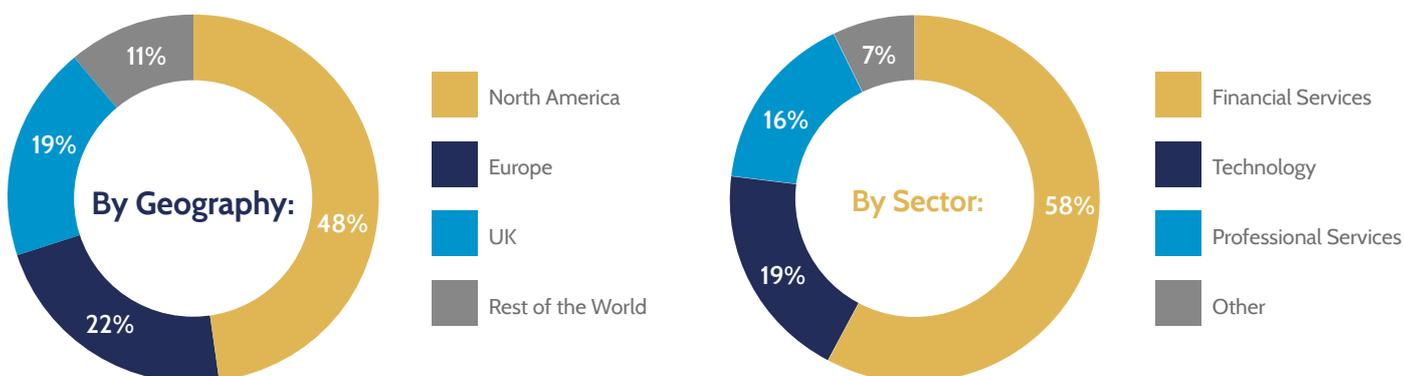


FIGURE 2: FINTECH LEADERS CATEGORIES

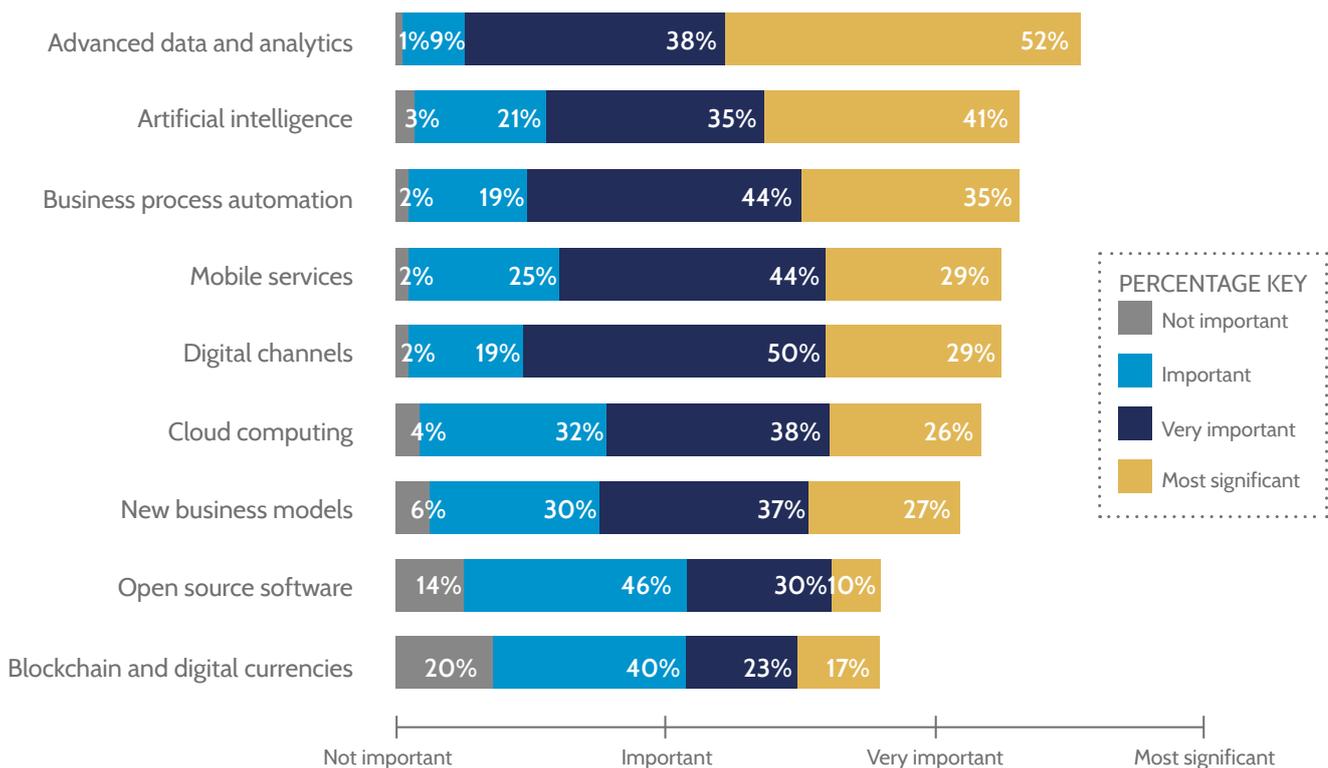
Accounting & Treasury Management	Consumer Lending	Model Risk
Analytics	Core Banking	Money Transfer & Wallets
Anti-Fraud	Credit Risk	Operational Risk
Anti-Money Laundering	Cybersecurity	Payments Processing
Artificial Intelligence	Data Management & Governance	Personal Finance
Balance Sheet Risk	Financial Data	Professional Services
Blockchain	Infrastructure	Regulatory Reporting
Business Lending	Insurance	Stress Testing
Capital Markets & Trading	KYC	Third Party Risk
Conduct Risk	Market Risk	Wealth Management

ADVANCED ANALYTICS AND AI REMAIN THE LEADING OPPORTUNITIES

Advanced analytics and artificial intelligence (AI) remain the highest-ranked fintech opportunities for financial services firms for 2020, with business process automation making significant inroads and ranking third. As in 2019, over half of this year's respondents stated that the opportunity presented by advanced data and analytics was 'most significant', acknowledging that biometrics, geometrics and behavioral characteristics could be industry game-changers.

Advanced data and analytics offer a competitive advantage unlike any other fintech opportunity, as evidenced by Google's proposed \$2.1 Billion acquisition of Fitbit in November 2019. However, increased regulatory requirements, including privacy laws, security challenges and, at times, prohibitive costs, mean adoption has been slower than anticipated. Nonetheless, the use of advanced techniques and tools to examine big data is becoming vital for businesses to effectively process, analyze and store vast amounts of information, enabling them to make informed decisions and project future trends, events and behaviors and, ultimately, gain a market advantage. The key challenge will be in balancing the desire to use advanced analytics and AI against the need to safeguard customer privacy, as Google's launch of 'Project Nightingale' demonstrated.

FIGURE 3: WHAT DO YOU CONSIDER TO BE THE MOST IMPORTANT FINTECH OPPORTUNITIES FOR FINANCIAL SERVICES FIRMS IN 2020?



THE RISE OF AUTOMATION

A significant climber in this year's report is business process automation, with 35% of respondents stating that this is a 'most significant' opportunity, compared to 29% in 2019. This may be due to the fact that the increased use of AI and advanced data and analytics is enabling fuller implementation. Some observers questioned whether the term 'business process automation' should be replaced with 'robotic process automation', given its success in driving down costs by reducing headcount. The current economic climate of low interest rates, increased competition and squeezed margins leaves cost base as a clear target, but implementation will remain slow until the prohibitive prices are addressed. Existing legacy systems, combined with the fact that some financial institutions are opting to use Excel, may keep costs low in the short term, but the sustainability of this approach is questionable over the longer term.

In addition, some bankers observed that they are feeling the pressure of rapid change and want to holistically rethink their practices regarding data and analytics in a bid to improve customer experience, standardize data and prevent fraud, helping to debunk the notion that the sweeping changes in financial services are the exclusive domain of fintech companies.

CASE STUDY: LOCKHEED MARTIN SLASHES AIRCRAFT DOWNTIME WITH AI AND ADVANCED ANALYTICS

The Lockheed Martin C-130 Hercules is a versatile aircraft, used in a range of operations from military, humanitarian and medical evacuations, to peacekeeping missions and much more. Given its vital role, downtime can significantly impact a customer's mission-readiness.

Using the SAS Platform, Lockheed Martin relies on high-powered AI and advanced data analytics to build predictive maintenance models that profile when new aircraft parts may be required, store maintenance history and carry out intelligent diagnostics, to help customers better understand and maintain their aircrafts. This intelligent system learns from its mistakes; for example, if a fault code triggers an incorrect part, the system would suggest robust troubleshooting before ordering a replacement part next time.

One Lockheed Martin customer, who had 20 aircraft, reported that this approach saved at least 1,400 hours of downtime over just three months. It also reduced data clean-up rates by 95%, allowing more time for actual analytics.

Source: AirForce Technology and SAS

MOBILE MOVES UP

Another significant change from last year is the rise of mobile services, with 73% of respondents citing it as a 'very important' or 'most significant' fintech opportunity, compared to 64% in 2019. Until recently, mobile services were largely the domain of B2C, but mobile B2B opportunities such as invoicing, accounting and lending are now on the rise. Increased levels of investment and faster internet speeds are also helping to create more opportunities for app-based solutions, and the inevitable adoption of 5G will only further propel mobile services as a fintech over the coming years.

However, compared to 2019, there was a marked deterioration this year in respondents' views on the opportunities in cloud computing, blockchain and digital currencies. Security concerns and local system requirements, such as safeguarding critical data, could be contributing factors.

For instance, in October 2019, the US House Committee on Financial Services announced a task force on AI and the evolution of cloud computing, to evaluate how financial data is stored, protected and maintained by cloud providers.

Limited usage, press interest and an expected increase in regulatory scrutiny for digital currencies are also diminishing the opportunities presented by these areas, at the same time as raising reputational risk and posing questions over their relevance.

“I expect machine learning to be one of the most important fintech investment areas over the next few years. Source code is also set to become an important part of a company's intellectual property.”

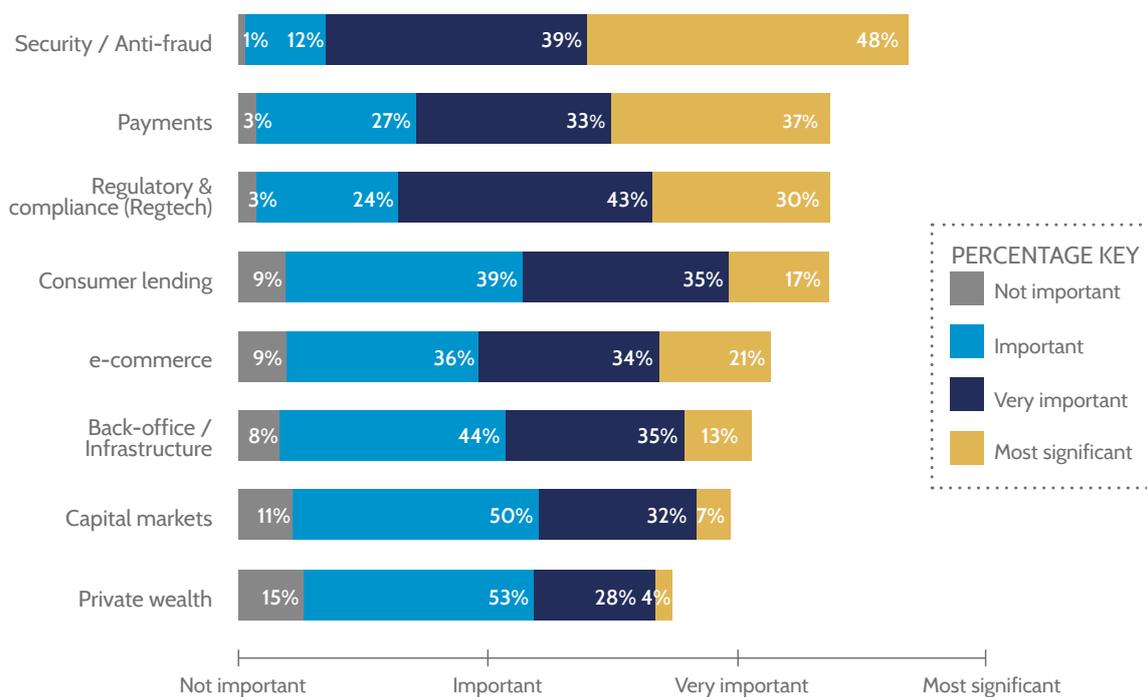
Assad Bouayoun, CeFPro Fintech Advisory Board Member and Director in Quantitative Research Department, Daiwa Capital Markets

SECURITY, PAYMENTS AND REGTECH CONTINUE AS TOP INVESTMENT PRIORITIES

Security and anti-fraud are expected to retain the position of top fintech investment area for the foreseeable future, having been ranked number one for the last two years by some margin. This is largely due to the fact that the benefits of security and anti-fraud are near-term, as opposed to capital markets and private wealth, which require infrastructure upgrades. Consumer lending is the only transaction-linked service where fintech spending promises to return important near-term gains. This is despite the fact that regulatory fines for anti-money laundering (AML) improprieties have been, and continue to be, significant as a result of improper regulatory practices. Observers have commented that whereas security and anti-fraud are ranked highly, the immediate challenges of AML (with significant fines imposed – in excess of \$150 Billion in 15 years – and more expected) should be a key consideration for fintechs now and in the future.

The key drivers for fintech investment in security and anti-fraud are customer expectation, regulatory push and safeguarding reputation. The significant levels of investment in this area are closely aligned to advanced payment technologies, increased use of mobile services and more specialized products, such as consumer lending and e-commerce. Mobile check deposits and faster reliable payments – for example, Kabbage’s announcement to settle payments within 24 hours for smaller businesses – also depend upon increased security.

FIGURE 4: WHAT DO YOU CONSIDER TO BE THE MOST IMPORTANT FINTECH INVESTMENT AREAS FOR 2020?



“ Open banking brings great uncertainty whilst, at the same time, offering significant opportunities for early adopters. ”

Caitriona Whelan, CeFPro Fintech Advisory Board Member and Chief Strategy Officer, Payen

PRIORITIZING PROMPT PAYMENT

Payment also remains a high priority area for fintech investment in 2020. Increased mobile use, open competition and greater technology leads to faster payments, which in turn means an increased threat of fraud. UK Finance, a trade association representing more than 250 credit, banking markets and payment-related firms in the UK, reported that push payment fraud – when a customer is duped into authorizing a payment to an account controlled by a criminal – resulted in a loss of over £208 Million, with no legal protection for losses. A voluntary code introduced in the UK in May 2019 resulted in some legal recourse but, given the rise in investment within the area of payments and security, some observers are questioning how long it will be before consumer rights increase sufficiently to force repayment by the providers. This also brings into question whether consumers would be willing to accept the level of inconvenience caused by the multiple verification protocols needed to support the corresponding security requirement.

Within the area of regulation and compliance (regtech), there is a distinction between regtech provider growth and fintech spending on regulatory compliance. IBM Watson, SAS and Wolters Kluwer are providers of regtech services, whereas Robinhood and Moneytree would require compliance and therefore incur expenses. There are also fraud technology providers to consider, such as FIS, Fiserv, IBM and SAS. A copy of CeFPro's FinTech Leaders 2019 Report, differentiating between these groups, can be found at www.fintech-leaders.com

“ Regulation, digital payment and personal finance will be key areas for fintech investment in the near future. ”

Stefano Canossa, CeFPro Fintech Advisory Board Member and Global Head of Operational Risk and Head of Risk Luxembourg, GAM

5G AND EMERGING ECONOMIES KEY TO GROWTH

Throughout 2020, a significant increase in the rollout and take up of 5G is expected, with three of China's telecommunications providers already debuting the service from as early as October 2019. The opportunities afforded by 5G are considerable, and certainly something to be assessed over the coming months and years.

Emerging economies also form a significant part of fintech growth, as they do not rely on established banking networks or technologies. The most successful, such as South Korea and Singapore, will continue to grow and evolve into innovation-led economies among the world's elite. However, a lack of experienced talent is a contributing factor to the pace of change, with a need for more investment in science, technology, engineering and mathematics (STEM) training. Other challenges in emerging economies include high-speed broadband, training in big data analytics, coding, and economic and political instability. These obstacles aside, there is great potential for emerging nations to adapt to the new digital paradigm.

CASE STUDY: BRIGHTERION USES AI FOR PAYMENT FRAUD PREVENTION

Brighterion, a Mastercard company, is using the advanced analytics and AI platform within the Elavon network to minimize fraud and manage risk.

As a global payments provider, Elavon has the ability to analyze 100 Billion transactions annually, enabling it to better discover and identify transaction anomalies, assist in risk mitigation and maintain global systems.

In addition, Mastercard's AI and machine learning technologies provide real-time intelligence across various data sources. One of these, AI Express, aims to help companies tailor models and address key business priorities such as AML, fraud risk, cybersecurity and operational efficiency.

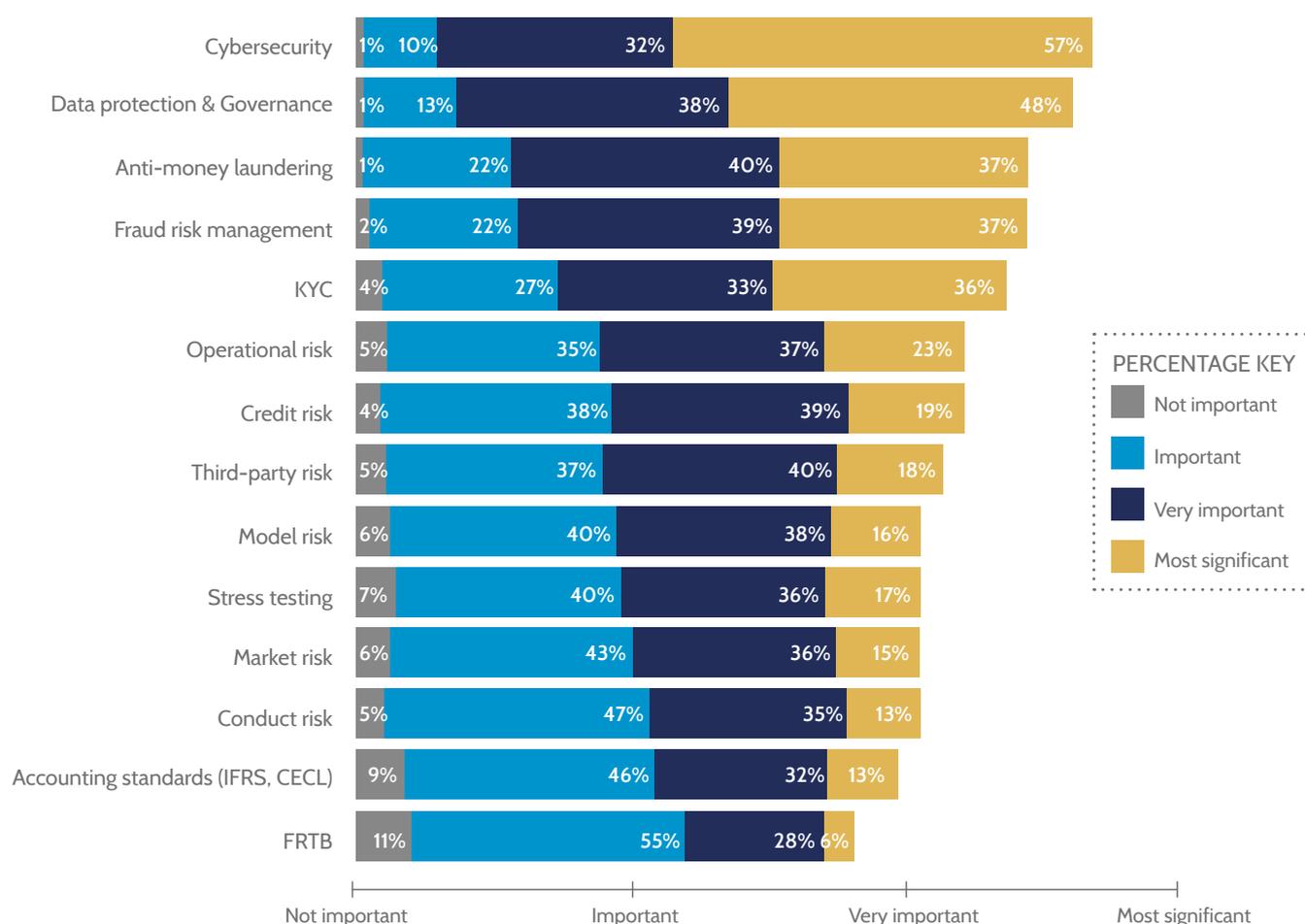
Source: Mastercard, July 2019

CYBERSECURITY CONSIDERED KEY REGTECH PRIORITY

Cybersecurity is a clear investment priority for the key fintech sub-set of regulatory technology (regtech), with over half of respondents citing it as their 'most significant' investment area for 2020. A new topic for this year, it can be assumed that cybersecurity was embedded within the area of data protection and governance in the 2019 report. Concerns over cybersecurity will no doubt continue to be a priority.

Some observers define cybersecurity as security of the internet connectivity between a financial services entity and a customer. As the internet is not encrypted, this is therefore a very weak link. Data protection and governance are concerned with where and how data is stored, and how secure this link is. The link between the data storage and the internet can create further weakness in the system, if not properly managed.

FIGURE 5: REGTECH IS A KEY SUB-SET OF FINTECH. WHAT DO YOU CONSIDER TO BE THE MOST IMPORTANT REGTECH INVESTMENT AREAS FOR 2020?



The area of data protection and governance is closely aligned to cybersecurity and, unsurprisingly, ranks comparably as an investment priority. International regulations relating to data and cybersecurity, including financial crime, anti-money laundering (AML), know your customer (KYC) and fraud, continue to grow and require additional investment year-on-year. Additional EU Directives on AML, KYC compliance, privacy and data protection – for example, GDPR in Europe, privacy laws in various US states, like the California Consumer Privacy Act, and Canadian personal information protection – are just some of the requirements leading to increased investment levels, along with fines for compliance failures and the reputational impact of high-profile cases. The need to operate within the regulatory boundaries while meeting customer expectations is prompting solution providers to develop increasingly agile and pioneering technologies.

ASSESSING THE RISK

It is worth considering the issue of perceived financial risk versus actual financial risk. Financial risk in the highest-ranked areas of cybersecurity and data protection is significantly lower than the actual losses from traditional areas of credit, operational and market risks. However, there is an inherent risk within cybersecurity and consideration must also be given to any fines for data losses and breaches, as well as reputational damage.

As Christine Lagarde of the IMF explained in a 2018 statement she made to the industry:

"...average annual potential losses from cyberattacks may be large, close to nine percent of banks' net income globally, or around \$100 Billion. In a severe scenario – in which the frequency of cyberattacks would be twice as high as in the past with greater contagion – losses could be 2½–3½ times as high as this, or \$270 Billion to \$350 Billion... [a] framework could be used to examine extreme risk scenarios involving massive attacks. The distribution of the data we have collected suggests that in such scenarios, representing the worst five percent of cases, average potential losses could reach as high as half of banks' net income, putting the financial sector at risk."

“ I expect to see further investment in the areas of payments and financial crime prevention. Given the level of growth in mobile payments and regulatory scrutiny for both of these areas, regtech will help to balance income against customer experience and risk.”

Allan Reid, CeFPro Fintech Advisory Board Member and Nominated Officer, Tesco Bank

CASE STUDY: FACEBOOK SCRUTINIZED OVER DATA PRIVACY

On June 18, 2019, the Libra Association announced a project to create a global cryptocurrency using blockchain technology (the Libra Blockchain). Promoted as a means to make purchases and transfer money at near-zero fees, Libra's public launch was planned for the first half of 2020.

Facebook, a founding member of the Libra Association, announced that it would have just a single vote among several founding members, and would establish a subsidiary (Calibra) to handle its crypto dealings and protect users' privacy and data.

Within weeks, the launch was overshadowed by a backlash of concern over access to data and data protection. The UK Information Commissioner's Office (ICO), along with data privacy commissioners from Australia, Albania, Burkina Faso, Canada, the EU, the UK and the US, shared concerns that, "while Facebook and [its crypto wallet-focused entity] Calibra have made broad public statements about privacy, they have failed to specifically address the information-handling practices that will be in place to secure and protect personal information."

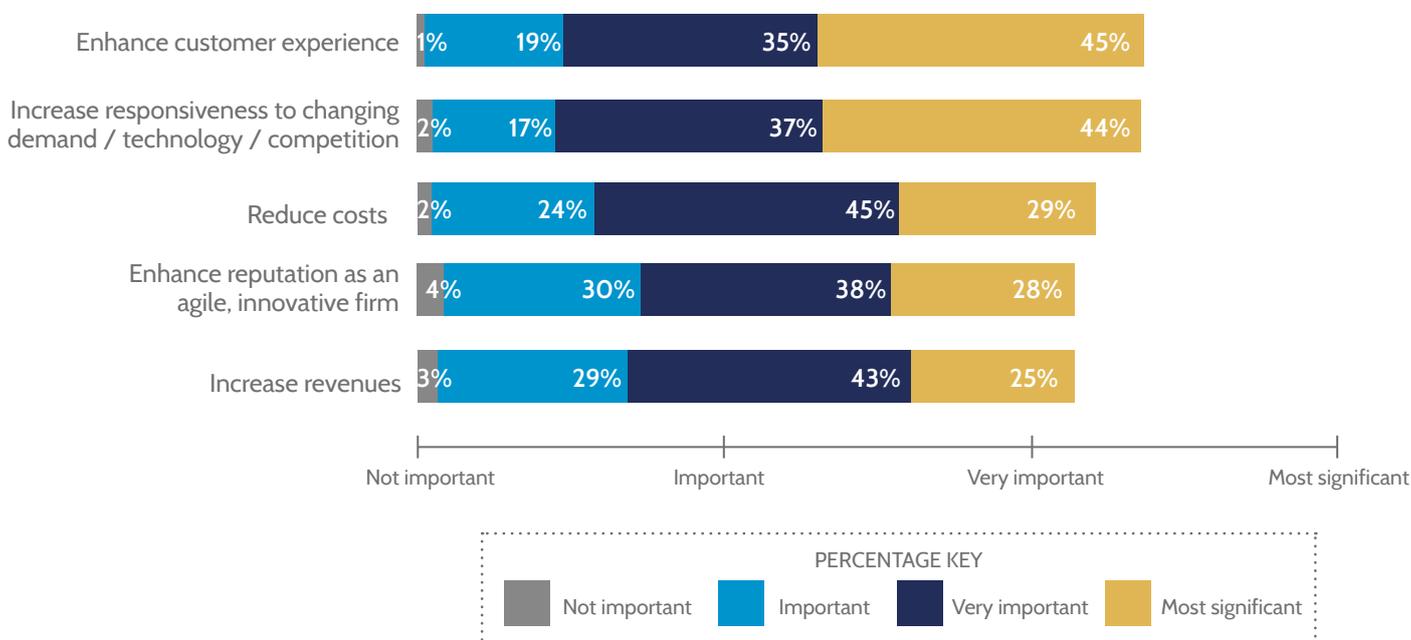
The ability of international regulators to come together to voice concerns and request more transparency, within weeks of the initial announcement, was unusual. The ongoing discussions on how to address considerations of cybersecurity and data protection continue to spark a lot of debate between industry participants and regulators.

Source: coindesk.com, ico.org.uk and cnbc.com

CUSTOMER EXPERIENCE IS THE MAIN BENEFIT OF FINTECH

Seamless service delivery, customer communication and access to functionality within a particular app or financial service are ongoing focus areas for organizations looking to improve their customers' experience. Consumers' elevated requirements and expectations have prompted increased responsiveness, greater technological advances and expanded competition, as have heightened public exposure and increased reputational risk. This was reflected in this year's survey, with respondents ranking enhanced customer experience as 'most significant' rising to 45% from 39% in 2019, and 'increasing responsiveness' jumping from 37% to 44%. Being customer-centric, agile and quick to respond to change are clearly seen as the most important benefits of fintech.

FIGURE 6: OVERALL, WHAT DO YOU CONSIDER TO BE THE MOST IMPORTANT BENEFITS OF FINTECH FOR YOUR ORGANIZATION?



“ Fintechs are changing culture through innovation and creating efficiencies for merchants and customers. Merchants are now using omnichannel approaches to increase sales, advertise products and improve inventory management through digitalization and on-time distribution. Customers can do comparative shopping from their living rooms and pick the best products at the most efficient price to meet their needs. However, for all of these great innovations to work requires a solid and trusted foundation of technology and smart controls, which we are seeing improve every day. Enhanced controls will open new business opportunities and continue to increase efficiencies and productivity in ways that we could never have dreamed about five years ago. ”

Craig Spielmann, CeFPro Fintech Advisory Board Member and CEO & Founder, RiskTao

CASE STUDY: MONZO PUTS CUSTOMER EXPERIENCE AT FOREFRONT OF BUSINESS GROWTH

Monzo is an online bank founded in 2015, originally offering prepaid debit card management through a mobile app before receiving a full banking license in 2017. With two Million banking customers, it is valued at over £2 Billion and, in mid-2019, announced its US expansion plans.

Monzo cited word of mouth, apps and social media as crucial to its expansion. Customer experience is at the heart of its growth, with its use of 'golden tickets' proving particularly popular. This scheme enabled existing customers to send golden tickets to a contact, who could then skip the line and sign up to Monzo immediately. With thousands of customers waiting to register, it enabled the bank to grow even faster. As of mid-2019, up to 80% of its sign-ups were through word of mouth.

Other innovative customer-enhanced features include the establishment of Monzo Labs, which allowed customers to access the bank's very latest features and provided the company with substantial feedback to improve its products and services. Customers are also able to view future products and vote on features and functionality via the app. In addition, the app allows customers to communicate directly with the bank, as well as cancel or replace their card.

"The goal is broadly to get to a stage where customers are referring their friends because they love the product and feel like they're part of the mission – you need to take them away from being 'standard customers' to being advocates who feel like they're part of it." **Tristan Thomas**, Head of Marketing and Community, **Monzo**

Source: FT and b2bmarketinglab.co.uk

A TARGETED APPROACH

AI has the potential to end the bimodal functionality associated with some technologies. The ability of fintech to build more intelligent and discriminatory behavior into decision-making can only enhance customer experience further, at the same time as accelerating responsiveness, reducing costs, increasing revenues and cementing the reputation of an innovative and agile firm.

Fintech companies have an advantage over traditional banks in that they can target specific demographic profiles with particular services, without the additional stress of capital rates and margins faced by banks. Observers have highlighted that fintech companies also have the potential to recapture the intelligence and interrelationship of good retail branch management, without the high cost base.

Although there is an increased emphasis on innovation and automation, manual processes are still prevalent within financial services. What sets a firm apart, therefore, may be its focus on the customer experience and its ability to use technology to be competitive and/or capture market share. As a result, the areas of reducing costs, having a reputation as agile or innovative, and increasing revenues were considered less important fintech benefits than customer experience and responsiveness.

“ Fintech should improve the customer experience and open up new opportunities for individuals and companies to increase their financial inclusion and awareness. ”

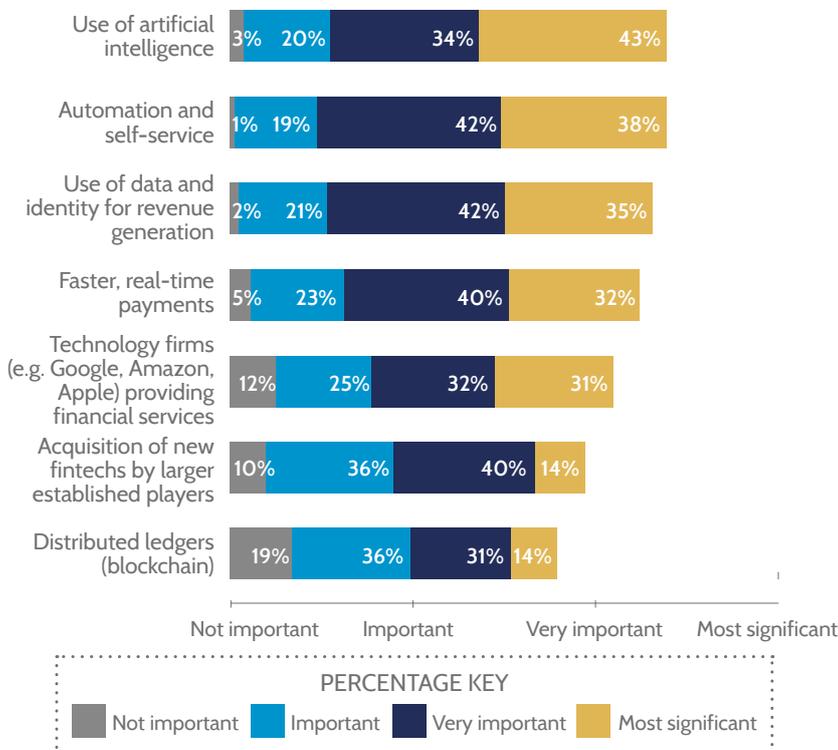
Gabriele Sabato, CeFPro Fintech Advisory Board Member and CEO and Co-Founder, **Wiserfunding**

AI AND AUTOMATION PREDICTED TO DRIVE THE FUTURE

When asked to determine the most important fintech themes for the next five years, respondents showed a clear split between the lowest-ranked areas of distributed ledgers and the acquisition of new fintechs by established players versus AI, automation, data for revenue generation, real-time payments and the rise of technology firms providing financial services. Putting fintech to work for revenue – as opposed to cost savings and data gathering – remains a backdrop driving new entrants.

Despite its number one ranking, many sectors are yet to be disrupted by the mainstream use of AI and other fintech offerings. While observers argue that, despite its hype and as yet unfulfilled potential, AI is more than just a buzzword, opinions differ on whether it will have the predicted profound impact on the financial services industry or will become just one of many useful tools available over the coming years. Moreover, definitions and understanding of AI can vary a great deal; it is sometimes confused with machine learning and advanced analytics, or quantum computing. There is consensus, however, that data and analytics will be increasingly and widely used in day-to-day activities, as well as acknowledgement that data limitations and legacy platforms that cannot talk to each other are the biggest obstacles currently preventing AI from being fully implemented and exploited.

FIGURE 7: WHAT DO YOU CONSIDER TO BE THE MOST IMPORTANT FINTECH THEMES FOR THE NEXT FIVE YEARS?



CASE STUDY: BLOCKCHAIN AI HELPS US DEPARTMENT OF JUSTICE CLOSE CHILD PORNOGRAPHY WEBSITE

Using blockchain analytics and AI, the US Department of Justice (DOJ) shut down a darknet child pornography website, known as Welcome to Video (WTV).

Upon registering with WTV, users received a unique Bitcoin address, to which they could send funds to buy content to view. The site had 1.3 Million Bitcoin addresses registered and received nearly \$353,000 worth of Bitcoin across thousands of individual transactions between 2015-2018.

By tracing transactions on the Bitcoin blockchain, the DOJ was able to identify the site's founder and the physical location of the server in South Korea. With analytics help from a private company, Chainalysis Inc., the DOJ was also able to augment work carried out by the IRS and Homeland Security Investigations to break down specific regional information and identify the exchanges on which Bitcoin was initially purchased for use on WTV. This allowed the DOJ to identify potential users via the exchanges' KYC information.

The DOJ's AI analytics led to the successful indictment of the site's founder by a grand jury in the District of Columbia, the arrest and charging of 337 site users across 38 countries, and identification and rescue of at least 23 minors.

Source: chainalysis.com

SPEEDING UP THE SYSTEM

The area of automation and self-service is key across the entire financial services and fintech sector. The ability to take data sets and explore customers' requirements with the aim of advancing services and offerings is an attractive practical application.

The benefits of real-time faster payments or credit approval, such as speeding up mortgage decisions from weeks to minutes, are also appealing. This area has experienced a significant rise in recent years and is expected to increase even further, by more than 50% in the next two years. The reasons for this are multiple: entry to the payments market is easier than to some other sectors; the cost base has decreased significantly; there is less regulation; and it presents a real opportunity to take market share from incumbent financial institutions. Furthermore, payments are seen as an opportunity, not just from a B2C perspective, but also within B2B – for example, in the areas of accounting, finance and check deposits.

Technology firms are also set to become more significant fintech players over the next five years. This signifies decentralization in the fintech space, with new partnerships and participants entering an industry previously dominated by banks. Observers note that new technologies and innovations lacking for so long in traditional banking institutions are more likely to originate within technology companies and/or fintech firms.

“ We are moving toward a customer-centric, fast-changing and volatile economy. I therefore expect customer experience, and responsiveness to change, to gain more importance within the fintech space in the coming year. ”

Mariana Gomez de la Villa, CeFPro Fintech Advisory Board Member and Program Director Distributed Ledger Technology, ING

CASE STUDY: AUTOMATION, MACHINE LEARNING AND AI HERE TO STAY

In September 2019, a closely watched barometer published by research firm Morningstar reported that, at USD \$4.3 Trillion, the passive equity assets it measured exceeded that run by humans.

Automation, such as quant funds that use algorithms to perform data analysis, is not uncommon in the financial sector. Increasingly, quant funds are using machine learning and AI to enable stock selection. The result is an extremely efficient stock market, as lower costs mean lower charges for managing assets. In turn, this has added to liquidity, resulting in a lower spread between the buy and sell price of a share, in normal market conditions.

This draws comparisons with Google's AlphaZero AI program which, in 2017, was given the rules of chess, taught itself to play and within hours beat Stockfish, the highest-rated computer chess engine. However, while chess has a set of rules that need to be adhered to at all times, stock markets do not always follow the rule book. This prompted a fear that algorithms may cause sudden shocks to share prices, as experienced in 2010 when 5% was wiped off the value of the S&P 500 in minutes. However, the rise of the machine that learns from past experiences, automates and makes important decisions, appears to be here to stay, with human interaction diminishing.

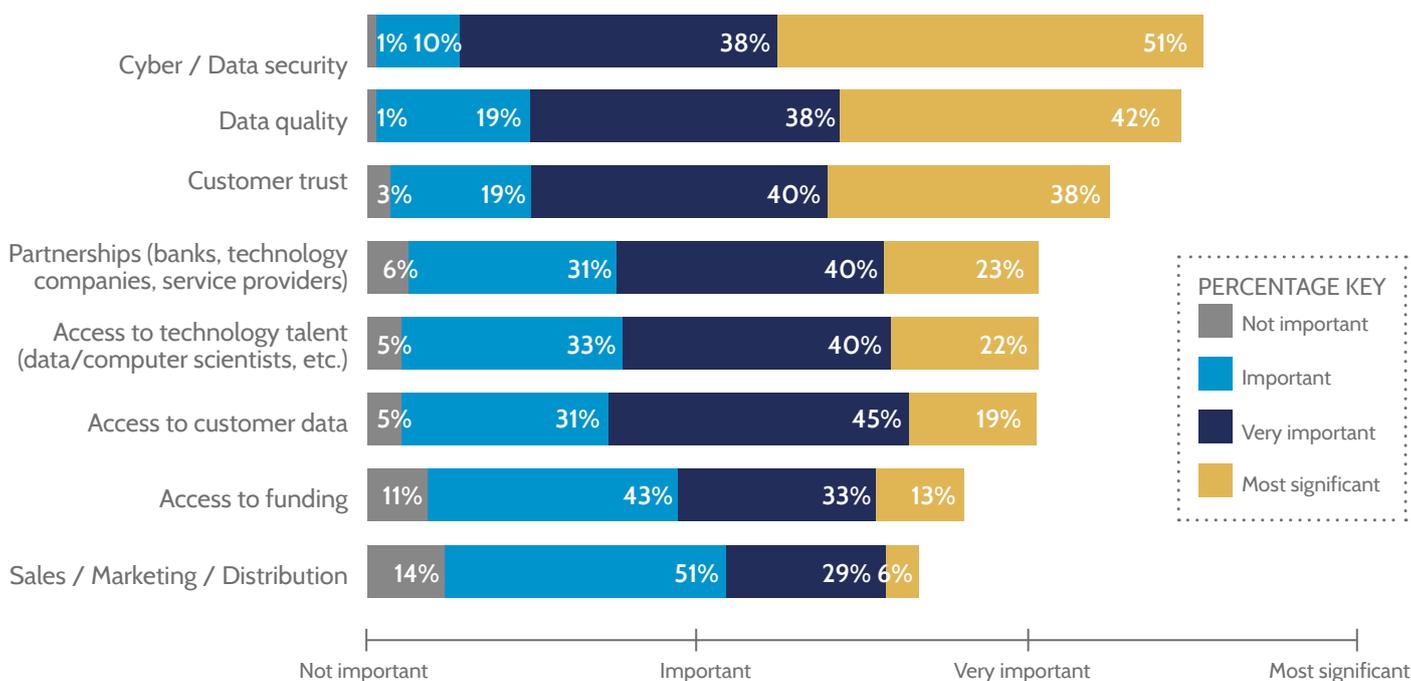
Source: [The Economist, October 2019](#)

SECURITY AND CUSTOMER TRUST

Given that fintech is largely conducted over the internet and has a deep-seated cyber risk embedded within its business model, it is perhaps unsurprising that the three main obstacles to its successful adoption are cyber and data security, data quality and customer trust. However, observers may argue that these challenges are more aligned to fintech’s enhanced financial risk management practices than any other factor.

The collection, scrubbing and storage of data is critical to its use in areas such as advanced data analytics. The implication is that data challenges, including security, are as much a problem for fintechs as for traditional banks. Yet the fintech industry has a completely different business model to banks, where the personal customer relationship is at its core; by contrast, fintech firms understand their customer through data. While traditional banks have the data but may lack a centralized storage or uniform format to use it effectively, fintech companies often start with data and then move forward.

FIGURE 8: WHAT DO YOU CONSIDER TO BE THE MOST IMPORTANT OBSTACLES TO SUCCESSFUL ADOPTION OF FINTECH?



“ The evolving space of fintech offers us new and unprecedented opportunities. However, if not implemented properly, it can expose us to risk on a variety of levels, including from a regulatory compliance, operational and technological perspective. As a global investment bank, we recognize that our adoption of new technologies is vital to our survival and long-term sustainability. However, we find ourselves moving more slowly and being more calculated in our adoption of such technology in comparison to other players in the industry – a large number of which are newer, focused on a specific region or sector, have a less established global presence and are often unregulated within the financial services space.”

Sabeena Ahmed Liconte, CeFPro Fintech Advisory Board Member and Deputy Chief Operating Officer & Chief Legal Officer, BOC International USA Holdings Inc., a member of the Bank of China Group

CASE STUDY: EQUIFAX SECURITY BREACH LEADS TO RECORD FINE

Equifax faces a liability of almost USD \$800 Million as part of a record settlement with US authorities for a hack dating back to 2017. The breach, which affected up to 150 Million people, included social security numbers and other sensitive financial information tracked by the credit reporting agency.

Hackers were able to steal data after Equifax failed to patch its systems, despite being warned of security vulnerabilities prior to the breach. The US Federal Trade Commission (FTC) stated that Equifax “failed to take basic steps” that could have prevented the data breach from occurring.

The resolution was reached with the FTC, Consumer Financial Protection Bureau, 50 state attorney generals and class action claimants. Equifax is required to improve its cybersecurity and obtain third-party assessments, as well as personally link the company’s board with the liability. Equifax must also improve its data security and safeguard customers.

This follows the decision by UK regulators to impose the maximum fine available following another breach in which Equifax was hacked and hundreds of thousands of British customers’ details were taken.

Source: FT, July 2019

THE IMPORTANCE OF PARTNERSHIPS

Another interesting observation is that 23% of respondents cite partnerships as the ‘most significant’ obstacle to successful fintech adoption. This may be because, unlike traditional banks, fintech firms do not have a well-established or solid customer base. Depending on their product offering, they may also require a license, such as a banking license, in order to act as custodian over the funds they accept or for which they facilitate transfers. Unless they offer an end-to-end platform – for example, Alipay – entering into a strategic partnership is crucial to success, as their product offering is standalone, with limited customer value. Partnerships between fintech firms and highly regulated industries such as banking will require a change in mindset and approach; legal contracts, vendor agreements, intellectual property (IP), data usage and compliance are just some of the considerations that may prohibit partnerships without a clear structure in place. In addition, where IP or data is involved, financial institutions have to adhere to strict legal and regulatory requirements. Fintechs will have to comply with the banks’ requirements if a partnership is formed, which some observers have commented could stifle innovation, agility and possibly the advancement of the fintech company itself.

“As further challenger banks (and some Tier 1s) introduce new technology to make customer experiences quicker, sleeker and more engaging, we should see further competition for customers. The majority of the UK’s big banks are struggling to retain customers who are switching to challengers quicker than they can replace them.”

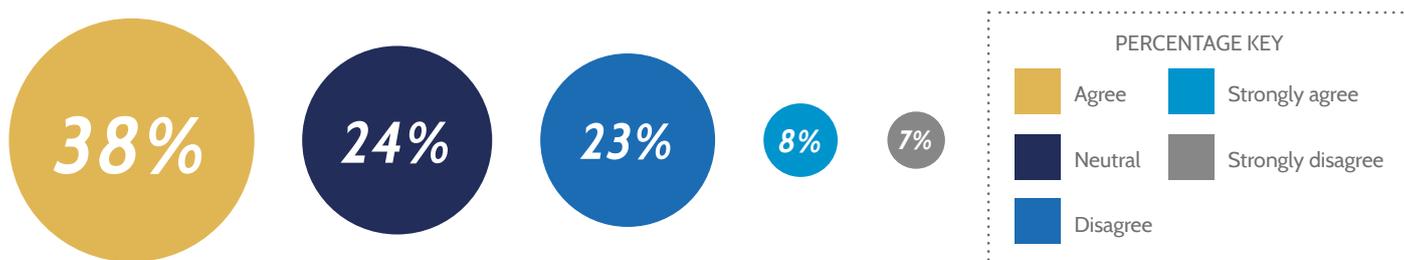
Allan Reid, CeFPro Fintech Advisory Board Member and Nominated Officer, Tesco Bank

FINTECH HYPE CONTINUES, HERE TO STAY

Among the many interesting findings uncovered in CeFPro's FinTech Leaders 2020 Report is that almost half of respondents believe the fintech industry is suffering from a 'bubble' effect. This does not negate its potential, nor dilute the profound effect that fintech will have within the financial services sector. Indeed, many observers, including several members of CeFPro's Fintech Advisory Board, commented that there is certainly a place for fintech companies, and that they are here to stay. However, there are differences of opinion around how deeply they will penetrate the market, and whether they will take market share from incumbent financial institutions, or even wipe them out altogether.

Although the benefits of fintech are clear, significant differences of opinion remain over exactly how AI, machine learning and advanced data analytics can be used in practice. In addition, given the level of regulation and compliance, to what extent can fintech firms penetrate the market before being subjected to the same checks as banks, thereby undermining their USP?

FIGURE 9: WHAT IS YOUR OPINION ON THE STATEMENT THAT THE FINTECH INDUSTRY MAY NOW BE OVERHYPED?



DISRUPTING TRADITIONAL BANKING

What is certain is that the fintech industry has much to teach the financial services sector. Its innovative and agile approach, with business models centered around niche lines, enables it to provide better customer experiences and greater interaction. The continued rise of mobile services and the internet is also allowing growth to continue at a rapid rate – certainly, fast enough to make many banks sit up and take notice. Furthermore, the low cost base of fintech firms compared to incumbent banks helps them to retain a competitive edge.

However, fintech is also facing many challenges. The digital currency revolution, or blockchain, have not materialized as expected. Regulatory and political pressures, compounded by security and fraud/AML concerns, leads many observers to anticipate a raft of additional checks and regulations to come. As mentioned previously, the obstacles faced by fintech firms that partner with traditional financial institutions may also prove difficult to overcome. However, as one CeFPro Advisory Board Member commented, "fintech as an entity will not replace banks but, with so many smaller players jockeying for position and fragmenting the banking industry, it could lead to its death by a thousand cuts".

“CeFPro’s 2020 Fintech Leaders Report clearly demonstrates that the fintech industry is gaining traction and maturity. Many obstacles remain, though progress is both visible and expected - how far, fast and how much fintechs progress by 2025 is speculation, though advances are expected. The FinTech Leaders Rankings - based on global voting and end-user feedback - clearly show diversity, which is unseen in traditional “tech” rankings.”

Andreas Simou, CeFPro Fintech Advisory Board Member and Managing Director, CeFPro

FINTECH LEADERS – RANKING METHODOLOGY

The FinTech Leaders rankings categorize and evaluate leading fintech companies, vendors and solution providers based on data gathered from surveys completed by practitioners, end-users and subject matter experts, as well as original research and market analysis conducted by CeFPro.

The rankings are based on a rigorous methodology incorporating the following key inputs:

- 1,276 votes collected between July-October 2019, as part of CeFPro's global online Fintech Survey. Voting was open to all interested parties within the industry, predominantly through CeFPro's database, but also via third parties, social media, and related publications and media outlets. Outreach was through direct email and social media posts, as well as via past respondents;
- Review and filtering of voting results by CeFPro's analysts with regards to authenticity, conflicts of interest and errors;
- Relevant CeFPro events, where attendees and speakers were surveyed and interviewed;
- 50 votes and follow-up interviews with CeFPro's Fintech Leaders Advisory Board – see page 5 for a full list of Advisory Board Members;
- Final review and sign-off by the Managing Director of CeFPro.

SCORING CRITERIA FOR CATEGORY RANKINGS

Unlike in 2019, when CeFPro's Fintech Advisory Board Members were given disproportionate weighting, all votes cast this year had equal weighting.

SCORING CRITERIA FOR OVERALL ECOSYSTEM RANKINGS

As FinTech Leaders 2020 covers such a comprehensive and diverse range of fintech, finance and risk management categories, the Advisory Board, in conjunction with CeFPro, agreed to rank solely on votes cast across the different categories.

To achieve the overall ranking, every company was given a score based on the number of shortlisted entrants in each category: for a category with 10 shortlisted companies, first place received 10 points, second place received 9 points and so on. These numbers were then multiplied by the total weight of that category: for example, a company placed second in a category with 10 shortlisted companies would receive 90 points (9 x 10). In addition, CeFPro applied the same methodology and ranking to the text responses within the survey and combined the scoring from text responses and votes cast. The scores from each category and text responses were totalled and an overall ecosystem ranking given based on the total score received by each company, irrespective of the category. Each category was given equal status.

Where companies were tied for the same position, through equal scores, hierarchy was determined according to the results of CeFPro's Fintech Advisory Board, based on the methodology above.



FINTECH LEADERS

Voted 1st in Ecosystem Rankings

FINTECH LEADERS 2020 - OVERALL ECOSYSTEM RANKINGS

1.	IBM	5.	Moody's Analytics	9.	Amazon
2.	SAS	6.	FIS	10.	Finastra
3.	Oracle	7.	Revolut	11.	Refinitiv
4.	Bloomberg	8.	Stripe	12.	PayPal

IBM FIRST IN 4 CATEGORIES

Anti-Fraud

1. **IBM**
2. Palantir
3. SAS

Anti-Money Laundering

1. **IBM**
2. Fiserv
3. NICE Actimize

Artificial Intelligence

1. **IBM**
2. SAS
3. MathWorks

Operational Risk

1. **IBM**
2. MetricStream
3. Oracle

View the full ecosystem rankings at: www.fintech-leaders.com

OTHER REPORTS

The CeFPro team would like to thank all survey participants for their valuable input that helped us to produce these non-biased, end-user and industry-specific reports.

Please see some of our previous reports below:



GLOBAL REPORT: THIRD-PARTY CYBER RISK FOR FINANCIAL SERVICES: BLIND SPOTS, EMERGING ISSUES AND BEST PRACTICES

A insight into the best emerging practices in managing third-party cyber risk, with a focus on:

- Tools, technologies and approaches
- Budget and decision-making
- Executive oversight
- Future direction

[Download the report here](#)



FINTECH LEADERS 2019 REPORT

This report provides an insight from the industry for the industry on key market trends, priorities and challenges, inclusive of case studies from an array of financial institutions.

Established technology firms, new fintech players and financial institutions from across the global ecosystem are included within the Fintech Leaders: Top 50 Company Rankings and ranked in 20+ diverse and extensive category rankings.

[Download the report here](#)



NON-FINANCIAL RISK LEADERS 2020 REPORT

Providing a better understanding on how the industry is utilizing software to manage operational, third-party, financial crime, conduct, technology and model risks. These were selected due to their growing criticality and an increase in regulatory scrutiny.

The research will also look to provide peer-led vendor rankings for each section.

[Download the report here](#)

The research team at CeFPro is always looking for interesting topics and case studies. If you would like to contribute, or partner with us, please call us on +44(0) 20 7164 6582 / +1 888 677 7007 or email us at marketing@cefpro.com.

CeFPro's community is open for new members at no cost, so if you haven't joined already, please do so on our website: www.cefpro.com.

Join our global online community at www.cefpro.com.

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