FINTECH, REGTECH AND THE ROLE OF COMPLIANCE 2021







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Executive summary

2020 has been a year of a digital transformation and acceleration to meet the challenges of the COVID-19 pandemic. By necessity and by design firms have implemented the roll-out of technology, often at speed, to enable business activities to continue as countries went into lockdown. The applications that are covered by the term fintech are fast becoming part of financial services firms' identity. In a marketplace that is still maturing, the question is whether corporate governance and the culture of financial services firms have kept up to pace with this new tech.

Thomson Reuters Regulatory Intelligence's (TRRI) fifth annual survey on fintech, regtech and the role of compliance explores these issues. This year's survey results represent the views and experiences of more than 400 compliance and risk practitioners.

The survey found the adoption and implementation of technology has taken a huge step forward during the pandemic, despite the continuing budget challenges that firms face. Sector growth is expected to accelerate in the coming months and years, despite a slowdown in new startups during 2020 due to the pandemic. Firms, and their customers, are realizing value from their use of a variety of fintech solutions.

Firms must be careful to deploy solutions on solid foundations and this means getting the corporate governance right. A quarter of respondents reported that boards and risk and compliance functions needed to be more involved in fintech solutions; an absence of appropriate skill sets may be one reason for this lack of involvement.

More G-SIFI firms this year said they were "neutral", as opposed to "extremely or mostly positive", when asked their opinion of fintech solutions. The survey did not explore the underlying reasons for this shift but it could be that the pandemic has restricted firms' investment in fintech and more firms are having to make do with existing applications rather than buying new, more advanced applications that would meet their needs more closely.

Regtech applications continued to provide popular, embedded solution for firms in areas such as compliance monitoring, financial crime, AML/CTF, sanctions and regulatory reporting. Budgets were predicted to increase, with a mix of in-house and external solutions the most frequent option selected by respondents.

Fintech presents extensive opportunities for firms in future. The presence of bigtech and the potential of artificial intelligence (AI) will enable firms to increase customer-focussed initiatives such as financial inclusion. To be able to exploit these areas firms need to overcome a number of challenges: budgetary limitations, weaknesses in corporate skill sets, the limitations of existing IT infrastructure and

the developing regulatory picture. They must also ensure they have an appropriate corporate governance framework capable of managing the deployment of fintech systems.

The main facts from the survey include:

Growth of the marketplace

- 70% of firms reported the virus had increased their reliance on technological solutions, rising to 81% in the global systemically important financial services institutions (G-SIFIs) population.
- Fintech solutions were used across a wide and diverse range of activities, from payments, banking software, crypto assets and stablecoin, insurtech and regtech.
- The greatest benefits reported were an improvement in efficiency, greater transparency in decision-making and cost reductions.
- 21% of G-SIFIs are now neutral on fintech innovation and digital disruption, up from 6% last year.

Developing corporate governance and culture

- 67% of boards were considered to have enough involvement, 68% of risk and compliance functions are seen to be either fully engaged or having some involvement.
- 31% of firms said that they had yet to invest in skill sets at the board level but knew it was needed, compared with just 7% of G-SIFIs. 22% of G-SIFIs had invested and/or appointed specialist skills to the board (12% in the wider population) and a further 56% (42% in the wider population) reported that they had invested in board-level skills to some extent.
- 15% of firms have invested in specialist skills for the risk and compliance function; 24% have not yet done so but know it is needed.

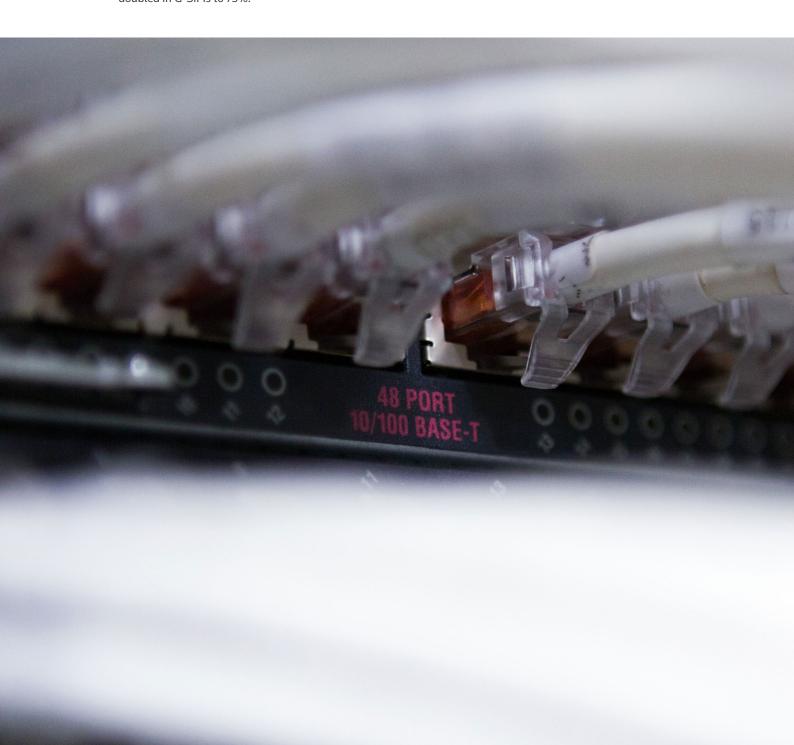
Challenges to change and development

- The greatest challenges firms expect to face in the next 12 months were budget limitations followed by digital services and payments and keeping up with regulatory change.
- The main reason firms had not deployed fintech or regtech solutions was a lack of investment or budget, cited by a third of firms. Other reasons included a lack of in-house skills, information security and data protection concerns and poor IT infrastructure.

- 9% of firms reported a strategic decision not to use fintech or regtech solutions.
- More than half (52%) of firms are mostly confident their IT infrastructure is, or will be, able to support fintech solutions.

Regtech

- 16% of firms reported they had implemented regtech solutions with a further 34% reporting that regtech solutions were affecting the management of compliance. For G-SIFIs this almost halved to 15% (27% last year).
- The greatest value of regtech was cited as its importance to operational management at 38%, which doubled in G-SIFIs to 73%.
- There has been a shift from firms which employ inhouse solutions, falling to 6% in 2020 from 17% in 2019. 12% of firms reported that all regtech solutions were developed externally. Although this is an increase on last year (6%) this figure has more than halved since 2017 (26%). In parallel, no G-SIFIs reported solely developing regtech solutions externally; instead, 88% reported a combination of internal and external solutions dependent on the challenge to be addressed.
- 32% of firms said their budget for regtech solutions would grow in the next 12 months while 25% said the budget will stay the same (42% for G-SIFIs).
- 27% of firms lack a budget for regtech solutions compared with just 4% of G-SIFIs.



INTRODUCTION



"[W]e hope that compliance can become more streamlined, efficient and customer-centric – rather than a red pen on the page."

Sean Hughes, commissioner at the Australian Securities and Investments Commission, August 2020.

Respondents to the fifth fintech, regtech and the role of compliance survey were drawn from all sectors of financial services, from G-SIFIs to technology start-ups. As G-SIFIs are often seen as a leading indicator they were asked to identify themselves to enable comparison between themselves and other, smaller firms.

The report provides an unparalleled insight into how financial services firms' risk and compliance functions have responded to digital transformation and how they are using technology to respond to the challenges of the pandemic.

The report covers the use of fintech (including regtech, insurtech and suptech) in 2020/1 and the status of the marketplace. It looks at the benefits of introducing fintech into firms and the challenges this poses the board and risk and compliance functions. It looks at how firms are addressing these challenges and how risk and compliance functions can assist firms with this. Finally, the report looks to the future and explores some of the ways fintech will be developed.

Where permission was received, quotes (some anonymized) from respondents have been included where they highlight specific issues.

The results of this year's survey are likely to be unique given the backdrop of the pandemic, but for all that there is distinct consistency of approach. Firms have focused on being able to continue to deliver the required good customer outcomes in the face of a challenging and uncertain business environment. Technology has come to the rescue, enabling firms to adapt, at speed, and continue at least a semblance of business as usual.

TRRI's survey reports are intended to help financial services firms with planning, resourcing and direction and allow them to benchmark whether their approach, skills, strategy and expectations are in line with those of the wider industry. As with previous reports, regional and G-SIFI results are split out where they highlight a particular trend.

Livaniah / Ml)

Susannah and Mike



"Thanks to digital solutions, the banking industry was able to maintain its operational functions during the lockdown. But it is becoming more and more apparent that digitalisation, having been very abrupt due to the crisis, is being accompanied by a number of challenges – for example, with regard to cyber security. Banks need resilient IT infrastructures; they need to train their staff and develop strategies to counter IT failures."

Article entitled "Hackers are stepping up their pace" by Raimund Röseler, chief executive director of BaFin's Baking Supervision, September 2020.

DEFINITIONS

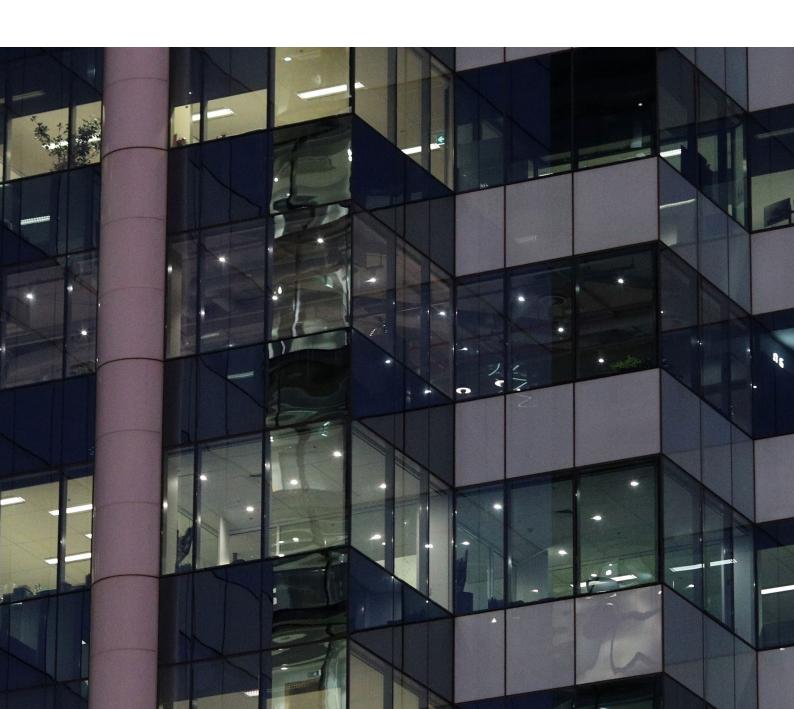
The Financial Stability Board (FSB) defines fintech as "technologically enabled innovation in financial services that could result in new business models, applications, processes or products with an associated material effect on financial markets and institutions and the provision of financial services."

The UK's Financial Conduct Authority (FCA) defines regtech as "a subset of fintech that focuses on technologies that may facilitate the delivery of regulatory requirements more efficiently and effectively than existing capabilities."

The International Association of Insurance Supervisors defines insurtech as "the variety of emerging technologies and innovative business models that have the potential to transform the insurance business."

The Bank for International Settlements defines supervisory technology (suptech) as "the use of innovative technology by supervisory agencies to support supervision". It helps supervisory agencies to digitise reporting and regulatory processes, resulting in more efficient and proactive monitoring of risk and compliance at financial institutions.

The FSB defines bigtech firms as "large technology companies with extensive established customer networks". Some bigtech firms use their platforms to facilitate the provision of financial services. Those that do so can be seen as a subset of fintech firms – a broader class of technology firms (many of which are smaller than bigtech firms) that offer financial services.



CURRENT SITUATION



"Depending on banks' ability to adapt and adjust their business models, fintech could be viewed as a competitive threat, or as an opportunity to leverage technologies to promote financial innovations, enhance customer experiences, facilitate financial inclusion and achieve greater cost efficiencies."

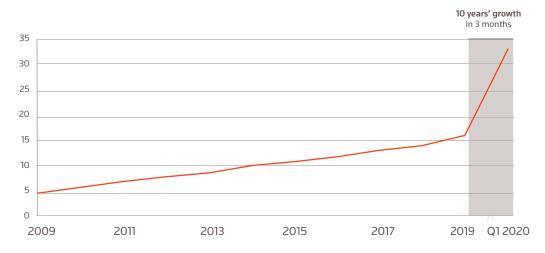
Edmond Lau, senior executive director of the Hong Kong Monetary Authority, May 2020.

Financial innovation and technological solutions have become increasingly popular in recent years. The pandemic has led to suffering in many areas of society, financial services included, but the fintech market continues to grow, and the pace of development is expected to increase

as more of the issues exposed by the pandemic seek technological solutions.

This is equally true elsewhere with all areas of technology penetration or adoption booming as a result of the pandemic.

US e-commerce penetration, %



 $Source: Bank\ of\ America;\ For rester\ Analytics;\ ShawSpring\ Research;\ US\ Department\ of\ Commerce,\ McKinsey\ analysis$

The long-term outlook for the fintech sector remains highly favourable for investors despite the impact of the pandemic, and sector growth is expected to accelerate in the next couple of years. In 2020, however, the uncertainty created

by the pandemic has reduced the number of fintech deals in the UK: in the second quarter of 2020 there were just eight, compared with 19 in the same period of 2019.



"The disruption caused by COVID-19 has demonstrated the value of technology in overcoming some of the challenges. Digital innovation may help address issues from the longer-term decline in the use of cash, increase the availability of mass market financial advice, and reduce the need for manual processes in businesses. We are committed to supporting innovation that works for all, including vulnerable customers and smaller firms. We know that our regulatory framework needs to keep pace – focussing on outcomes, and being forward looking."

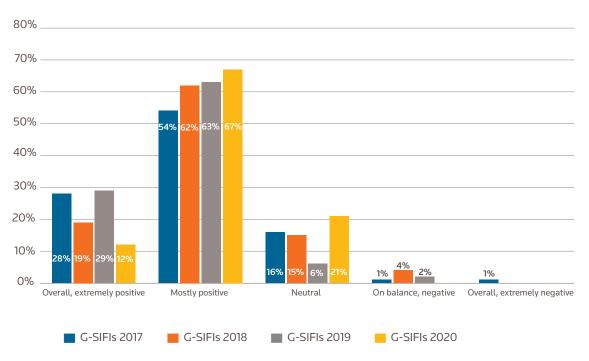
Nausicaa Delfas, executive director of international, and member of the executive committee at the UK Financial Conduct Authority, July 2020.

Use of fintech

This year's TRRI survey asked participants for their views on the fintech and regtech markets and split results between G-SIFIs and other firms. For G-SIFIs, while the overall view of fintech innovation and digital disruption

has remained largely the same year-on-year, there is a shift from "extremely positive" to a more "neutral" position (21% neutral in 2020 compared with 6% neutral in 2019). In 2020, only 12% of G-SIFIs viewed fintech innovation and digital disruption as extremely positive (29% in 2019).

G-SIFIs: What is your view of fintech (including insurtech) innovation and digital disruption?

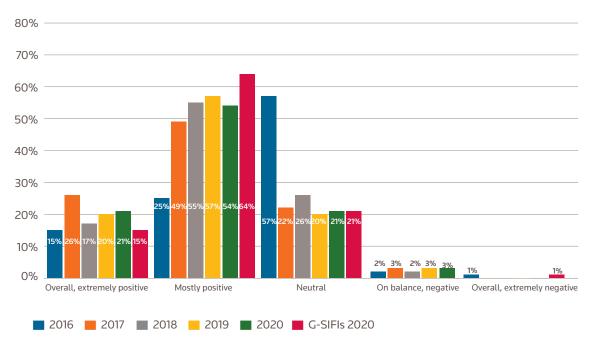


Source: Thomson Reuters Regulatory Intelligence: Fintech, Regtech and the Role of Compliance in 2021, by Susannah Hammond and Mike Cowan

For regtech, responses have remained largely the same across all firms, with 75% of respondents viewing regtech

innovation in a positive way (21% extremely positive, 54% mostly positive) compared with previous years.

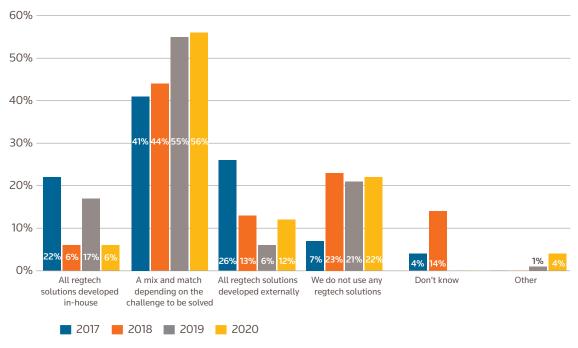
What is your view of regtech innovation and digital disruption?



Source: Thomson Reuters Regulatory Intelligence: Fintech, Regtech and the Role of Compliance in 2021, by Susannah Hammond and Mike Cowan

The G-SIFI results appear to reflect a dissatisfaction with the solutions employed, as enthusiasm has moved from extremely positive to neutral. The pandemic may have forced these firms to review their budgets and therefore their fintech strategies, restricting them to using available solutions rather than exploring new, developing areas.

Are you developing regtech solutions in-house or are you looking at external solutions?



Source: Thomson Reuters Regulatory Intelligence: Fintech, Regtech and the Role of Compliance in 2021, by Susannah Hammond and Mike Cowan

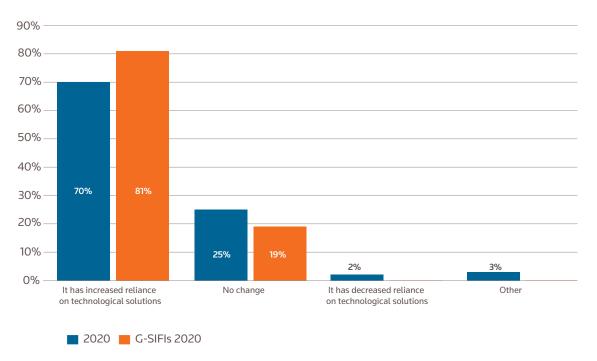
The survey asked participants whether firms were developing in-house or external regtech solutions. Over time, the most popular response has been that firms use a mix of in-house and external solutions, and this trend continued in 2020. 56% of firms reported a mix and match of in-house and external regtech solutions depending on the challenge to be solved, compared with 41% in 2017.

There has been a shift away from firms employing wholly in-house solutions. This has varied significantly over the years, falling back down to 6% in 2020 from 17% in 2019. The number of firms choosing to develop regtech solutions externally has also fluctuated, with 12% of firms reporting

that all regtech solutions were developed externally—although this is an increase on last year (6%), this figure has more than halved since 2017 (26%). In parallel, none of the G-SIFIs reported solely developing regtech solutions externally; instead, 88% reported a combination of internal and external solutions dependent on the challenge to be addressed.

This leads to the impact of COVID-19. The pandemic continues to cause unprecedented chaos and uncertainty, and this will be reflected in responses to this year's survey, which introduced a question on how the pandemic has affected firms' use of technological solutions.

How has the COVID-19 pandemic impacted your firm's use of technological solutions?



 $Source: Thomson\ Reuters\ Regulatory\ Intelligence: Fintech,\ Regtech\ and\ the\ Role\ of\ Compliance\ in\ 2021,\ by\ Susannah\ Hammond\ and\ Mike\ Cowannah\ Finterpools\ Annah\ Cowannah\ Finterpools\ Fintech,\ Regtech\ and\ Finterpools\ Finterpools\$

While a quarter of firms said there had been no immediate change, 70% said the pandemic has increased reliance on technological solutions. This increased to 81% among G-SIFIs. Regionally, 79% of firms in Asia and 68% of firms in Australasia said their reliance on technological solutions had increased as a result of the pandemic.

This supports the view that fintech solutions are being used more, indicating a growing marketplace, and would be consistent with the practical challenges the pandemic has presented, for example, remote working and more widespread automation of manual processes.

G-SIFIs appear to have been less positive about fintech solutions this year, and this may reflect difficulties with the operation of solutions in this new environment. Some firms may have experienced problems with adapting fintech solutions, while budget restrictions may have meant that firms had to use existing, or more rudimentary, in-house fintech solutions instead of exploring newer, more up-to-date offerings.

This theory is supported by the fact that some participants' responses reflected delays in planning or in the implementation of technological solutions, as other internal priorities took precedence during the pandemic.

BENEFITS

Fintech solutions cover a wide range of strategic and operational areas from personal finance, payments, banking software, crypto assets and stablecoin, insurtech and regtech.

The area of fintech most relevant to compliance officers' responsibilities is probably regtech. Regulatory processes are increasingly being managed through technology. The regtech marketplace can be split into a number of areas: risk and compliance management, identity management, regulatory reporting, fraud management and regulatory intelligence.

What solution have you introduced/ are in the process of introducing and to meet what compliance need?

Al and Machine Learning Compliance AML and sanctions compliance
Regulatory change management Market surveillance activities Data analytics
Compliance monitoring Regulatory reporting Automated compliance processes

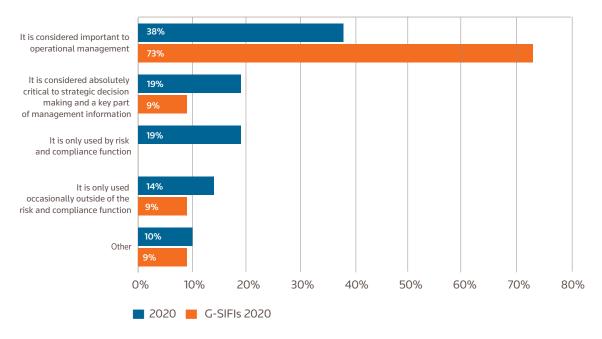
KYC and onboarding tools

Source: Thomson Reuters Regulatory Intelligence: Fintech, Regtech and the Role of Compliance in 2021, by Susannah Hammond and Mike Cowan

When asked whether regtech solutions were affecting the way firms manage compliance, respondents identified several solutions offering automation, monitoring or screening processes. The most common solutions introduced were: know your client (KYC) and onboarding tools; automated compliance processes; AML and sanctions compliance; and regulatory change management.

A new question was introduced in this year's survey to explore firms' attitudes toward using regtech. The findings revealed that 38% of firms and 73% of G-SIFIs considered it important to operational management. This was closely followed by the view that it is critical to strategic decision-making and a vital part of management information.

How is the output from regtech used within your firm?



 $Source: Thomson\ Reuters\ Regulatory\ Intelligence: Fintech,\ Regtech\ and\ the\ Role\ of\ Compliance\ in\ 2021,\ by\ Susannah\ Hammond\ and\ Mike\ Cowannah\ Grand Finter (a. 1997).$

In addition to the benefit that practical applications bring to financial services generally, the survey asked firms about the specific, individual benefits the use of technology had brought.

The greatest benefits/values you expect your firm to see from financial technology in the next 12 months are...

"Improve our monitoring capabilities, allowing us to focus on the decision-making process and risk evaluation."

Legal manager and compliance officer, South America

The greatest benefits you expect your firm to see from financial technology in the next 12 months are...



Source: Thomson Reuters Regulatory Intelligence: Fintech, Regtech and the Role of Compliance in 2021, by Susannah Hammond and Mike Cowan

The top-three areas identified as the greatest benefits or values firms expect to see from financial technology in the next 12 months were improved efficiency, greater transparency in decision-making and cost reductions.

The survey was undertaken at the peak of the first wave of the pandemic, when cost considerations for firms would have been heightened, but cost reduction and efficiency came out strongly as main benefits from the use of fintech.



"Technology and innovation are transforming the global financial landscape, presenting opportunities, risks and challenges for regulated institutions and authorities alike. ... The opportunities offered by suptech and regtech have been created by a combination of factors that have come to the fore in recent years. These include the substantial increase in availability and granularity of data, and new infrastructure such as cloud computing and application programming interfaces. ... Suptech and regtech tools could have important benefits for financial stability."

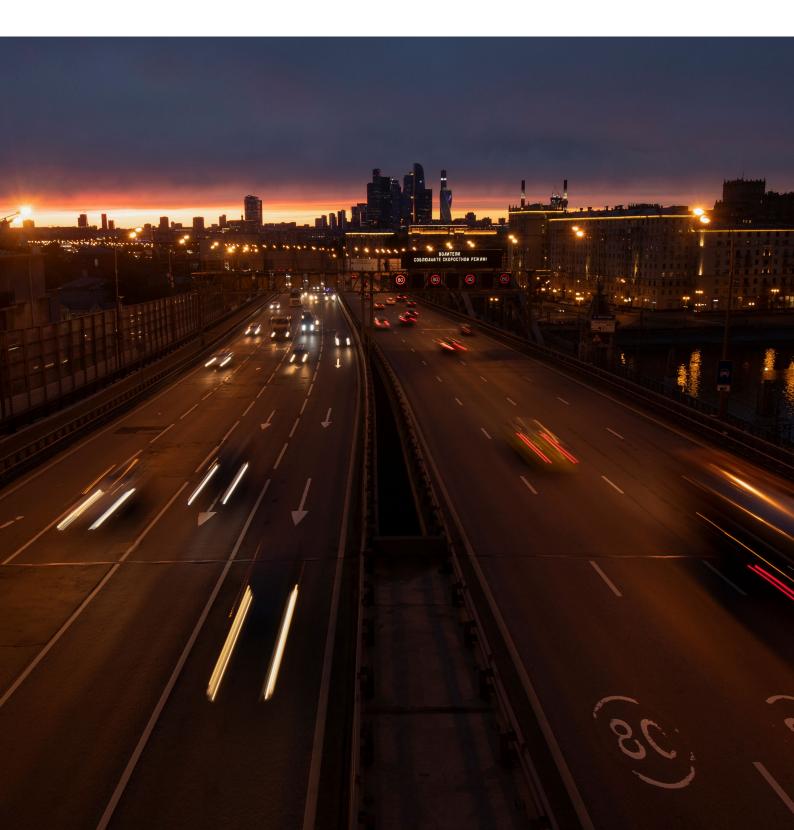
The Financial Stability Board (FSB) said in a recent survey aimed at regulators, "The Use of Supervisory and Regulatory Technology by Authorities and Regulated Institutions: Market Developments and Financial Stability Implications". October 2020.

This corresponds with the findings of a recent FSB survey on regtech aimed at regulators and regulated institutions, which found that enhancing efficiency was seen as the primary driver of suptech adoption by almost half of the authorities that responded.

The similarities do not end there. In the TRRI survey, greater transparency in decision making was quoted as the second most popular reason. Regulators responding to the FSB survey said that improving insights was the second most important demand-side benefit because such forward-looking, real-time surveillance may allow better

identification and mitigation of systemic threats. Better and more transparent decision making relies on the quality of the management information and the data available to make that decision.

The fintech industry is growing, and many firms see the positive benefits fintech applications can bring to their operations. The pandemic has posed significant challenges to firms' use of fintech, but those challenges are opportunities in the fintech world, and ones that appear to being overcome by the use of technology.



CHALLENGES



"Regulatory authorities we spoke with noted the wide-ranging challenges they are facing. These included catching up with the fast-changing landscape, facing budgetary constraints or lack of expertise, and managing lobbying pressures from traditional financial institutions. Regulators are also responding to the development of fintech by encouraging and adopting regtech (the use of information technologies (IT) to enhance regulatory processes) and suptech (the use of IT to enhance supervision)."

International Monetary Fund, Monetary and Capital Markets Department, "The Promise of Fintech: Financial Inclusion in the Post COVID-19 Era", July 2020.

While compliance officers should welcome the growth of the fintech industry, it may create challenges in other areas of the business. Fintech applications, particularly regrech solutions, provide useful tools to assist compliance

officers in their day-to-day activities, but solutions adopted in other parts of the business may pose challenges which compliance officers need to address to ensure continued regulatory compliance.

The greatest financial technology challenges you expect your firm to face in the next 12 months are...

Moving off legacy platforms Implementation of new technology
Cost of implementation
Data security

Developing solutions In-house
Competition
Competing to solutions
Competing to soluti

Source: Thomson Reuters Regulatory Intelligence: Fintech, Regtech and the Role of Compliance in 2021, by Susannah Hammond and Mike Cowan

The survey asked participants about the challenges firms expected in the next 12 months. In summary, budget limitations are a particular concern given the impact of the pandemic. The volume of regulatory change and the tracking of evolving regulations and subsequent

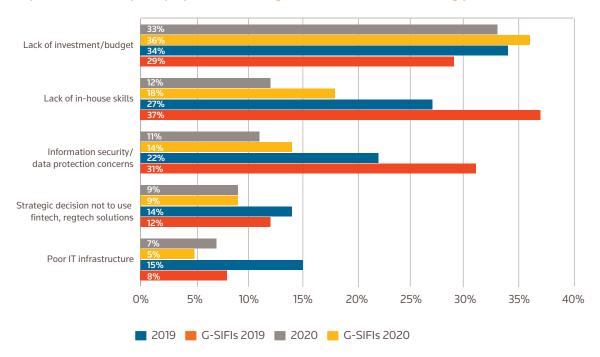
management of that change were also seen as challenges for fintech solutions. Another was the need to select technology that will endure, in a marketplace where there is unlikely to be one solution to fix all problems.

The greatest financial technology challenges you expect your firm to face in the next 12 months are...

"Finding the right fintech resources and options for our firm that will not be obsolete in two years."

Co-managing partner, law firm, United States

If your firm has not yet deployed fintech or regtech solutions, what is holding you back?



 $Source: Thomson \,Reuters \,Regulatory \,Intelligence: Fintech, \,Regtech \,and \,the \,Role \,of \,Compliance \,in \,2021, \,by \,Susannah \,Hammond \,and \,Mike \,Cowan \,And \,Anderson \,Ande$

Lack of budget for investment remains the main reason given for firms having failed to deploy fintech or regtech solutions. Other areas identified were confidentiality, data protection, size of the firm and insufficient understanding of the potential of the technology. Other participants said they were starting to deploy solutions.

Budget and skilled resources



"The talent pool, resources and need for expertise are without a doubt major issues for both supervisors and banks. The demand for data scientists and engineers is higher than supply and continues to grow as both incumbents and firms build a digital infrastructure, from storage on the cloud to cyber resilience defences."

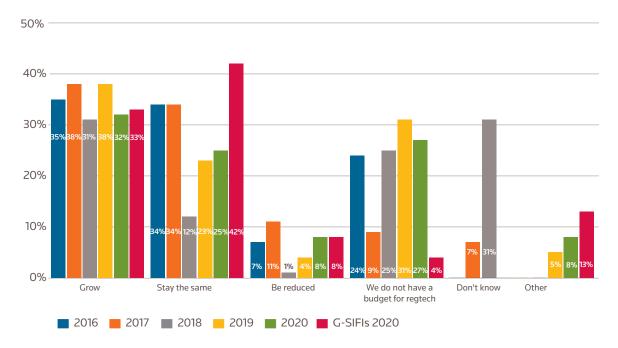
Benoît Cœuré, head of the Bank for International Settlements (BIS) Innovation Hub, August 2020.

The survey explored how much of a challenge it was for firms — at both board and compliance function level — to find the budget to invest in, and the skilled staff resources to manage, regtech. Budgets for regtech solutions are declining. In 2020, a quarter of firms said they expect budgets to remain the same during the next 12 months, while 8% said they expect budgets to reduce. A similar

trend can be seen among G-SIFIs, with 42% expecting budgets to stay the same, compared with 25% in 2019.

With the pandemic influencing what firms can spend, more will be aiming to employ regtech solutions that are cost-effective and provide better value for money. Although the demand for regtech products is strong, budget constraints may drive the price of applications down as firms look for this value.

Your firm's budget for regtech solutions over the next 12 months will...

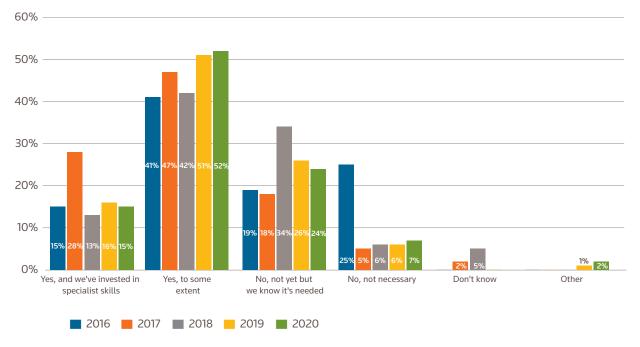


Source: Thomson Reuters Regulatory Intelligence: Fintech, Regtech and the Role of Compliance in 2021, by Susannah Hammond and Mike Cowan

In terms of staff resourcing, the survey asked about the range of skills compliance functions needed to accommodate fintech solutions. Awareness of the need to widen skillsets has remained consistent in recent years. In 2020, 67% of firms reported they have widened the skill set within the risk and

compliance functions to accommodate developments in fintech innovation and digital disruption, of which 15% had invested in specialist skills. In 2019, 67% firms reported they had widened skill sets in the risk and compliance function (51% had done so to some extent, 16% had invested in specialist skills).

Have you had to widen the skill set within your risk and compliance functions to accommodate developments in fintech, insurtech and regtech innovation and digital disruption?



Source: Thomson Reuters Regulatory Intelligence: Fintech, Regtech and the Role of Compliance in 2021, by Susannah Hammond and Mike Cowan

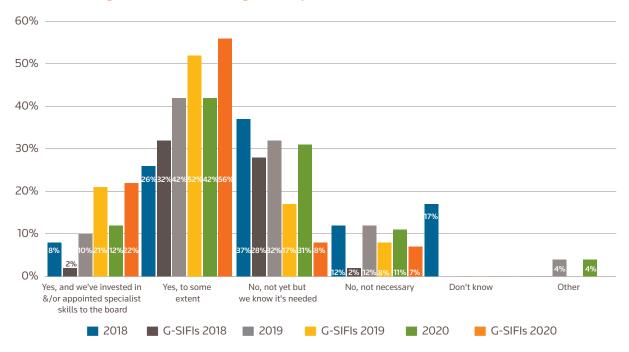
From a regional perspective, firms in the Middle East are leading the way in terms of widening skill sets within the risk and compliance functions to accommodate developments in fintech innovation, with 68% widening skills to some extent, and 14% investing in specialist skills.

The need to gain technological expertise in the boardroom has been a corporate governance focus for some years. It is the chairman's responsibility to ensure board members

have the appropriate skills, knowledge and expertise. The recruitment of directors with the appropriate IT skills has historically been a problem, however.

Participants reported a steady increase in boards investing in, or appointing people with, specialist skills. In 2020, 54% of firms widened the skill set at board level to accommodate developments in fintech, of which 12% specified they had invested in or appointed specialist skills to the board.

Have you had to widen the skill set at the board level to accommodate developments in fintech, insurtech and regtech innovation and digital disruption?



Source: Thomson Reuters Regulatory Intelligence: Fintech, Regtech and the Role of Compliance in 2021, by Susannah Hammond and Mike Cowan

Regionally, more than a fifth (22%) of firms based in the UK and Europe said they had invested in or appointed specialist skills at board level to accommodate developments in

fintech, insurtech and regtech innovation and digital disruption, compared with just 12% of firms in the United States and Canada.



"... digital transformation requires a certain degree of uncertainty, experimentation, and a 'fail fast' mindset. I think we can agree that these attributes do not always sit comfortably with prudent supervisors and risk-minded financial institutions."

Mitchell A Silk, assistant secretary for international markets at the U.S. Department of the Treasury, March 2020.

Regulatory change

The question of how fintech should be regulated is the subject of much debate. As fintech start-ups generally do not operate like full-fledged banks or insurers, they tend not to be subject to the regulations that govern more traditional players. Unsurprisingly, the existing regulatory framework is geared toward supervising more traditional financial services providers which can be more easily categorized as banks, insurers and asset managers.

The Thomson Reuters Cost of Compliance report¹ for 2020 reported that, both at board and compliance officer level, the volume of regulatory change was a challenge for firms. These concerns also appear to overlap with the challenges firms face in terms of fintech. In 2019, TRRI captured 56,624 alerts from more than 1,000 regulatory bodies, averaging 217 updates a day.

Horizon scanning and upstream risk are core elements of regtech solutions. Applications that not only identify but also summarize and communicate regulatory alerts within financial services firms are readily available in the regtech market and yet the survey identified regulatory change as a challenge to fintech.

Regulatory acceptance was also mentioned as a potential challenge. Regulators are increasingly coming to accept that fintech solutions are inevitable and have positioned themselves to be able to regulate innovations as and when they are developed. The introduction of sandboxes and testing initiatives have been examples of this. Regulators have also been putting in place rules and guidance for the fintech industry to follow. During 2020 the sector has seen the following initiatives:

• Crypto assets and stablecoins – In April 2020, the FSB issued 10 high-level recommendations to address the regulatory, supervisory and oversight challenges raised by "global stablecoin" arrangements. The FSB's recommendations call for regulation, supervision and oversight that is proportionate to the risks. It stress the need for flexible, efficient, inclusive and multi-sectoral cross-border cooperation, coordination and information-sharing arrangements that take into account the evolution of "global stablecoin" arrangements and the risks they may pose over time.

- Cyber security and cloud services The International
 Organisation for Standardization (ISO) issued an
 overview of and guidance on interactions between
 cloud service partners (CSNs) specifically cloud
 service brokers, cloud service developers and cloud
 auditors and other cloud service roles. This document
 also describes how cloud service agreements (CSAs)
 and cloud service level agreements (cloud SLAs) can be
 used to address those interactions.
- In June 2020, the International Organization of Securities Commissions issued a consultation report to assist IOSCO members in providing appropriate regulatory frameworks for the supervision of market intermediaries and asset managers that use artificial intelligence (AI) and machine learning (ML). The following areas of potential risks and harms were identified in relation to the development, testing and deployment of AI and ML: governance and oversight; algorithm development; testing and continuous monitoring; data quality and bias; transparency and explainability; outsourcing; and ethical concerns.
- Financial crime The Fifth Money Laundering Directive (5MLD) came into force on January 10, 2020. Building on the regulatory regime applied under its predecessor, 4MLD, 5MLD reinforces the EU's AML/CFT regime to address a number of emergent and continuing issues including overlaps with areas where fintech solutions play a part, such as crypto and prepayment cards.
- Payments In the EU, the second Payments Services
 Directive (PSD2) came into effect in September
 2019. The European Banking Authority (EBA),
 however, granted further potential exemptions and
 set the new PSD2 deadline to December 31, 2020. It
 affects the financial infrastructure for banks, fintechs
 and businesses using payment data for the benefits of
 consumers.

The greatest financial technology challenges you expect your firm to face in the next 12 months are...

"My observation is the biggest barriers to more rapid deployment of regtech-type solutions are lack of budget and cost, and uncertainty about regulatory acceptability. The cost aspect has been significantly exacerbated by the COVID crisis."

Managing director, consultancy, United Kingdom

IT infrastructure



"In recent years, the growth of technology-related threats has increased the importance of banks' operational resilience. The COVID-19 pandemic has made the need to address these threats even more pressing. Given the critical role played by banks in the global financial system, increasing banks' resilience to absorb shocks from operational risks, such as those arising from pandemics, cyber incidents, technology failures or natural disasters, will provide additional safeguards to the financial system as a whole."

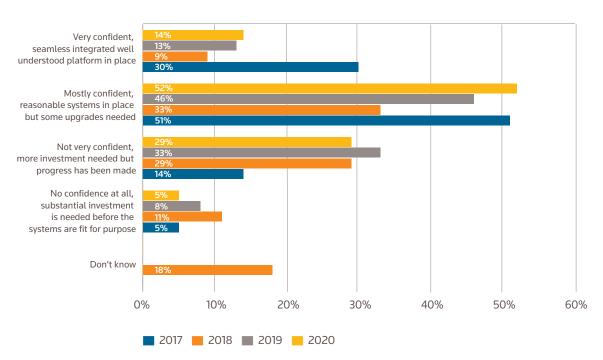
Basel Committee on Banking Supervision, August 2020.

The third and fourth challenges were digital services and payments and the multitude of available solutions. These are considered together under IT infrastructure.

First, firms reported that confidence in their IT infrastructure to support fintech solutions was beginning to grow, after a significant drop in 2018. More than half (52%) of firms are mostly confident their IT infrastructure

is, or will be, able to support fintech solutions but some upgrades to more modern systems are needed. Firms in the Middle East (13%) and continental Europe (8%) were among those who reported having no confidence at all in the ability of their IT infrastructure to support fintech solutions, and said substantial investment is needed before the systems are fit-for-purpose.

How confident are you that your IT infrastructure is/will be able to support fintech, regtech and insurtech solutions?



Source: Thomson Reuters Regulatory Intelligence: Fintech, Regtech and the Role of Compliance in 2021, by Susannah Hammond and Mike Cowan

Secondly, the nature of fintech is that it can break down financial services into detailed parts and build applications for each one. This means the fintech landscape has a number of disparate solutions, and firms have to buy multiple packages to solve their needs. The sheer variety of solutions can seem daunting to a firm which may have several straightforward requirements but is faced with the need to purchase several different solutions.

Thirdly, and not unconnected with the above, firms saw digital services and payments as a challenge. The payments sector has seen myriad applications developed. This has, in part, been hastened by the pandemic as consumer behaviour has been steered toward contactless payments and more convenient payment methods. For compliance officers, the introduction of a new payment system poses several risks, from security of customer data to treating customers fairly to training and competency concerns.



"Much of the focus for removing frictions in cross-border payments has typically been on technology and operations. However, it is important to note that divergent regulation, legislation, supervision and oversight frameworks across jurisdictions can limit the benefits that may be derived from such initiatives. Similarly, it is important to identify the gaps in these frameworks, such as the supervisory standards of non-bank remittance firms. In advancing consistent, relevant international rules and standards and supporting their local transposition, the building blocks in this focus area can target frictions around complex compliance requirements and weak competition."

Bank for International Settlements, "Enhancing Cross-Border Payments: Building Blocks of a Global Roadmap", July 2020.

Other challenges



"To ensure resilience, digitalization needs to be end-to-end. If every part of a process is digitalised except one step which requires an in-person interaction, or a wet ink signature, or a payment in physical cash, then the 'digital chain' is broken and resilience compromised. In financial services, this is what we have been aiming for: to be digital to the core."

Ravi Menon, managing director of the Monetary Authority of Singapore, September 2020.

Operational resilience

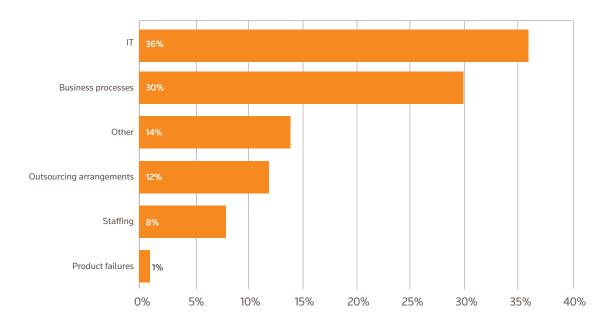
Survey participants also mentioned areas such as the pandemic and cyber resilience. All these areas indicate a challenge resulting from a significant business disruption. In May 2020, TRRI carried out a series of 'Experts Talk' webinars, which attracted more than 2,000 participants worldwide. The webinars looked at the impact of the pandemic on financial services firms. In a series of live poll questions, more than a third (36%) of practitioners said the main issue or challenges encountered in using business continuity planning related to IT. This was closely followed by business processes (30%).

Regulators are developing rules and guidance on operational resilience. The role that fintech solutions play

in firms' resilience should be included in their approach to complying with the appropriate regulations and to ensuring that business continuity plans are effective.

This will include the approach to remote working, where fintech solutions for communication and information sharing allow employees to maintain productivity away from the office. For compliance officers, the challenges of remote working need to be considered carefully and can be quite wide-ranging. There are the cultural aspects of maintaining the firm's conduct policies as well as the operational concerns about security and IT access for effective communication.

What were the key issues or challenges encountered in using your BCP?



Source: Thomson Reuters Regulatory Intelligence - Experts Talk: COVID-19 and Business Continuity Planning, April 2020



"Financial institutions should consider the risks of the current environment in their business processes, and the appropriate level of assurance needed for digital identity solutions to mitigate criminal exploitation of [their] products and platforms. Even financial institutions that typically manage their lines of business remotely, such as some virtual currency exchangers, may find themselves more exposed given the changing threat environment."

Kenneth A Blanco, director of the U.S. Financial Crimes Enforcement Network, May 2020.

Financial fraud and security risks enhanced by COVID-19

The survey also cited areas such as KYC and onboarding, cyber resilience and data security as further challenges that firms faced with regard to fintech. Since the start of the pandemic, instances of financial crime have increased and financial crime and cyber security will have been elevated on many firms' risk registers.

Compliance officers and money laundering reporting officers need to keep up-to-date with regulatory developments to ensure current and future applications of fintech comply with the rules. As an example, the Financial Action Task Force (FATF) issued revised guidance for KYC checking during the pandemic which is likely to have consequences for identity-checking fintech solutions.

In May 2020, the international standard setter released a paper looking at the challenges, good practices and policy

responses to new money laundering and terrorist financing threats and vulnerabilities arising from the COVID-19 pandemic. FATF warned some segments of the population might be less familiar with using online banking platforms and therefore more susceptible to fraud. Online bank fraud targeting financial or account information was on the rise, it said. The paper also pointed to a significant increase in email and text message phishing attacks. With more people working from home, cyber criminals were seeking to exploit weaknesses in businesses' network security to gain access to customer contact and transaction information, it said.

FATF also highlighted an increase in ransomware attacks. Some of its members had reported that cyber criminals were using malicious websites and mobile applications that appeared to share COVID-19-related information to gain and lock access to victims' devices until a payment was received.

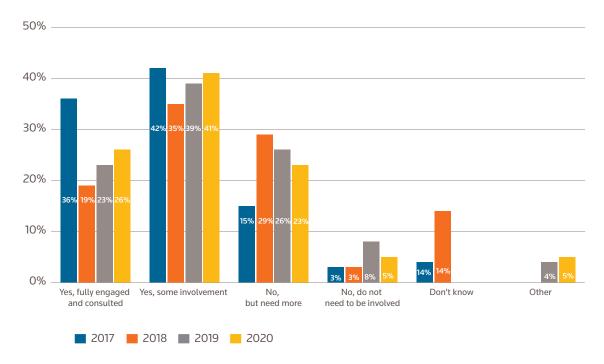
ADDRESSING THE CHALLENGES

The more widespread use of fintech means that firms, and risk and compliance functions in particular, will have to place an appropriate control framework around its development. This framework should be embedded in the firm's corporate governance arrangements and should begin with board involvement and oversight.

Board involvement

The survey asked participants about the extent of board involvement with the firm's approach to fintech. There was evidence of a steady increase in board involvement. In 2020, 67% of firms reported their board was either fully or partly engaged in its approach to fintech, regtech and insurtech (26% fully engaged and consulted, 41% some involvement).

G-SIFIs: What is your view of fintech (including insurtech) innovation and digital disruption?



Source: Thomson Reuters Regulatory Intelligence: Fintech, Regtech and the Role of Compliance in 2021, by Susannah Hammond and Mike Cowan

The board's involvement is important. From a strategic perspective the board should not only approve and support a firm's strategy for the use of fintech but should also

receive outputs of the activity of fintech applications to gain assurance about the management of the particular risks that fintech applications expose.



"Many financial institutions report that collaboration and building an ecosystem of alliances and partnerships with fintechs is important to the success of digital transformation. Forming innovation partnerships can help the financial institutions to accelerate digital transformation by changing culture, mindset and technology, and it can shorten the development timeline of innovative projects by allowing the technological and regulatory processes to run in parallel rather than in a sequence."

Benoît Cœuré, head of BIS Innovation Hub, August 2020.

Compliance involvement

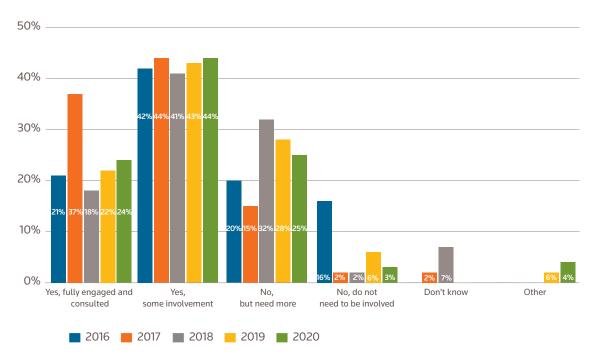
Boards will look to risk and compliance functions to provide them with reassurance about the development and implementation of fintech solutions. This year's survey showed that risk and compliance functions are increasingly more involved in firms' approach to fintech.

In 2020, 68% (24% fully engaged and consulted, 44% some involvement) of compliance functions are engaged

with firms' approach to fintech, compared with 65% (22% fully engaged and consulted, 43% some involvement) in 2019 and 59% (18% fully engaged and consulted, 41% some involvement) in 2018.

Regionally, 42% of firms in the Middle East and almost a third (30%) of firms based in the UK and Europe said their compliance functions were fully engaged in and consulted about their approach to fintech, regtech and insurtech.

Do the risk and compliance functions have enough involvement with your firm's approach to fintech, regtech and insurtech?



Source: Thomson Reuters Regulatory Intelligence: Fintech, Regtech and the Role of Compliance in 2021, by Susannah Hammond and Mike Cowan

Rather than simply providing assurance that wider operational fintech applications are being operated in a compliant manner, compliance departments also benefit from regtech solutions. In 2020, more than a third (34%) of firms are considering the use of regtech, with a further 34% saying that regtech already has an impact on the

management of compliance. This is in addition to the 16% of firms which have already implemented regtech solutions. In the UK and Europe, almost a quarter (24%) have implemented such solutions, while in the United States and Canada 18% have done so.

Are regtech solutions impacting how you manage compliance?



 $Source: Thomson\ Reuters\ Regulatory\ Intelligence: Fintech,\ Regtech\ and\ the\ Role\ of\ Compliance\ in\ 2021,\ by\ Susannah\ Hammond\ and\ Mike\ Cowan\ Angles of\ Compliance\ in\ 2021,\ by\ Susannah\ Hammond\ and\ Mike\ Cowan\ Angles of\ Compliance\ in\ 2021,\ by\ Susannah\ Hammond\ and\ Mike\ Cowan\ Angles of\ Compliance\ in\ 2021,\ by\ Susannah\ Hammond\ and\ Mike\ Cowan\ Angles of\ Compliance\ in\ 2021,\ by\ Susannah\ Hammond\ and\ Mike\ Cowan\ Angles of\ Compliance\ in\ 2021,\ by\ Susannah\ Hammond\ and\ Mike\ Cowan\ Angles of\ Compliance\ in\ 2021,\ by\ Susannah\ Hammond\ and\ Mike\ Cowan\ Angles of\ Compliance\ in\ 2021,\ by\ Susannah\ Hammond\ and\ Mike\ Cowan\ Angles of\ Compliance\ in\ 2021,\ by\ Susannah\ Hammond\ and\ Mike\ Cowan\ Angles of\ Compliance\ A$

What solution have you introduced/are in the process of introducing and to meet what compliance need?

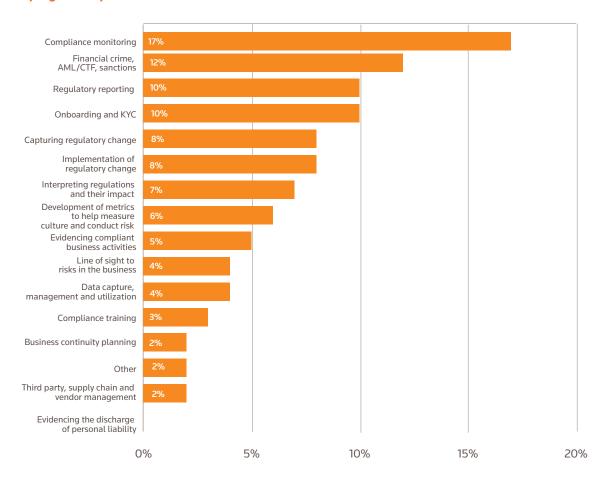
"Automation, leveraging AI for the regulatory change management process. The COVID-19 pandemic heightened and intensified the challenge to discover regulatory changes at the federal level. Moreover, the patchwork of state-level updates, the complexity and occasional conflict with federal and/or investor requirements has radically increased the level of effort to stay abreast of new regulations."

President and director of regulatory compliance, United States

The regtech market offers firms a range of solutions, from risk and compliance management, identity management, regulatory reporting, fraud management and regulatory intelligence. Participants in this year's survey indicated that compliance monitoring was the area most likely to be affected by regtech. This was followed by financial crime, AML/CFT, sanctions and regulatory reporting.

The continued focus on automation in monitoring, financial crime and reporting is perhaps unsurprising, particularly at a time when firms are adapting to a changing work landscape. It may help to alleviate resource pressures for compliance tasks requiring human judgement.

Which part of compliance and regulatory risk management is most likely to be impacted by regtech at your firm?



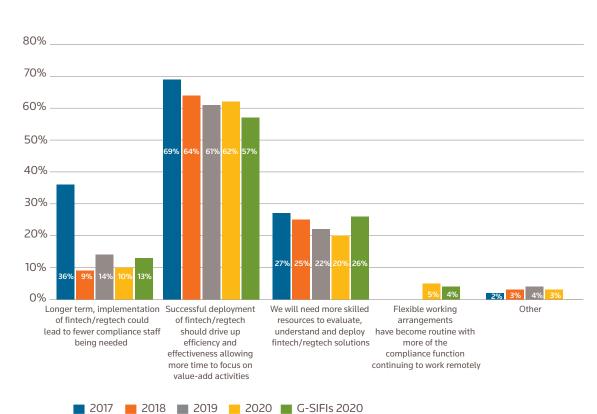
Source: Thomson Reuters Regulatory Intelligence: Fintech, Regtech and the Role of Compliance in 2021, by Susannah Hammond and Mike Cowan

Compliance functions can derive many benefits from the effective deployment of regtech solutions. When asked what would be the impact of regtech on compliance functions, participants said the successful deployment of fintech and/or regtech should drive up efficiency and effectiveness. 62% of firms and 57% of G-SIFIs said this would allow more time to focus on value-add activities.

There remains a need for more skilled resources to evaluate, understand and deploy fintech/regtech solutions. In 2020, this has fallen to 20%, the lowest point compared

with previous years. Survey respondents also flagged the need for a broader range of skills, and said that in future firms should aim to recruit candidates with technological skills.

Almost a quarter (24%) of firms in Asia said that, following the application of fintech/regtech solutions to the compliance function, they needed more skilled resources to evaluate, understand and deploy the technology.



What will be the impact of fintech/regtech on your compliance function?

 $Source: Thomson\ Reuters\ Regulatory\ Intelligence: Fintech,\ Regtech\ and\ the\ Role\ of\ Compliance\ in\ 2021,\ by\ Susannah\ Hammond\ and\ Mike\ Cowannah\ Grandon Finter Fi$

The greatest financial technology challenges you expect your firm to face in the next 12 months are...

"Availability of skilled IT staff and resources to implement, update and maintain new tech solutions with agility."

Operational compliance manager, United States

Other areas to consider

There are a number of practical difficulties for compliance officers to consider when assessing the implementation of fintech/regtech solutions, including:

- Legacy systems In recent years firms have got into difficulty when trying to link legacy systems either from within the firm or with those of subsidiary companies. If a fintech solution is to work in tandem with legacy systems or use archive data from legacy systems, firms must have implementation plans in place to manage the risks. Particular areas of concern include security, data transfer, compatible language, training on both old and new systems, reporting of data across the two systems and interface with external parties.
- System development Pitfalls in firms' system
 development methodology also need to be identified.
 Firms must consider whether testing is sufficiently
 comprehensive and addresses all risks. Firms must be
 able to carry out quality assurance at regular junctures
 rather than reviewing work which has progressed
 beyond the point at which it can be changed.
- Cultural difficulties Any development of fintech needs to be aligned with the firm's culture. Staff from the boardroom down will need training not only on the practical use of the fintech solution deployed but also on the accompanying risk and controls. Particular care will be needed with employees who have used legacy systems for some years, to ensure they buy in to the deployment rather than reacting negatively to its introduction.

FINTECH/REGTECH IN THE FUTURE

The pandemic has accelerated the adoption of technology and hastened digital transformation. It has also shone a light on the future potential of fintech, regtech and insurtech.

A balance must be struck, however, to ensure the benefits are not outweighed by the risks. The implementation of fintech, regtech and insurtech, together with the oversight of suptech, must not take place at the expense of either good customer outcomes or continuing financial stability.



"Technological innovation has made major inroads into financial services, which has implications for payments and their key role for financial inclusion. While fintech can support improved access to safe transaction accounts and encourage their frequent use, it is not a panacea and there are risks that need to be managed."

Sir Jon Cunliffe, chair of the BIS Committee on Payments and Market Infrastructures and deputy governor for financial stability of the Bank of England, April 2020.

Financial inclusion

In July 2020 the International Monetary Fund's (IMF) Monetary and Capital Markets Department published a paper entitled "The Promise of Fintech: Financial Inclusion in the Post COVID-19 Era"². The report was based on extensive quantitative analysis supplemented by interviews with stakeholders, including representatives of more than 70 fintech companies, central banks, regulatory bodies and banks. The interviews provided insights on how fintech might be used to promote financial inclusion, and considered the competitive landscape, the potential impediments, the role of regulation and the risks.

The report concluded that digital finance is increasing financial inclusion, complementing or substituting traditional finance. Although digital financial services are still small relative to traditional services, they are growing rapidly and at varying speeds across different regions. The IMF's main findings underscore the impact digital finance is having on the delivery of financial services.

- In all the 52 countries covered by the IMF's analysis, digital financial inclusion increased between 2014 and 2017, even where traditional financial inclusion was stalling or declining.
- Digital financial inclusion is seen to be evolving from "spend" to "lend", and tends to fill a gap, with both payments and lending developing where traditional financial services are less easy to access.
- Digital financial inclusion is associated with higher GDP growth. Fintech could play an important role in mitigating the economic impact of the COVID-19 pandemic, and support recovery.

 Fintech is helping to close gender gaps in financial inclusion in most countries, but there is a concern that they may rise again in the post-pandemic era.

The way in which digital financial services are delivered is evolving, with various models of interaction between incumbents and disruptors. Fintechs, frequently the source of such innovation, often compete with banks and other established financial institutions. These established institutions are responding to the competition by investing heavily in fintech.

The IMF also saw widespread collaboration between fintech firms and established institutions, based on complementarities. While the pandemic could increase the opportunities for collaboration and competition, as traditional institutions accelerate the shift toward digitization, policy measures focused on delivering pandemic-related related support through the banking sector could affect the competitive landscape.

The pandemic is also creating opportunities for governments to collaborate with private digital financial service providers to extend the reach of e-government services to wider sections of the population.

The safe development of digital financial inclusion rests on a combination of factors. Rapid financial inclusion without proper regulation and financial literacy can lead to financial instability, as witnessed during the 2008 financial crisis. Regulators have warned that cyber-security risks or inappropriate lending practices by underregulated institutions could jeopardize trust: in this context, consumer protection, digital identification and financial/digital literacy were high on their agenda. Fintechs themselves

highlighted the dearth of skilled labor and the absence of digital financial infrastructure as major constraints.

Digital finance can create new risks to financial inclusion. Those risks stem from unequal access to digital infrastructure, constraints on financial and digital literacy, and potential biases amplified by new data sources and data analytics, which could encourage a lack of trust in digital technology. Light regulation of digital lending could, in turn, threaten financial stability. The possible demise of microfinance institutions, whose operations are more likely to be affected by adverse economic conditions, could also threaten financial inclusion.

All these risks gain even more importance in the light of the rapid and abrupt shift toward digital financial services amid the pandemic.

The IMF report did, however, finish on a positive note.

"The silver lining is that — with careful regulation and supervision, as well as addressing the several constraints that the expansion of financial inclusion faces — countries can attain the promise of fintech to serve greater proportions of the population in realizing their dreams of upward mobility," the IMF said.



"But digital financial services cannot provide a lifeline to those who find themselves on the wrong side of the digital divide, including many older people and less digitally literate populations. And some of the usual risks associated with technology, such as scams or cyber fraud, might be exacerbated during crises. It's important to use this time to learn what works and what does not, and apply those lessons to forge a more inclusive path forward and help mitigate risks along the way."

Annual report to the Secretary-General of the U.N. from United Nations Secretary-General's Special Advocate for Inclusive Finance for Development, September 2020.

Regulatory perimeter and the threat from bigtech

Policymakers have flagged up the risks to financial stability as regulatory arbitrage leads financial activities to migrate from the regulated to the less, or more lightly, regulated sector. There may be some disruption of traditional financial services business models, and the interconnectedness of traditional financial institutions with lightly supervised fintech companies raise similar concerns.

There are also risks related to the technology itself, which affect both banks and non-bank financial institutions. Confidential data may be leaked, for example, through cyber attacks. Financial services providers are facing new money laundering/terrorism finance risks, with regulators also warning that cyber-security risks or inappropriate lending practices by underregulated institutions could jeopardize trust. The balance of risks may also be affected by the possible changes in the fintech landscape and regulations during and after the pandemic.

Fintech is developing and maturing, and policymakers are facing questions about inclusive growth, financial stability and regulation. The G2O has identified the need to "provide an enabling and proportionate legal and regulatory framework for digital financial inclusion" as one of its highlevel principles. Other stakeholders, including think tanks, have also been considering how to create a regulatory system which ensures the safe development of fintech while preserving financial integrity.

There is a danger that fintech may allow the development of unregulated substitutes to highly regulated activities, such as currency issuance or consumer finance. There are no internationally agreed regulatory standards, although regulators in some countries, notably China, India, Mexico, Singapore and the United Kingdom, have been actively considering how best to regulate fintech.

International agreement is also needed on anti-trust laws, to ensure adequate competition both in the fintech sector and in financial services overall. Bigtech firms such as Alibaba, Amazon, Apple, Facebook, Google, and Tencent bring value in terms of speed, efficiency and economies of scale. At the same time, their footprint and funding advantages mean they could easily put smaller companies out of business and be formidable competitors to established financial institutions.

With an abundance of cash, and business lines that fit well with the demands brought about by the pandemic, bigtechs are doubling down on acquisitions and research and development. Their entry into the market has led to questions about loss of sovereignty and the cost of international monopolies. There is also concern that the regulatory policies of some small countries may ultimately enable bigtechs to dominate their economies.

The entry of bigtechs (large or small) more broadly into financial services may bring benefits to consumers. Developments in applications such as automated advice, for example, can simplify consumers' access to different asset markets.

Bigtechs' presence in the financial services sector has intensified focus on the regulatory perimeter. Large technology companies often operate in different sectors and jurisdictions and some of their activities may fall outside of the sphere of traditional financial services regulators. This complicates the task of supervision and suggests a possible need to review the perimeter of the current regulatory framework.

There is a particular concern where financial services firms outsource to the cloud. Some bigtechs have entered the financial system through the provision of non-regulated financial services to a regulated entity in the form of cloud service provision. Given that a small number of companies represent a large part of the market, there is the potential for concentration risk.

The nature of market participants and of the activities they undertake (unregulated and regulated fintechs, incumbents and start-ups, financial service providers or providers of technological solutions to other firms) also makes it challenging for traditional financial services regulators and supervisors to map innovative business models, define the regulatory perimeter and capture innovative/digital players.

Firms may choose to lobby or otherwise engage with regulators and politicians about these concerns.

Skills

There has been extensive discussion about the risks and benefits of digitalizing the financial sector. Benefits include increased speed, efficiency, convenience and greater economies of scale as well as automated tools that help firms and authorities detect cases of poor conduct. Risk areas include data security, operational incidents, data privacy, pricing, sales practices and the financial exclusion of some individuals.

There is, however, agreement about the need to ensure a technology-neutral approach to a financial services regulatory framework that supports innovation. Before the perceived benefits can be enjoyed, however, there is an acknowledged lack of technological skills.

"[A] challenge for firms, authorities and consumers alike is to build the necessary knowledge and expertise to benefit from digital technologies," the European Securities and Markets Authority (ESMA) said in July. Firms and regulators/supervisors may also find it hard to build the necessary knowledge and expertise to reap the benefits of the new and emerging technology, given that the development and adoption of such technology is often resource intensive.

The other side of the same problem is that consumers/ investors may lack the necessary digital financial literacy to take advantage of fintech, with potential detrimental effects on investor protection and financial inclusion. In particular, consumers may not fully understand the complexity or the risks involved and some, for example, elderly people, may not have the necessary skills or resources to make the best use of the technology.

Artificial intelligence, machine learning and market surveillance

Artificial intelligence and its underlying driver, machine learning, have the potential to revolutionize many aspects of business, and financial services is no exception. Harnessing the potential of machine learning has many benefits but there are also concerns about how machines "learn", and about the detrimental impact of bias or error in any of the data inputs.

Market surveillance is a particular concern, and firms need to ensure their back-office surveillance capacity and capabilities match the pace of innovation in the front office.

In October 2020, the European Parliament adopted a series of recommendations for the European Commission on the future regulation of AI. These included that any new legal framework should be informed by a number of guiding principles including safeguards against bias and discrimination and respect for privacy and data protection. The Commission is expected to put forward a legislative proposal in early 2021.

Regulators expect firms to monitor all trading and to be able to identify and report any market abuse. A particular issue is the quality of data available to firms, and the threat poor-quality data poses to effective surveillance. The quantity of available data has increased considerably in recent times, often making it hard for firms to analyze and access accurate, relevant data in a timely fashion.

Huge amounts of structured and unstructured data also create "noise", making it difficult to extract the data signals necessary to isolate and identify suspicious activity. This is made harder still by the increasing complexity of trading strategies. The nascent deployment of machine learning techniques has created new challenges regarding evidence of intent, complexity and the risk that self-learning machines themselves may actively choose to manipulate markets.

Regulators are keen for firms to improve the quality of their suspicious trade reporting, and the ability of machine learning programs to process large complex data sets efficiently means that it is considered highly likely machine learning will play a role in the future of market surveillance of market abuse risks.

There is, however, much work to be done before machine learning can fulfil its potential. It is clear that many promising new forms of technology could provide solutions to market surveillance challenges, but despite the marketing hype it is not uncommon to see new vendor products fail to honor these promises when put to the test in real-world market conditions.

Education and continued investment will be essential, and it will be crucial to develop good and better governance practices. Working side-by-side with humans, machine learning programs may in time be better able to understand the semantics of data and the evolution of behavioral patterns, and to adapt their machine learning algorithms. Firms will need to invest in back-office functionality to ensure they develop the required understanding of data science and technology. to navigate the data quality issues to specify and test machine learning functionalities.

The regulatory focus on effective market surveillance and reporting is an obvious driver to assess and consider new technological solutions. There are wider benefits for firms — in terms of culture and conduct risk — to investing in skills and seeking to ensure the back office visibly keeps pace with the front in terms of technology.

There may also be benefits for the management and mitigation of personal accountability. Many jurisdictions have introduced accountability regimes. The UK Senior Managers and Certification Regime requires the allocation of individual responsibility, at a senior manager level, for all aspects of business activity. Market surveillance and reporting are flagged as critical to the "reasonable steps" needed to discharge the regulatory responsibility. There are many potential benefits to an effective, machine learning-enabled, approach to market abuse but one which firms should consider in particular is the potential to reduce senior individuals' personal regulatory risk.

Future promise of regtech

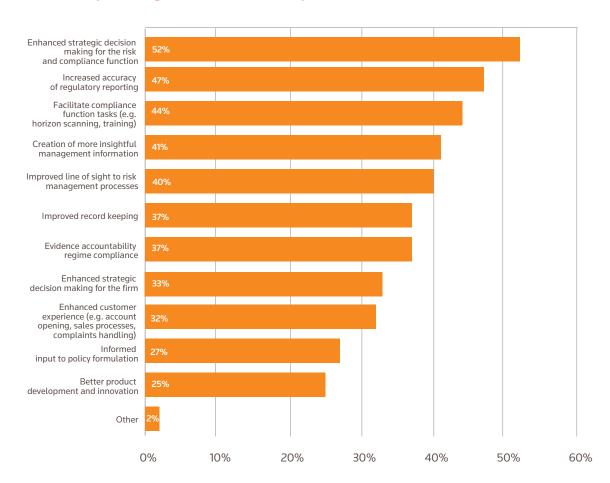
The implementation and use of regtech by financial services firms has had an uneven start, with early promises often going unfulfilled. There appears to be a trust gap, with firms as yet insufficiently confident to rely on regtech to inform their decision-making and strategic approach.

This year's survey introduced a new question looking at what firms would ideally like regtech to be able to do for them. More than half (52%) of firms said they would like to use it to enhance strategic decision-making for the risk and compliance function.

This was followed by improved accuracy in regulatory reporting (47%) and using technology to facilitate compliance function tasks such as horizon-scanning and training (44%).

Trust is never a quick fix. Regtech will need to deliver reliable and repeatable results before firms and their risk and compliance functions will choose to use the outputs, for instance, to enhance strategic decision making. An inherent part of increasing trust will be the confidence in the underlying IT infrastructure. Even after substantial investment only 14% of firms reported having complete confidence in their IT infrastructure.

What would you like regtech to be able to do for your firm?



Source: Thomson Reuters Regulatory Intelligence: Fintech, Regtech and the Role of Compliance in 2021, by Susannah Hammond and Mike Cowan

CLOSING THOUGHTS



"With the addition of artificial intelligence (AI)-enabled solutions or tools, automation is taken one step further as natural language processing is leveraged to scrape data from the web or machine learning is used to match and merge disparate data sets, driving parts of data management and analysis to inform authorities' actions. This is not science fiction. This technology is available today. If it is adopted, supervisory teams would have more time to spend on pre-emptive and early supervisory actions before any potential problems start to materialise."

Benoît Cœuré, head of the BIS Innovation Hub, August 2020.

Overall, this survey sends a positive message. It portrays a growing industry supplying applications for firms which welcome the benefits they bring and want to see greater value delivered in future.

When asked what one thing firms would like to see delivered in the future, the top areas identified were improved efficiency and speed of processing, delivery of cost savings and the provision of accurate data analysis to inform decision making. Other themes included consistency in technological approach, particularly for digital identification, due diligence and KYC.

What is the one thing you would like technological innovation to be able to deliver for your firm in the next 12 months?



Source: Thomson Reuters Regulatory Intelligence: Fintech, Regtech and the Role of Compliance in 2021, by Susannah Hammond and Mike Cowan

Such a wish list can only be delivered alongside greater focus on corporate governance. While the development of fintech applications is making considerable progress, the industry needs to mature at the same pace.

Concern about budgetary limitations and pressures are a natural consequence of business and economic disruption but firms will need to consider very carefully any cuts which might affect risk and compliance functionality. Although boards and risk and compliance functions are becoming more involved with fintech onboarding, and firms have begun to invest in specialist skill sets, further investment may still be necessary.

Firms need an in-depth understanding of any technological solution, and of the limitations of the inputs and outputs. That understanding is dependent, at least in part, on the skill sets of those seeking to use the outputs. Despite potential future budget constraints, firms must continue to invest in skill sets at all levels if they are to make the most of digital transformation.

The maintenance and development of skill sets is also important in terms of individual accountability. Chief executives, board members and other senior individuals will be held accountable for failures in technology and should therefore ensure that their technological skill sets remain up-to-date and relevant.

Regulators have shown substantial forbearance in their response to the pandemic, but that patience is not infinite. Firms should be aware that the delivery of good customer outcomes is not negotiable, and that regulators and politicians alike are unlikely to be tolerant of any senior managers who fail to take the expected reasonable steps with regard to skill sets, systems upgrades and cyber resilience.

The business impact of COVID-19 has made firms think about what regtech can, cannot or should not do for them. They will increasingly need to flex their approach to deal with limited budgets and there is no 'one solution fits all'. There has been a huge leap forward in the adoption of technology and the associated digital transformation but there is still much that technology could deliver. Improved

efficiency and speed is essential if firms are to be able to deliver more with less and achieve the required cost savings. An inherent part of accurate data analysis is the need to be able to trust the output from technology, and indeed to trust that data sufficiently to use it as a base for strategic decision-making.

Regulators have been working with the industry through sandbox initiatives, questionnaires and consultations to establish best practice for fintech. As the industry develops, firms have an opportunity to be creative and direct software houses to areas of the financial services industry in need of automation, such as financial inclusion and regtech. They also have the chance to shape regulators' views on fintech and to create a regulatory structure that benefits all.

What is the one thing you would like technological innovation to be able to deliver for your firm in the next 12 months?

"An integrated platform to address diverse needs which at [the] same time is cost-effective."

Senior practitioner, Asia

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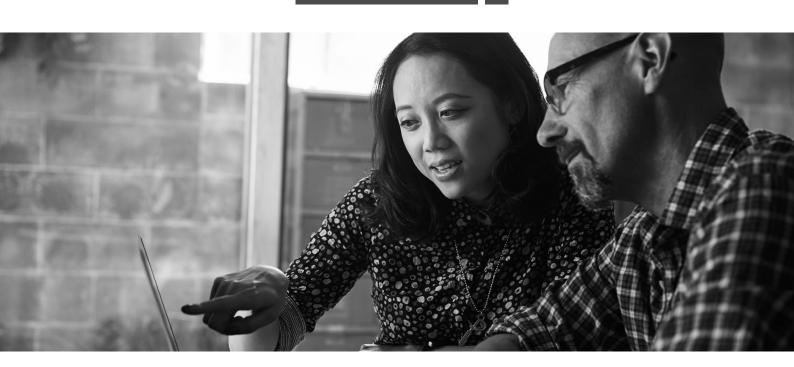


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