CITY OF LONDON | THE GLOBAL CITY

In partnership with:

RT ASSOCIATES

2021:
A Critical Year for RegTech

Contents

Foreword

"The UK has long been recognised globally as a thought leader in financial regulation, so it is no surprise that both the Financial Conduct Authority and the Bank of England have been proactive in their approach to technology innovation."

Regulation is the cornerstone of a stable and sound financial services sector, and one which serves the interests of both consumers and investors. Now, more than ever, regulation penetrates to the core of all financial institutions whether they focus on insurance, banking or asset management.

The UK has long been recognised globally as a thought leader in financial regulation, so it is no surprise that both the Financial Conduct Authority and the Bank of England have been proactive in their approach to technology innovation.

As we look to kickstart a strong, sustainable recovery, technological innovation, an area where London is already leading the way, will be key. Trends such as remote working and digitalisation have transformed how we do business meaning demand for innovative solutions will continue to surge, bringing opportunities for increased efficiency, more effective processes, and cost-savings for business.

The City of London Corporation commissioned this research to shine a spotlight on the regulatory technology (RegTech) industry – a group of technology vendors committed to the use of the most up to date technology to help regulated firms meet their regulatory obligations.

The RegTech industry is at a key moment in its development. We are calling for more to be done to support the sector to grow and thrive, strengthening London's global competitive offer and benefitting the wider UK economy. In this research report we seek to understand in depth the barriers to the adoption of RegTech and recommend a set of measures that can be put in place to ameliorate the many challenges the RegTech industry faces. We draw on primary empirical research and a review of international best practices for enhancing competitiveness.

This report is intended to foster a collaborative approach to building sustainable growth in the RegTech industry and in particular, we hope that the recommendations herein will be considered carefully by UK policy makers – in particular HM Treasury, the Bank of England, and the Financial Conduct Authority. We also believe that both the financial services industry and RegTechs have a pivotal role to play in securing the future of RegTech and making it a cornerstone of the competitiveness of the UK financial sector.

Catherine McGuinness
Policy Chair of the City of London Corporation

Executive summary

This research report provides an in-depth analysis of the UK RegTech industry – an industry which focuses on providing technology solutions to help regulated firms meet their regulatory obligations. Focusing on its application within the financial services sector, the RegTech sector has seen significant growth since the end of the global financial crisis both in response to the ensuing wave of regulatory change and to significant technological advances such as cloud computing and data science.

RegTech has far-reaching potential, as envisaged in this ambitious vision for the industry:

"RegTech represents more than just an efficiency tool and rather is a pivotal change leading to a paradigm shift in regulation. Viewed holistically, RegTech represents the next logical evolution of financial services regulation and should develop into a foundational base underpinning the entire financial services sector."

Arner et al

To achieve even a more modest version of this 'paradigm shift', the RegTech industry will need to overcome some of the key challenges that are currently holding it back, and this in turn will require support from a number of different stakeholders. With this support, RegTech can make a valuable contribution to the future growth and success of the UK's tech sector and add broader value to financial services and the UK economy as a whole.

The aim of this study, therefore, is to explore the UK RegTech industry and address the following core questions:

- What are the key barriers to innovation and adoption of RegTech?
- What best practices have been employed overseas to enhance competitiveness and support the RegTech industry?
- What impact has COVID-19 had on the UK RegTech industry?
- What policy and practical measures could be put in place to overcome the barriers to adoption and improve the long-term growth of RegTech

Approach

Between October and December 2020, the RegTech Associates research team developed a 360-degree view of the market by speaking to regulators, institutions and RegTech vendors about their perceptions and needs. This primary research consisted of 3 key activities:

- A voice of the vendor survey, aimed at RegTech vendors which attracted 161 responses, 125 of which were of sufficient quality to provide meaningful data
- Follow-up roundtables with a group of 14 RegTech vendors to validate and elaborate on the survey findings
- A series of qualitative interviews with global financial institutions and regulators

Primary research was further enriched through a broad literature review and the domain expertise of the City of London Corporation's research partners, RegTech Associates.

Key findings

Adoption of RegTech

Despite RegTech solutions being adopted in certain critical areas, RegTech is not yet being implemented widely. Almost half of RegTech vendors viewed the current levels of RegTech adoption in financial institutions to be 'moderate' with a third of respondents classing the level as 'low'.

Vendors with solutions for fighting financial crime are more bullish with 78.8% of vendors in this category considering RegTech adoption to be 'high' or 'moderate'.

Experiences and perceptions of RegTech adoption vary according to the type of problem being addressed (e.g. financial crime, regulation and compliance management, regulatory reporting), which reflects other broad market trends.

Regulators and financial institutions share the view that RegTech still has some way to go before achieving a deeper level of market penetration.

Commercial performance

Most RegTechs are optimistic about their commercial performance, with almost two thirds experiencing sales growth in 2020 and an even larger majority (82.3%) expecting further growth in 2021

Barriers to adoption

Despite high levels of commercial optimism, significant barriers to adoption exist with the five most commonly cited classified as internal to the buying organisations (financial institutions) being:

- Long procurement cycles
- Lack of buyer education and awareness
- Difficulties of navigating internal decision-making processes
- Constraints imposed by legacy technology
- Lack of available budget

External barriers to adoption are also present, and the most critical are:

- The hesitancy of regulators to promote RegTech solutions
- The lack of data standards and interoperability
- The lack of a digitally-enabled regulatory framework[1]

Sub-optimal levels of awareness and understanding between the different sets of actors in the RegTech market can exacerbate perceptions of the barriers to adoption. For example, vendors are often unclear about the role that regulators are permitted to play in the 'promotion' of their individual RegTech solutions. From the regulators' perspective it is clear that though they can have an important convening and advocacy role, within the limits of their mandates, they must remain vendor-neutral.

Financial institutions suggested that vendors need to have a deeper level of awareness and understanding of the 'pain points' they are experiencing and better articulate how their products can help solve them.

Impact of COVID-19

Just over 85% of RegTechs either strongly or somewhat agreed that RegTech has a crucial role to play in helping firms (and supervisors) navigate the challenges posed by COVID-19 but do not agree as strongly that COVID-19 presents a 'watershed moment' for the industry.

COVID-19 appears to have had a fairly positive commercial impact on the sector overall, though this varies across different categories, with 69% of Regulatory Reporting firms exhibiting a positive impact and Regulatory and Compliance Management reporting a more negative effect.

In contrast, RegTechs showed less optimism on COVID-19 continuing to be a demand driver for their products, suggesting that the positive impact may be short lived.

Demand drivers for RegTech

RegTechs stated that the single most useful measure for stimulating demand for their products would be regulators encouraging adoption through their supervisory interactions with financial institutions.

Better education around RegTech for boards of regulated institutions was also considered by RegTechs as a critical driver for growth.

1 The concept of a digitally-enabled regulatory framework was coined in a 2017 joint paper by Innovate Finance and the Transatlantic Policy Working Group (TPWG) on FinTech entitled "The Future of RegTech for Regulators" (link). They reference work by Arner et al in which the rapid transformation of the global financial system renders the means of applying principal regulatory objectives (i.e. financial stability, prudential safety and soundness, consumer protection and market integrity, and market competition and development) increasingly inadequate. RegTech -- which is already delivering digitised manual reporting and compliance processes and significant cost savings for financial services institutions and regulators -- is positioned as the solution to this adequacy gap. Specifically, the authors find that RegTech's potential to enable nearly real-time and proportionate regulatory regimes that identify and address risk, and facilitate more efficient regulatory compliance, make it the necessary response to what Arner et al describe as a "paradigm shift necessitating the reconceptualisation of financial regulation". This RegTech-powered future is referred to by TPWG in their paper as a digitally-enabled regulatory framework. (See Douglas W. Arner, Jànos Barberis & Ross P. Buckley, FinTech, RegTech, and the Reconceptualization of Financial Regulation, 37 Nw. J. Int'l L. & Bus. 371 (2017), https://scholarlycommons.law.northwestern.edu/cgi/viewcontent.cgi?article=1817&context=njilb).

Challenges for the RegTech industry

The research uncovered ten significant challenges for the RegTech industry, which interact with each other to create a 'wall' which is holding the UK RegTech industry back from reaching its full potential.

AWARENESS
It is still unclear what RegTech is and how it helps firms. Financial services institutions (FSI) also feel vendors must do more to be aware and respond to their needs

REGULATOR STANCE
Desire to maintain 'tech neutrality' reduces visible regulator support for RegTech. Still not part of day-to-day supervisory discussions.

SCALE
FSIs discouraged by 'riskier' small vendors, natural preference for 'BigTech'. Naivety sees inexperienced firms propose unsuitable tools.

VISION
There is a lack of an overall vision or strategy for the RegTech sector which filters down into tactical deployments at the individual firm level.

REPRESENTATION
Lack of a unified voice for UK RegTech prevents effective collaboration and lobbying on behalf of the sector.

Ten Key Challenges Facing UK RegTech

TECHNOLOGY
Legacy IT harder to connect into, magnifying challenges of integration and interoperability. Weakens case for digitally enabled regulation.

STANDARDS
Myriad rules and data types create a complex solution landscape for buyers to navigate. Lack of standardisation holds back adoption.

BOARD EDUCATION
RegTech adoption is stymied by a lack of board awareness. Limits engagement, saps confidence to invest and drives 'apathy'.

TALENT
Lack of access to IT workers with required skills (Tech + FS + Compliance). RegTech image needs a 'revamp' to help attract talent.

FINANCE
UK scale ups in the RegTech space share the challenge of accessing finance to grow. Lack of support for FSIs to invest in 'risky' projects.

The three most pressing challenges to address are:

AWARENESS

The research shows that RegTech is a sector with an awareness problem. This extends to fundamentals like the definition of RegTech itself, as well as how it supports firms to achieve better compliance, and why that is an attractive goal for regulated firms to target. RegTech is not FinTech, but it is technology that can and should be used by financial services firms to enhance their compliance standards. And yet the lack of awareness around RegTech has generated a significant drag on adoption. In the absence of a central directory of vendors, and any form of accreditation, it is tougher for firms to find the best vendors to work with.

REGULATOR STANCE

In the survey, 68.6% of vendors called on supervisors to encourage regulated firms to increase their adoption of RegTech as part of the supervisory process. The REGULATOR STANCE ranked first on a list of 11 potential remedies put to respondents for their consideration. For their part, UK regulators feel they have a tightrope to walk. While not anti-tech, they are somewhat hesitant to be seen to champion any specific type of technology such as cloud. However, regulators do acknowledge that giving clearer signals to the market around technology would help firms to be more confident about their own technology investments.

SCALABILITY

Barriers to scaling presents a range of challenges for UK RegTechs. Smaller vendors with fewer than 50 full-time employees, who made up 43.8% of the survey sample, can lose out on contracts to bigger firms, even though institutions admit they are sometimes 'less innovative' than their more diminutive peers. To satisfy long-established procurement processes, there is pressure to demonstrate a long track record of delivery, to guarantee longevity, and to give comfort to buyers that future problems will be swiftly remediated.

Scaling requires a deeper awareness of larger FSI's more complex needs as well as R&D funding to do so. However, if vendors are enabled to sell to larger, more complex buyers, closing the awareness gaps that can open as firms scale rapidly, the list of potential suppliers that large institutions can tap will grow, and so too will adoption.

Recommendations

To address these challenges, the report presents 12 recommendations, broken down by the group of actors to whom they are addressed (RegTech vendors, regulators and financial institutions), as well as some general recommendations for consideration by all three groups.

A matrix of recommendations to addess RegTech challenges

	Short Term >>>	Medium Term >>>	Longer Term >>>
General Recommendations	1 A Strategy-Led Approach to RegTech 2 New Accreditation & Testing Centre	3 Focus on RegTech Skills & Education	
Regulatory Recommendations	4 Adopt a 'tech embracing' stance 5 Clearer guidance on technology risk		6 Accelerate data and rules standardisation
Vendor Recommendations	7 Coherent and collective voice for the UK RegTech Industry 8 More awareness of Benefits of RegTech	9 Better Access to Finance for UK RegTechs	
FSI Recommendations	10 Better Education for Boards 11 New Incentives to Address Legacy IT	12 Streamlined and Proportionate Procurement	

According to the research and analysis from this project, three recommendations have emerged as being the highest priority.

2 Build AWARENESS in RegTech's ability to SCALE through an independent testing and accreditation regime

Establish a system of practical, independent, technology-driven RegTech Accreditation to drive wider awareness of UK RegTech, proving the industry's ability to provide scalable and interoperable solutions. By creating an independent utility that can act as a testing and proving platform for RegTechs, buyers would be provided with greater assurance and confidence that the solutions can deliver.

4 Regulators to adopt a 'tech embracing' stance to ADVOCATE for improved standards for technology driving regulatory compliance in firms

UK regulators should adopt a visibly and actively "tech embracing" stance across the whole of their organisations, driving existing pockets of advocacy within leadership and innovation teams down into the supervisory layers. UK regulators must also be empowered to take a clear and positive position on RegTech, whilst recognising that the risks of innovation must be balanced with the benefits. RegTech should become a regular topic of conversation between regulated firms and supervisors.

7 Establish a coherent and collective voice for the UK RegTech industry to improve the REPRESENTATION of the industry in the UK

Establish a coherent and collective voice to represent the UK RegTech industry to help address barriers to RegTech adoption by generating more awareness around RegTech. It is envisaged that whatever form this collective voice takes, it could orchestrate some of the activities outlined in these recommendations, particularly around building awareness and supporting education around the sector. Coalescing around a shared vision for the industry would help to close some of the 'trust' gaps between vendors and buyers. Regulators would also benefit from having a single point of contact for regulators when seeking views from RegTechs.

Chapter 1

RegTech Today

1.1 Introduction

RegTech is a relatively new label used to describe a set of technology solutions that can be used by regulated firms to help meet their regulatory and compliance obligations. This section provides an overview of the history and definition of RegTech and a view of the current state of the RegTech industry in the UK, within the context of the UK's financial regulatory environment. It then draws attention to the importance of the RegTech industry – both directly to the UK economy and in terms of how a prosperous RegTech industry can further enhance the growth and competitiveness of the UK financial services industry.

1.2 What is RegTech?

From a definitional perspective, the term 'RegTech' emerged in 2015 from a number of different sources including Professor Phillip Treleaven (University College London)[1], the UK Government Office for Science[2] and the FCA[3]. Defining RegTech as "*a sub-set of FinTech that focuses on technologies that may facilitate the delivery of regulatory requirements more efficiently and effectively than existing capabilities*", the FCA's work acted as catalyst for an ongoing discussion about how RegTech could be fostered to improve compliance outcomes for the UK financial sector.

Whilst the use of technology for managing compliance dates back at least two decades[4], what is novel about the growth of the RegTech industry in more recent years is the use of emerging technologies such as cloud computing and application programming interfaces (APIs) as well as the use of artificial intelligence in new areas thanks to the proliferation of big data and the reduction in the cost of computing power.

The boom in the RegTech industry can be traced back to several key factors. Firstly, the tide of new and changed regulation following the Global Financial Crisis of 2008-9 required more sophisticated solutions to satisfy the new regulatory requirements. Secondly, this coincided with developments in data science and the possibilities offered by moving computing to cloud-based infrastructures. Regulators themselves adopted new tools to enhance their oversight of the firms and markets they supervise. Finally, cost pressures following the economic downturn meant financial firms needed to radically improve the efficiencies of their processes, systems and controls. This combination of factors provided the perfect conditions for the proliferation of innovative technology solutions which could help to solve regulatory obligations.

Though it is understandable that RegTech is viewed as a subset of FinTech (as per the FCA's definition) – it is, after all, the use of technology in financial services, this conflation can also be problematic. The FinTech industry is associated with disruptive innovation, defined by Palmiere et al as "any innovation that shakes up an industry and substantially changes its competitive patterns"[5] which is exactly what FinTech has achieved – challenging existing business models in financial services by exploiting new technologies to reach underserved markets[6]. RegTech, however, whilst it may be disruptive of incumbent technology providers, is better understood as an enabler to financial services firms – helping firms from the disruptive challengers through to the well-established Tier 1 financial institutions meet their compliance requirements. There is academic support for this view, with Arner, Barberis and Buckly arguing that to consider RegTech as a part of FinTech is to underestimate the potential of the industry[7] and its inherent differences in terms of both origins and objectives.

Another important consideration is that financial services is not the only industry that benefits from the application of RegTech. Other, highly regulated industries such as the legal sector, government, gambling and gaming, healthcare and energy are also increasingly adopting RegTech[8]. To overcome these concerns, throughout the research for this project and in this report, RegTech is defined simply as **"the use of technology to help regulated firms meet their regulatory obligations"**.

1 Treleaven, P. (2015) Financial Regulation of Fintech *Journal of Financial Perspectives*, 3(3)

2 UK Government Office for Science (2015) FinTech Futures: The UK as a World Leader in Financial Technologies available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/413095/gs-15-3-fintech-futures.pdf (accessed January 2021)

3 FCA (2015) FS16/4 Call for Input: Supporting the development and adoption of RegTech available at https://www.fca.org.uk/publication/feedback/fs-16-04.pdf (accessed January 2021)

4 Bamberger argues that technology has been used to manage risk and regulatory obligations since the advent of modern risk regulation and the growth of governance, risk and compliance (GRC) software prior to the Global Financial Crisis in Bamberger, K.A. (2010) Technologies of Compliance: Risk and Regulation in a Digital Age Texas Law Review, 88(4)

5 Palmié, M., Wincent, J., Parida, V., & Caglar, U. (2020). The evolution of the financial technology ecosystem: An introduction and agenda for future research on disruptive innovations in ecosystems. Technological Forecasting and Social Change, 151, 119779. p.4

6 Christensen, C. M., Raynor, M. E., & McDonald, R. (2015). What is disruptive innovation. Harvard business review, 93(12), 44-53.

7 Arner, D. W., Barberis, J., & Buckey, R. P. (2016). FinTech, RegTech, and the reconceptualization of financial regulation. Nw. J. Int'l L. & Bus., 37, 371.

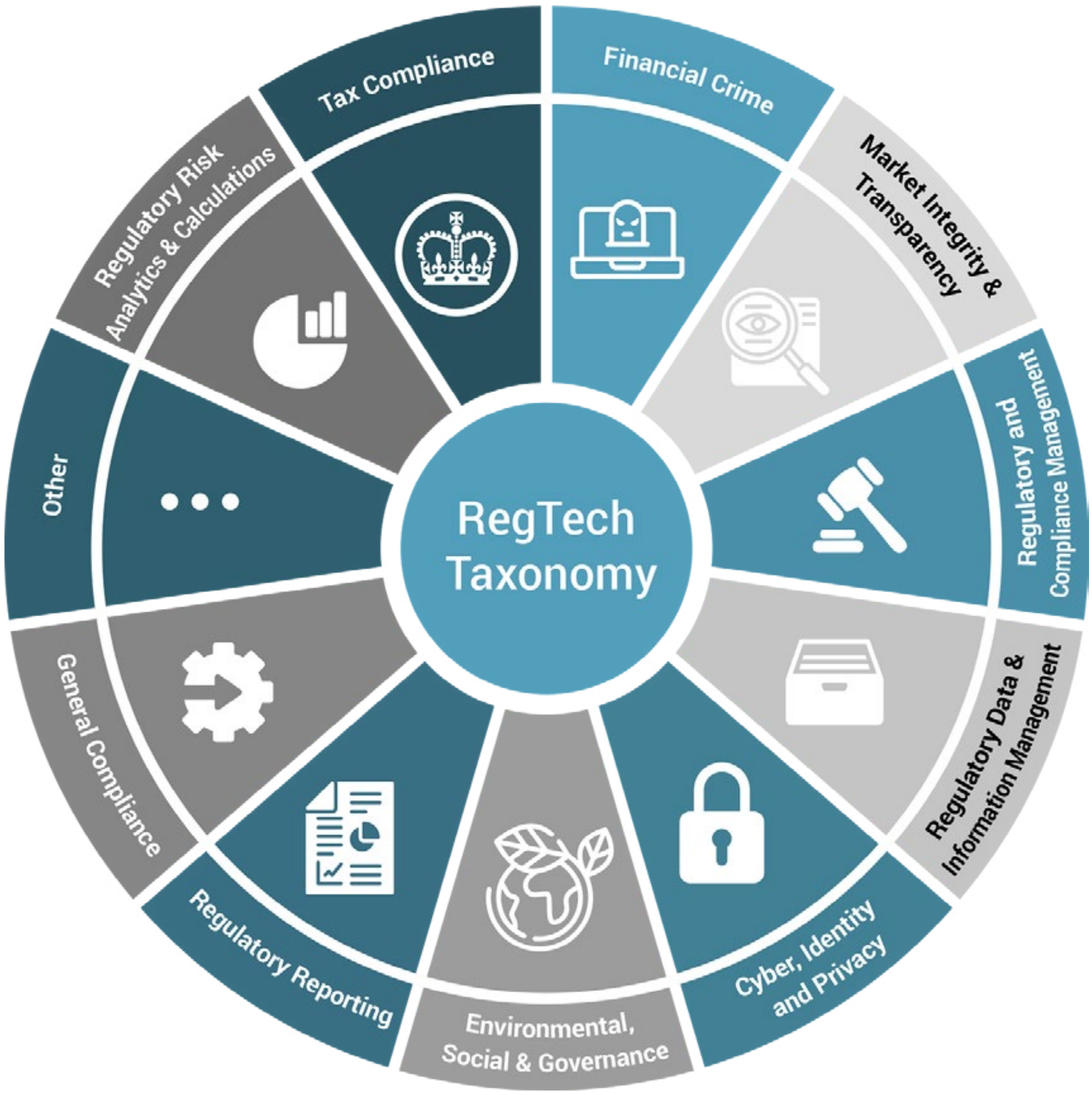
8 RegTech Associates research database, Radar.

1.3 RegTech – understanding the problems and solutions

Within financial services, regulatory obligations range from complex calculations for capital adequacy regulations through to ensuring the fair treatment of customers. Now, more than ever, regulation touches nearly every aspect of a financial institution – whether it is a bank, insurer or asset manager. To capture the richness of the types of RegTech solutions that are available in the market, RegTech Associates has developed a problem-oriented method of classifying RegTech products[9].

RegTech Associates has a research database of over 1,200 distinct RegTech products, categorised according to this taxonomy and the definitions found in Exhibit 1.1 Regtech Associates RegTech Taxonomy Definitions.

Figure 1.1 RegTech Associates Taxonomy of the RegTech Market



9 The Cambridge Centre for Alternative Finance researched the various RegTech taxonomies that have been developed, including the RegTech Associates proprietary taxonomy. See Schizas, E., McKain, G., Zhang, B. Z., Garvey, K., Ganbold, A., Hussain, H., ... & Yerolemou, N. (2019). The Global RegTech Industry Benchmark Report. Available at SSRN 3560811.

CASE STUDY

Regtech Associates – RegTech Taxonomy Definitions

Financial Crime (FinCrime)
Financial Crime deals with helping firms comply with anti-money laundering, fraud detection and counter terrorism financing legislation.

Regulatory Reporting (RR)
Regulatory reporting across a range of data types, including aggregated capital adequacy and risk management data.

Market Integrity & Transparency (MIT)
Financial markets are regulated to ensure they are fair, efficient and transparent. MIT helps firms comply with these regulatory requirements.

Regulatory & Compliance Management (RCM)
Regulatory change and ongoing compliance monitoring is a critical activity for all regulated firms due to the volume of rules with which they must comply and the rate and scale of changes to these rules.

Cyber, Identity and Privacy (CIP)
CIP focuses on helping firms address cybersecurity risks, data protection and data privacy issues, and ensuring the identity of all devices and applications for which the client is responsible are known, recognised and verified.

Regulatory Risk Analytics and Calculations (RRAC)
Several aspects of regulation require regulated firms to perform complex risk calculations, scenarios and simulations for various purposes such as pricing, capital allocation and stress testing. Firms are also required to perform calculations for prudential regulation such as Basel 3 and Solvency 2.

Regulatory Data and Information Management (RDIM)
Before firms can accurately analyse or report on regulatory data, there is a lot of work to do to improve data quality, understand the lineage of individual data items and apply best practice data governance principles. There is also a drive towards the need for common, granular data models to break down organizational data silos.

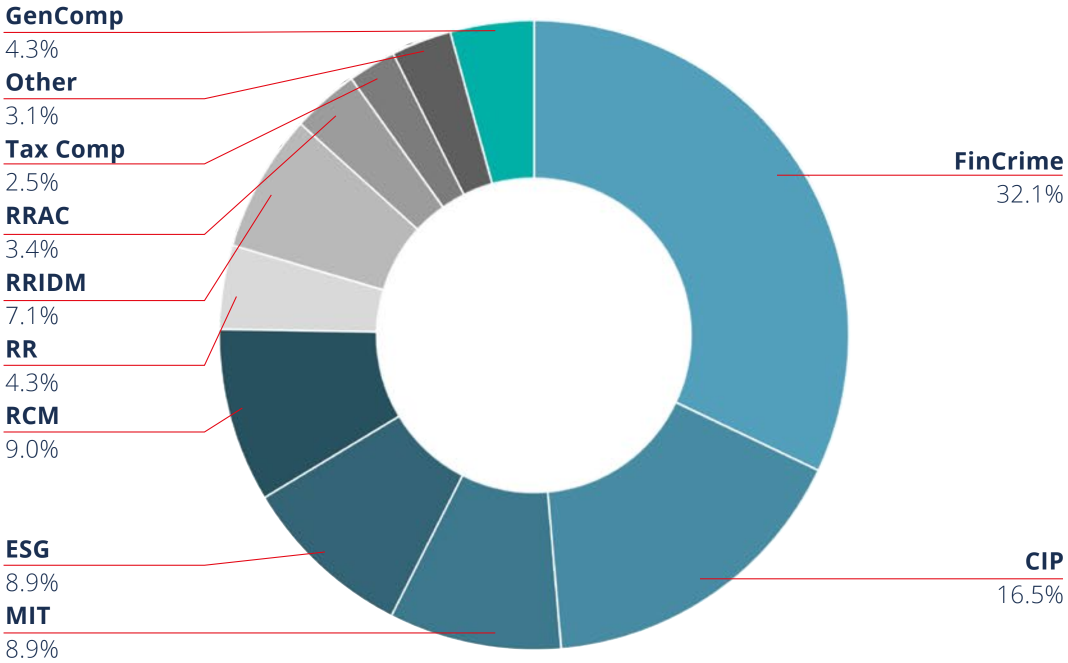
Environmental, Social, Governance (ESG)
ESG helps firms by integrating ESG factors into their middle and back office operations to ensure compliance with internal policies and external regulations.

General Compliance (GenComp)
General Compliance focuses on helping firms address problems that are either agnostic to specific types of regulation -- e.g. training, marketing compliance, supply chain risk -- or that cut across regulatory boundaries

Tax Compliance (TaxComp)
Products in this category tend to solve compliance problems that span a number of tax regulations

Other
This category includes RegTech products that focus on industry sectors other than financial services (e.g. healthcare) and products where regulatory compliance is one of many use cases for the technology.

Figure 1.2 Distribution of global RegTech products by category



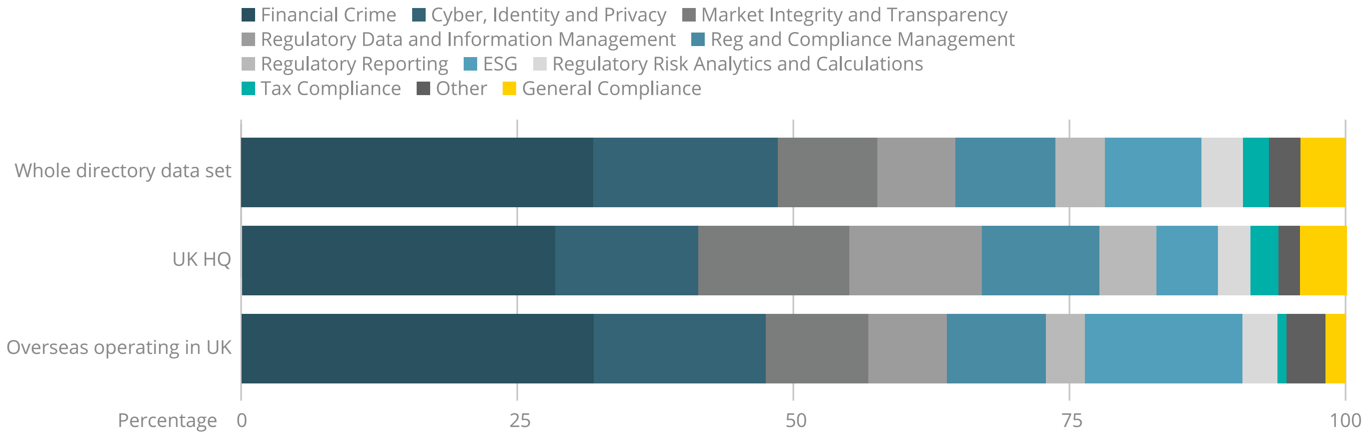
Globally, the distribution of RegTech products within these categories is as shown in Figure 1.2

Diving into the technologies that underpin these products, the data shows that the most common technologies used in the UK RegTech industry are[10]:

- **Cloud computing** – The delivery of computing services (servers, databases, software etc) over the internet to offer faster innovation and scalability. RegTechs use cloud computing to provide solutions for financial institutions to manage compliance while driving down costs related to installing and managing the solution.
- **Artificial Intelligence (AI)** – AI is technology which simulates human intelligence in machines that are programmed to think and act like humans. Different AI techniques are used by RegTechs such as such as machine learning, character recognition, natural language processing and predictive data analytics.
- **Application programming interface (API)** – a computing interface that relays information between multiple software intermediaries. RegTech Software as a service (SaaS) solutions use APIs to integrate data and solutions into existing client systems.
- **Robotic process automation (RPA)** – RPA is a software-based technology which can be easily programmed to automate basic, repetitive tasks. RPA is utilised by RegTechs to automate processes such as regulatory or tax reporting to increase efficiency and reduce human error.
- **Distributed ledger technology (DLT)** – DLT is a database that is consensually shared and synchronised across multiple sites, institutions or geographies, accessible by multiple users. RegTechs use DLT to improve regulatory reporting by providing high data granularity, data quality, and transparent view on live transactions.
- **Biometrics** – Biometrics are body measurements and calculations related to human characteristics. RegTech KYC platforms use biometric authentication as a form of identification, verification and access control.

10 RegTech Associates research database, Radar.

Figure 1.3 Comparison of distribution of RegTech categories in complete population versus UK Headquartered RegTechs and Overseas RegTechs operating in the UK



1.4 The UK RegTech industry

1.4.1 What problems is RegTech solving in the UK

The UK RegTech industry comprises 234 companies that are headquartered here and approximately another 335 companies that are based overseas and operate in the UK or worldwide. Figure 1.3 shows the distribution of the products from those companies across the RegTech categories compared to the overall global population of RegTech products.

It is clear from Figure 1.3 that the largest proportion of RegTechs headquartered in the UK and overseas RegTechs operating in the UK are classified as financial crime. Tackling money laundering, fraud and terrorist financing is a critical regulatory objective and one which is ripe for the use of machine learning and robotic process automation to gain significant efficiencies. In addition, some of the largest regulatory fines over the last ten years have been for AML failings in financial firms.

CASE STUDY

Spotlight on RegTech for Fighting Financial Crime

Financial firms have strict regulatory obligations when it comes to tackling money laundering and terrorist financing. These firms must prove they have a solid understanding of each customer and the financial crime risk that they pose to the firm – requiring the collection and validation of key information about their customers which must be constantly reviewed and kept up to date. For higher risk customers, such as politically exposed persons, enhanced levels of due diligence must be performed.

In addition, financial firms must monitor and report any suspicious transactional activity that could be indicative of money-laundering or terrorist financing.

Managing and remaining compliant with all these requirements is a very complex problem, but RegTech has proved to be particularly powerful in providing effective solutions.

By adopting technologies such as APIs and cloud-based infrastructure through which data can easily be delivered for customer checking, document verification or name screening purposes, much of the manual effort in the KYC process can be automated.

Machine learning is also a key technology driving the success of RegTech in helping to fight financial crime – ML combined with more traditional rules-based approaches can significantly enhance the detection of suspicious activity, analysing customer behaviour and multiple data sets to identify anomalies.

Notable successes in this category include the use of Quantexa by Standard Chartered[11] and the recent implementation of Silent Eight by HSBC[12].

11 https://www.quantexa.com/press/standard-chartered-and-quantexa-tackle-financial-crime/ (Accessed January 2021)

12 https://silenteight.com/2021/01/06/hsbc-and-silent-eight-announce-multi-year-partnership-to-fight-financial-crime/ (Accessed January 2021)

The next largest category of UK headquartered RegTech solutions is Market Integrity and Transparency, with just over 13.7% of products aiming to solve problems associated with conduct risk, detecting market abuse and insider dealing and ensuring fairness and transparency in financial markets. A lot of the products in this area were developed in direct response to the second EU Markets in Financial Instruments Directive and Regulation which entered into force in January 2018.

Cyber / Identity / Privacy (CIP) and Regulatory Data and Information Management (RDIM) are the next two largest categories, at 12.9% and 12% respectively. Products in the CIP category address cybersecurity risks, data protection and data privacy and ensure the identity of all devices and applications within a firm are known, recognised and verified. RDIM products focus on automated solutions to improve data governance, lineage and management, especially for data that is used for regulatory purposes e.g. regulatory or transaction reporting. For overseas RegTechs operating in the UK, CIP is in second place at 20.6%, whilst ESG is the third highest at 14.63%.

CASE STUDY

Spotlight on RegTech for Regulation and Compliance Management

Regulatory and compliance management is a critical activity for all regulated firms due to the volume of rules with which they must comply and the rate and scale of changes to these rules.

In addition, regulated firms need to have oversight of their compliance and regulatory risks across the enterprise, which means understanding which regulatory obligations map to which business processes, policies and controls. Finally, firms need to be able to prove their adherence to regulations and evidence this to their supervisors.

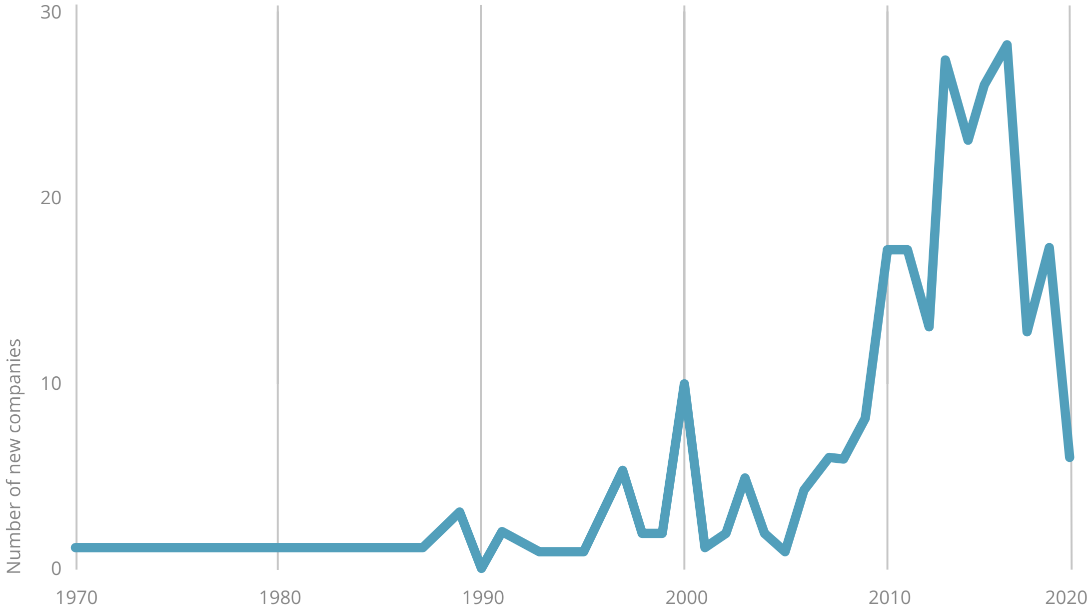
RegTech has come up with some novel solutions to support firms to ensure they understand all the upcoming changes to regulatory rules – for example using techniques such as computer vision and natural language processing to extract regulatory alerts and changes from regulators' websites and then apply machine learning to classify these changes so they can be analysed more easily.

Similar technologies can be applied to the existing rulebooks, and, combined with policy and control libraries, can provide a comprehensive and dynamic inventory of all the regulatory rules and obligations with which a firm must comply, making it easier to both monitor current compliance and understand the impact of any upcoming regulatory changes.

ClauseMatch, a document management and workflow collaboration platform that focuses on regulation and policy management, has demonstrated the value of its solution through a successful ongoing partnership with Barclays[13].

13 https://clausematch.com/blog/clausematch-barclays-compliance (Accessed January 2021)

Figure 1.4 Number of new RegTech companies founded by year in the UK



1.4.2 Industry maturity and growth

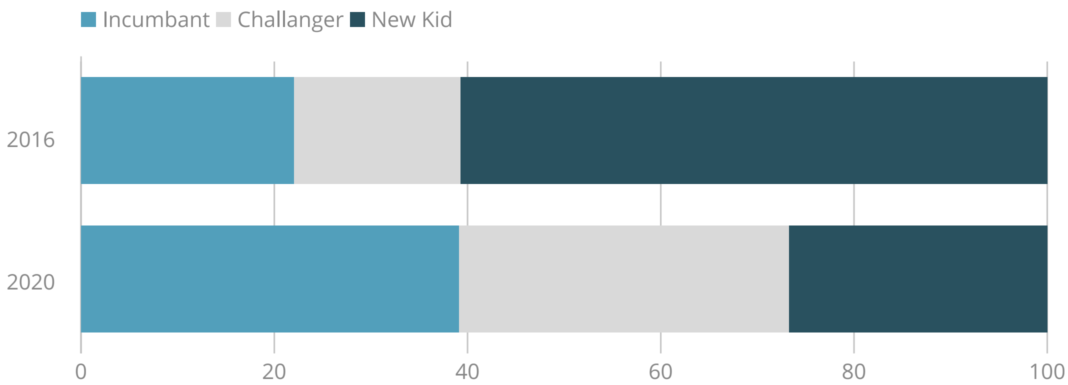
The UK RegTech industry is no longer dominated by small start-ups – the industry is maturing and RegTechs are seeking the scale and the funding to grow at speed. Historically, for RegTechs headquartered in the UK, the sector exhibited enormous growth from 2010 onwards, with a peak in 2016, as shown in Figure 1.4.

The sharp decline in the number of new RegTechs after this indicates that the industry is now scaling, and this is borne out considering the relative age of the UK RegTechs. Groupings of RegTechs by age bracket demonstrates this market maturity. These age brackets are:

- Incumbents (more than 10 years old)
- Challengers (between 5 and 10 years old) and
- New Kids on the Block (less than 5 years old)

Figure 1.5 compares the relative proportions of RegTechs in these age brackets between 2016 ('peak' RegTech) and 2020. There is a much lower number of New Kids on the Block in 2020 compared to 2016.

Figure 1.5 Comparison of RegTechs by age bracket – 2016 vs 2020



According to Tech Nation, the UK is the biggest 'scale-up' country in Europe, and in 2019 *"81.2% of UK tech investment was made into high-growth, high-productivity potential scaleup firms – those with at least 10 employees and growing by at least 20% year on year"*[14]. The RegTech market is following this trend with a focus on revenue growth and scaling, not just of companies but also of their products.

Globally, the RegTech industry continues to attract significant levels of funding. Estimates put the level of funding raised worldwide from 2017 to the end of June 2020 to between $11bn and $18.7bn[15]. It is difficult to obtain a more granular breakdown of funding for UK headquartered firms but RegTech Associates estimates that the figure for investment in UK-based RegTechs for the same time period is roughly $3bn[16].

Some of the most significant investment deals for UK RegTechs over the last two years are shown in Table 1.1. Notably, despite the circumstances of the coronavirus pandemic, 2020 saw some large later series funding rounds. Again, this is a characteristic of an industry that is scaling up at pace.

14 TechNation (2020) UK Tech for a Changing World: Tech Nation Report https://technation.io/report2020/#forewords (accessed January 2021)

15 KPMG (2020) Pulse of FinTech H1 2020 https://assets.kpmg/content/dam/kpmg/xx/pdf/2020/09/pulse-of-fintech-h1-2020.pdf (accessed January 2021), https://member.regtechanalyst.com/regtech-investment-in-h1-2020-defies-expectations-with-growth-in-funding-despite-economic-uncertainty/ (accessed January 2021)

16 RegTech Associates Database (Radar), Crunchbase

1.4.3 COVID-19 and RegTech

Against this backdrop of scaling and growth, in 2020 the coronavirus pandemic struck, creating a whole new set of challenges (and potential opportunities) for the RegTech industry to navigate. The FCA have suggested that COVID-19 is a 'key watershed moment'[17] for the industry and there are certainly a number of factors related to the coronavirus crisis that have driven demand for RegTech solutions.

Acceleration in the adoption of digital channels for financial services

Digital engagement levels in European banking have increased by 20%[18]. HSBC and Lloyds in the UK have reported significant increases in digital deposits [19]and some FinTech companies have reported significant upticks in their usage[20]. With this increase in digital customers, financial institutions have been forced to move to remote onboarding, using digital methods for Know Your Customer checks such as identify verification and document checking – something that many RegTech vendors are well positioned to assist with.

17 https://www.fca.org.uk/insight/regtech-watershed-moment (Accessed January 2021)

18 https://www.mckinsey.com/industries/financial-services/our-insights/no-going-back-new-imperatives-for-european-banking? (Accessed January 2021)

19 https://www.thisismoney.co.uk/money/saving/article-8254203/HSBC-Lloyds-report-thousands-digitally-scanning-cheques.html (Accessed January 2021)

20 https://www.forbes.com/sites/simonchandler/2020/03/30/coronavirus-drives-72-rise-in-use-of-fintech-apps/?sh=5c4c4cf566ed (Accessed January 2021)

Table 1.1 Significant funding deals for UK RegTechs 2019-2020

Name	Value	Deal Type	Date
Onfido	$105	Series D – Funding	April 2020
ComplyAdvantage	$88.2m	Series C – Funding	July 2020
Privitar	$80m	Series C – Funding	April 2020
Quantexa	$64.7m	Series C – Funding	July 2020
DueDil	$53.4	Series C – Funding	June 2019
SteelEye	$17.3m	Series A – Funding	February 2020
ACIN	£12m	Series A – Funding	September 2020
Railsbank	£8.14m	Series A – Funding	September 2019
Nexus Frontier Tech	£1.94m	Seed – Funding	November 2019
Clausematch	£1.9m	Venture Debt	May 2019

Financial institutions also need to be mindful of their obligation to manage conduct risks, no matter the channel used for digital interaction and the FCA's 2019/20 Business Plan stressed the importance of the fair treatment of digital customers, especially those that are potentially vulnerable. This is another growth area for RegTech solutions that can track customer behaviour and provide full transparency of every aspect of their digital interaction.

COVID-19 regulatory changes and announcements
Estimates from JWG and other vendors who track regulatory changes indicate by August 2020, more than 1,330 COVID-19 related regulatory announcements had been made globally by regulators[21]. RegTech solutions that automatically source, classify and route such changes to the relevant parts of a financial institution can help to ensure firms keep on top of the latest COVID-related news to ensure compliance.

Mass transition to remote working
Almost overnight, the majority of businesses in the UK switched to remote working, testing the resilience and flexibility of their remote working infrastructures. For financial services firms, specific compliance challenges arose, particularly around surveillance for market abuse and manipulation at a time when markets were increasingly volatile and more alerts than usual were being generated. Concerns were raised over firms' abilities to adequately monitor communications on virtual platforms such as Zoom and the lack of scrutiny over a distributed workforce have provided RegTechs with opportunities to gain further market share.

Exacerbation of fraud and financial crime
In April 2020, the Financial Action Task Force (the global oversight body for anti-money laundering and counter-terrorist financing) issued a statement warning of the enhanced financial crime and fraud risks resulting from nefarious actors attempting to exploit the pandemic and of the need for increased vigilance to mitigate these risks. Specifically, FATF explicitly stated that it 'encourages the use of technology, including Fintech, RegTech and SupTech to the fullest extent possible'[22].

Again, RegTech providers are extremely well positioned to respond to increased levels of financial criminality – these solutions are often easier to configure to combat new typologies of fraud or money-laundering and can cope with changing patterns of customer behaviour without raising high volumes of false alerts.

1.5 UK regulatory and policy context

1.5.1 Regulatory philosophy

Over the last twenty years, the UK has embraced an approach to financial regulation known as management-based regulation where *'regulators do not prescribe how regulatees should comply, but require them to develop their own systems for compliance and to demonstrate that type of compliance to the regulator'*[23]. What this means more practically is that the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA) will not prescribe the precise policies, processes, systems and controls that regulated firms must have in place to ensure compliance, but are focused on the outcomes and firms' efficacy in managing both financial and non-financial risks, as well as protecting customers and investors and ensuring fair and efficient markets.

In combination with this management-based approach to regulation, the concept of 'technology neutrality' has emerged in parallel with the exponential growth of information, communications and technology (ICT). Legislators and policymakers have adopted this principle of 'technology neutrality' in regulation and two key meanings of this principle are relevant here. The first is that 'the same regulatory principles should apply regardless of the technology used. Regulations should not be drafted in technological silos'[24] and the second is that 'regulators should refrain from using regulations as a means to push the market toward a particular structure that the regulators consider optimal. In a highly dynamic market, regulators should not try to pick technological winners'[25].

Whilst originally conceived as a principle for regulating ICT markets, financial regulators

21 https://www.corlytics.com/news-releases/out-of-the-window-covid-19-prompts-unexpected-regulatory-change-for-2020-compliance-risk-management-workplans/ (Accessed January 2021)

22 https://www.fatf-gafi.org/publications/fatfgeneral/documents/statement-covid-19.html (Accessed January 2021)

23 Black, J. (2012) Paradoxes and failures: 'new governance' techniques and the financial crisis The Modern Law Review, 75(6) 1037-1063

24 Maxwell, W. J., & Bourreau, M. (2014). Technology neutrality in internet, telecoms and data protection regulation. Computer and Telecommunications Law Review, 31, 1-8.

25 ibid

have also adopted this principle. In 2017, the FCA said 'our regulatory philosophy (subject to any risks to our objectives) is to be 'technology-neutral'[26] though the FCA's Director of Innovation recently suggested that in time, this approach may need to flex given the centrality of technology to the markets that the FCA regulates[27]. What won't change is the regulators' need to be 'vendor-neutral' – there will be no endorsement for specific solution providers or products any time soon, despite both the FCA and Bank of England's ongoing support for technology innovation.

1.5.2 Government and regulatory support for RegTech

The UK technology sector has a reputation for being world-leading, especially in terms of the level of private sector investment it attracts which in 2019 alone was £10.1bn[28]. But the public sector also plays a crucial role in encouraging innovation, and innovation and technology is a key pillar of the UK Government's 2017 Industrial Strategy[29]. RegTech has benefited from funding and tax incentives that have been targeted towards the technology sector – some of the most relevant examples are given in Exhibit 1.4.

CASE STUDY

UK financial support for technology innovation

Funding

Innovate UK holds regular funding competitions for businesses and research organisations. These competitions are either thematic or open. The open grant funding programme is a bottom up call and any ideas are potentially eligible.

Government start-up loans – the scheme offers up to £25,000 to firms at a fixed interest rate of 6% p.a

Small Business Research Initiative (SBRI) – Delivered by Innovate UK: The initiative aims to support public sector challenges with innovative ideas from SMEs. The competition based scheme allows businesses to win anything from £50,000 to £100,000 to test their idea which can lead to contracts of up to £1m to develop. UK based RegTech, Waymark, has successfully won an SBRI grant, working with the Better Regulation Unit within the Department of Business, Enterprise, Industry and Skills.[30]

Tax incentives

R&D Tax Credit – Companies which focus on science and technology advances are able to reduce their corporation tax by claiming an R&D tax credit. In order to qualify, firms must have fewer than 500 employees and an annual turnover of less than €100 million to claim relief equivalent to 230% of qualifying expenditure.

The Patent Box – This incentive enables companies to apply a 10% lower rate of corporation tax from the development and exploitation of patented inventions and other intellectual property introduced in the UK.

The Seed Enterprise Investment Scheme (SEIS) – UK taxpayers investing in qualifying start-ups for the first £100,000 seed investment are eligible for 50% income tax relief.

The Enterprise Investment Scheme (EIS) – Similarly to SEIS, private investors are eligible for 30% income tax relief.

26 FCA (2017) Distributed Ledger Technology Feedback Statement on Discussion Paper 17/03 https://www.fca.org.uk/publication/feedback/fs17-04.pdf (accessed January 2020)

27 https://www.fca.org.uk/news/speeches/innovation-hub-innovation-culture (Accessed January 2021)

28 https://technation.io/report2020/#10-investment (Accessed January 2021)

29 https://www.gov.uk/government/topical-events/the-uks-industrial-strategy (Accessed January 2021)

30 https://www.theiaengine.com/member-news/waymark-tech-secures-phase-2-grant-from-sbri-and-govtech-catalyst/ (Accessed January 2021)

From a regulatory perspective, the UK's Financial Conduct Authority and the Bank of England have been at the vanguard in their support of technology innovation. From its inception in 2014, FCA Innovate has been providing support to both FinTechs and RegTechs and has come up with some novel initiatives to use technology for solving some of the financial services industry's most intractable problems. Seven 'TechSprints' have been held to date, the first focusing on Consumer Access and the most recent in 2019 centering on AML and involving 40 organisations and 140 participants[31]. Run by the FCA's RegTech team, these TechSprints have offered a model of collaboration across industry, vendors and regulators which have demonstrated the power of what can be achieved when these three sets of actors work together.

Building on this success, the FCA and the Bank of England joined forces to reimagine the process of regulatory reporting by making it truly digital. Through a series of phases, the Digital Regulatory Reporting pilot has sought to improve the efficiency of regulatory reporting and thereby reduce the burden (and cost) to firms. An outline of this initiative can be found in Exhibit 1.5. More recent developments include a collaboration between the FCA and the City of London Corporation on a 'digital sandbox' – a testing environment to 'provide innovative firms with access to high-quality data sets to allow for the testing and validation of technology solutions'[32], focusing on use cases to support the recovery from the coronavirus pandemic.

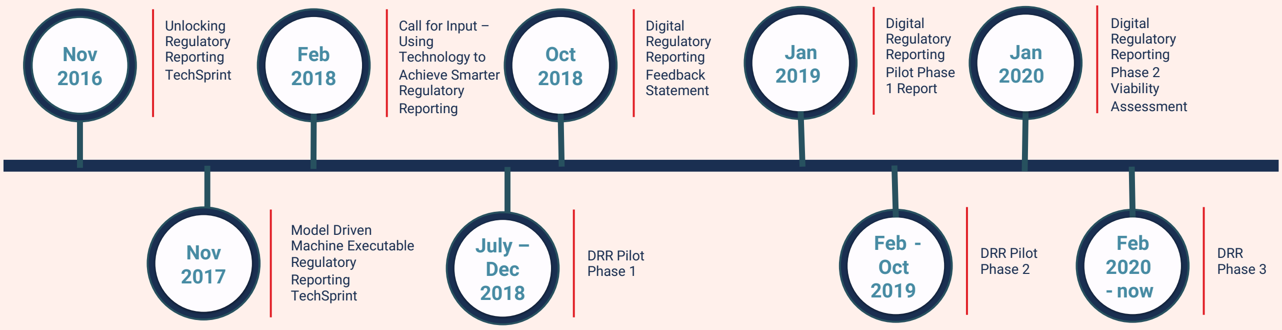
In addition to these specific activities, the FCA RegTech team holds showcase days and engages with the RegTech industry via the RegTech Forum, a monthly event that creates a platform for the industry, RegTech firms and regulators to discuss development and opportunities in the RegTech world. Clearly, there is an enormous amount of work that has already been done by both the FCA and the Bank of England to support the UK's RegTech industry within the parameters of their mandates and this is viewed very favourably by the RegTech industry.

31 FCA (2020) Fostering innovation through collaboration: The evolution of the FCA TechSprint Approach https://www.fca.org.uk/publication/research/fostering-innovation-through-collaboration-evolution-techsprint-approach.pdf (Accessed January 2021)

32 https://www.fca.org.uk/news/press-releases/fca-and-city-corporation-collaborate-help-innovative-companies-drive-recovery-coronavirus (Accessed January 2021)

EXHIBIT 1.5

Digital regulatory reporting – a true example of collaboration



In November 2016, the FCA ran its first TechSprint on the topic of regulatory reporting – exploring how the FCA handbook could be converted into machine-readable text and the possibilities for moving from a 'push' model of data reaching the regulators to a 'pull' model, where the regulators access the data from firms as and when required. Following this, a more detailed TechSprint was held in conjunction with the Bank of England in November 2017, which proved out the technology required to take a regulatory reporting requirement from the Handbook and convert it into machine-executable code that a financial institution could then use to supply the required data.

Building on this success, the first pilot phase of the Digital Regulatory Reporting project was launched, which brought together six financial institutions and project team members from the Bank of England and the FCA to explore the feasibility of scaling the proof-of-concept work done from the November 2017 TechSprint. Phase 2 of the DRR pilot took some of the open questions and issues raised in the first phase – such as the economic viability of the approach for smaller financial institutions – and published the viability report in January 2020. The main finding was that though the business case for DRR required further work, the real value of the initiative would only be unlocked with the full strategic support of financial firms and regulators.

Both the FCA and the Bank of England are now focused on embedding the findings from the DRR into their respective data strategies[33], with the Bank of England committed to improving the timeliness and effectiveness of data collection across the financial sector. For the FCA, the DRR project continues with Phase 3, establishing the foundation for machine-readable and executable rules, improving the value of the data that is collected and working on the standardisation of data.

What is notable about the DRR journey is the degree of cross-industry collaboration, and the joined-up approach of the key regulators. Many of the problems associated with regulatory obligations have challenges that are common to all regulated firms and through the use of innovative technology and the power of collaboration, the DRR project demonstrates that workable solutions are more likely to be found.

33 https://www.bankofengland.co.uk/news/2020/January/fca-and-boe-announce-proposals-for-data-reforms-across-the-uk-financial-sector (Accessed January 2021)

1.5.3 Regulatory support for RegTech globally and in other jurisdictions

The FCA's pioneering approach to RegTech also has a global reach through the founding of the Global Financial Innovation Network (GFIN), based on a proposal the FCA made in 2018 for a global regulatory sandbox. Launched in January 2019, GFIN describes itself as 'a network of over 60 organisations committed to supporting financial innovation in the interests of consumers. It seeks to provide a more efficient way for innovative firms to interact with regulators, helping them navigate between countries as they look to scale new ideas'[34]. The first pilot attracted several RegTech firms, largely focused on how their financial crime solutions could be scaled across borders. Whilst there is some way to go in proving the value of GFIN, there is no doubt that initiatives such as this can help enormously when RegTechs are trying to scale and expand overseas.

Whilst the UK can be viewed as being ahead of the curve in its support for RegTech, global regulatory bodies and regulators in other jurisdictions are also recognising the potential that RegTech has for enhancing compliance in their regions. From a global perspective, the Bank of International Settlements (BIS) has set up an innovation hub and it partnered with the G20 in 2020 to hold a global TechSprint to find innovative solutions for operational problems in the area of regulatory compliance. Three use cases were explored – regulatory reporting, monitoring and surveillance and dynamic information sharing. The winners included two UK-based RegTech firms – FNA and RegNOSYS. Work in the BIS Innovation hub will continue into 2022, focusing on how RegTech can support supervisory activities such as regulatory reporting.

For national regulators, a recent study by the Financial Stability Board (FSB) found that a third of the authorities they surveyed had a strategy to promote or encourage the use of RegTech and that the most common areas for supporting the use of RegTech were in financial crime compliance and regulatory reporting[35]. Despite this, over half the sample do not encourage the use of RegTech so there is a very mixed picture. One region that has been particularly active in the support of the RegTech industry are regulators in APAC, with some examples of their initiatives described below.

Monetary Authority of Singapore
The Monetary Authority of Singapore (MAS) has held annual awards for innovative FinTech and RegTech solutions, announcing the winners during Singapore's annual FinTech Festival. As well as providing clear guidance to financial firms on outsourcing, MAS has also issued a set of guidelines around technology risk management which describes the best practices for sound technology risk governance[36]. Finally, MAS has established a Productivity Solutions Grant to provide smaller financial firms with funding to adopt regulatory reporting solutions, valued at up to $250,000 per firm[37].

Hong Kong Monetary Authority
In November 2020, the Hong Kong Monetary Authority published a white paper establishing a two year roadmap for the promotion of RegTech adoption in the jurisdiction. With five areas of recommendations, the vision is wide-ranging and the actions that the HKMA plans to take to implement the recommendations are:

- hosting a large-scale event to raise the banking sector's awareness of the potential of Regtech;
- launching a Regtech Adoption Index;
- organising a Global Regtech Challenge to stimulate innovation;
- publishing a "Regtech Adoption Practice Guides" series;
- creating a centralised "Regtech Knowledge Hub" to encourage information sharing; and
- establishing a Regtech skills framework to develop talents[38]

Australian regulators
In Australia, funded by the Federal Government, the Australian Securities and Investments Commission has pursued several initiatives to promote the adoption of RegTech

34 https://www.thegfin.com/ (Accessed January 2021)

35 FSB (2020) The Use of Supervisory and Regulatory Technology by Authorities and Regulated Institutions: Market developments and financial stability implications

36 Monetary Authority of Singapore (2021) Technology Risk Management Guidelines https://www.mas.gov.sg/-/media/MAS/Regulations-and-Financial-Stability/Regulatory-and-Supervisory-Framework/Risk-Management/TRM-Guidelines-18-January-2021.pdf (Accessed January 2021)

37 https://www.mas.gov.sg/development/fintech/psg-grant-for-financial-services-sector (Accessed January 2021)

38 HKMA & KPMG (2020) Transforming Risk Management and Compliance: Harnessing the Power of RegTech https://www.hkma.gov.hk/media/eng/doc/key-information/press-release/2020/20201102e3a1.pdf (Accessed January 2021)

within Australia. Using this funding, between 2018 and 2020 ASIC selected a number of difficult problems to address through problem solving events, trials and webinars covering topics from financial promotions to a chat-bot to help navigate the financial services licensing framework[39].

Australia's Prudential Regulation Authority (APRA) has followed a similar path to the Bank of England, looking towards RegTech to streamline its own data collection and regulatory reporting processes, whilst at the same time, encouraging the adoption of RegTech within its regulated community to make their data and reporting capabilities more efficient. APRA also engages with the RegTech industry through ongoing engagement with Australia's RegTech industry association[40].

1.5.4 A note on SupTech

A term created to describe the use of RegTech by supervisory authorities themselves, SupTech can be viewed as the other side of the RegTech coin. Many regulatory authorities are actively exploring how they can make use of innovative technology solutions to better execute their supervisory duties. The study by the Financial Stability Board[41] showed that the most common uses for SupTech tools were for regulatory reporting and data management (as in the case of the FCA and the Bank of England), market surveillance, analysis of misconduct and microprudential supervision. This report also details twenty-six case studies where SupTech has been used to solve specific regulatory or supervisory problems.

What is perhaps most pertinent to this report are some of the risks and challenges faced by regulators in the adoption of SupTech and these include:

- Data quality and data standards as being prerequisites for effective SupTech implementations
- Cyber-risk and data security
- Increased dependency on third party providers
- Attracting the skills and talent such as data scientists and engineers that also have regulatory and supervisory domain expertise
- Challenges to cross-border data sharing due to localisation measures

1.6 Benefits of RegTech

"The benefits and opportunities of regtech and suptech for regulated entities and supervisory authorities to improve efficiency, reduce manual processes and make effective use of data are enormous. As they are more widely adopted, these technologies can enhance diligence and vigilance in risk monitoring and management in real time, improving the resilience and stability of the broader financial system."[42]

In an influential article, Arner et al claim that RegTech has the potential to 'lead to a paradigm shift in regulation', enabling real-time surveillance of the financial markets and even predicting where risks and problems will emerge, ultimately moving supervision and enforcement from a necessarily reactive endeavour to one that is preventative. Whether one agrees with the transformative power of RegTech that this would entail, there is consensus about the slightly more modest benefits that RegTech can deliver.

1.6.1 Reduction in risk

The financial services industry has developed many sophisticated techniques for managing all types of risk – risk is fundamental to the business of the sector. Managing the risk of regulatory compliance has been a fairly new development,[43] but with the enormous financial cost of regulatory infractions[44] since the global financial crisis, managing the risk of non-compliance is more essential than ever. Operational and human errors resulting

39 ASIC (2021) ASIC's RegTech Initiatives 2019-20 https://download.asic.gov.au/media/5937756/rep685-published-20-january-2021.pdf (Accessed January 2021)

40 https://www.apra.gov.au/submission-to-senate-select-committee-on-financial-technology-and-regulatory-technology (Accessed January 2021)

41 FSB (2020) The Use of Supervisory and Regulatory Technology by Authorities and Regulated Institutions: Market developments and financial stability implications

42 Cœuré, B. (2020) Speech: Leveraging technology to support supervision: challenges and collaborative solutions Bank of International Settlements https://www.bis.org/speeches/sp200819.htm (Accessed January 2021)

43 Lewin, S., 2016. Regulated organizations: responding to and managing regulatory change. The London School of Economics and Political Science.

44 One estimate puts the total cost of US and EU regulatory fines at over $342bn https://www.reuters.com/article/us-banks-regulator-fines/u-s-eu-fines-on-banks-misconduct-to-top-400-billion-by-2020-report-idUSKCN1C210B (Accessed January 2021)

from manual processes can be significantly reduced through the automation capabilities of RegTech solutions.

RegTech solutions also have the capability to process large volumes of disparate data to identify previously undetected risks (especially for fraud and financial crime) and to provide early warnings through the use of predictive analytics. Individual firms can therefore benefit from more robust compliance risk management – but this reduction in risk also scales up with the potential to 'strengthen the resilience of the financial system through new means to facilitate or improve supervision, surveillance and enforcement by authorities; and reporting and compliance by regulated institutions'[45].

1.6.2 Improvements in efficiency and effectiveness

As well as risk reduction, automating repeatable, standardised tasks can significantly improve the efficiency of managing compliance – releasing people to focus on more 'high value' tasks such as analysis and decision-making. One clear example of this is in the customer onboarding process, where manual processes used to verify identification and obtain documentation during the account opening process can be automated, speeding up the process and smoothing out the experience for the customer.

Effectiveness of processes can also be improved, having a knock-on effect on efficiency as well as cost (see below). It is well known that incumbent, rules-based systems for monitoring transactions for suspicious activity throw up a high level of false-positive alerts (in some cases, this can be as much as 95-99%), each of which needs to be investigated by an analyst. By layering more innovative technologies over the top, such as machine learning, some providers are able to achieve a reduction in false positives by as much as 40%[46].

1.6.3 Cost savings

There is no doubt that regulatory compliance is an expensive business – and that these costs continue to grow[47]. In the UK, the projected annual cost of financial crime compliance alone is $49.5bn[48], whilst another study found that more than a third of financial services respondents said they would be spending more than 5% of their revenue on compliance[49]. If this 5% figure is accurate, the annual cost of compliance for the UK's top five banks[50] (based on 2019 revenue figures) is around £5.2bn.

However, by improving the efficiency and effectiveness of regulatory and compliance processes, RegTech also promises to deliver cost savings to financial institutions. Using the figures stated above, and applying a very conservative assumption that RegTech could save at least 0.05% of total compliance costs, there would be an annual saving of £523m for these five banks alone – £523m which could be redirected to improve the profitability and therefore the competitiveness of individual firms and the UK financial sector more generally.

1.6.4 Enabling greater insights for decision making

By making use of technological infrastructure such as cloud computing and APIs, as well as new analytical methods and tools, RegTech provides new capabilities in the realm of data analysis. New sources of unstructured data can be added to more traditional structured data sets to gain new insights, highlighting new sources of risk – not just in financial crime but also in terms of market manipulation and insider dealing. For example, by bringing trade and communications surveillance together in one platform, RegTech can enable consolidated reporting for regulatory purposes or for management information to aid decision making.

45 FSB (2020) The Use of Supervisory and Regulatory Technology by Authorities and Regulated Institutions: Market developments and financial stability implications p3

46 Deloitte (2018) The case for artificial intelligence in combating money laundering and terrorist financing: A deep dive into the application of machine learning technology https://www2.deloitte.com/content/dam/Deloitte/sg/Documents/finance/sea-fas-deloitte-uob-whitepaper-digital.pdf (Accessed January 2021)

47 Thomson Reuters (2020) Cost of Compliance: New decade, new challenges.

48 LexisNexis Risk Solutions (2020) True Cost of Financial Crime Compliance Study

49 Duff & Phelps (2020) Global Regulatory Outlook 2020: The Regulatory Outlook Evolves https://www.duffandphelps.com/insights/publications/compliance-and-regulatory-consulting/global-regulatory-outlook-2020 (Accessed January 2021)

50 Barclays, HSBC, Lloyds, NatWest and StandardChartered

1.7 Importance of RegTech to the UK economy

Whilst detailed economic modelling was outside the scope of this research, it is clear that the UK RegTech industry could play an important role in its contribution to both the digital economy and to the financial services industry.

The RegTech industry in the UK is making a contribution to the economy both directly – through taxation and job creation, and indirectly. RegTech Associates data shows that there are around 230 RegTech companies head-quartered in the UK. In addition, there are 330 overseas RegTech firms either with an office in the UK or who are operating globally. RegTech Associates estimates that the UK RegTech industry employs approximately 68,000 people, occupying a number of roles from software developing through to sales, marketing and finance. This amounts to 2.3% of all the jobs in the UK's Technology Sector[51]. Given that RegTech is an industry that is clearly scaling-up, there is huge potential for additional job creation in this sector, helping to strengthen the UK's place as a centre for global technology innovation or a 'scientific superpower'[52].

Indirectly, greater adoption of RegTech can add further value to the UK economy by realising the benefits outlined above – making UK financial services firms are more efficient (e.g. faster processes at lower cost) and lowering systemic risk (e.g. firms are more secure and manage their risks more effectively) with better outcomes for customers and investors. A healthy RegTech industry can contribute to a more profitable financial sector, increasing tax revenues and maintaining the UK as a pre-eminent global financial services hub.

1.8 Conclusion

RegTech in the UK is an industry at the cusp of maturity, an industry with the potential to scale and realise great benefits for the UK financial services sector and the economy as a whole. As part of the UK's world-leading digital sector, RegTech demonstrates innovation and inventiveness and applies technology to solve a range of regulatory and compliance challenges that have previously been thought to be intractable.

Regulators also see the potential of RegTech, not only for the financial services industry but through its application to their own supervisory responsibilities, all contributing to the strength and soundness of the financial system. If RegTech is to achieve the vision of a 'paradigm shift' in regulation, much more needs to be done to accelerate the growth and build trust between regulators, financial institutions and vendors.

The remainder of this research report focuses on the empirical evidence gathered through quantitative and qualitative fieldwork, telling a story of an industry that has a desire to scale but needs to overcome complex network of challenges in order to do so.

51 Based on 2019 figures of UK Tech employing 2.93 million people from Tech Nation https://technation.io/jobs-and-skills-report/#key-statistics (Accessed January 2021)

52 HM Treasury Spending Review 2020 https://www.gov.uk/government/publications/spending-review-2020-documents/spending-review-2020 (Accessed January 2021)

Chapter 2

Key findings

This section focuses on the results of the fieldwork and is centred on five key themes:

UK RegTech adoption

UK RegTech sales performance

Barriers to adoption

Impact of COVID-19

Demand drivers

2.1 Overview

This section focuses on the detailed results of the fieldwork conducted for the report, and is centred on five key themes:

UK RegTech adoption – a review of the high level findings from the survey (2.2.1), together with an explanation of broader market trends (2.2.2) and the comparable views of regulators and institutions interviewed for the study (2.2.3). This section also includes boxouts on each of the spotlight categories selected for the report – financial crime (FC) and regulatory and compliance management (RCM).

UK RegTech sales performance – a review of the reported UK sales performance of RegTechs in the period 2019-20 (2.3.1), forecast UK sales performance in the period 2020-21 (2.3.2), with discussion of the different micro-trends evident across solution categories.

Barriers to adoption – a review of the barriers to adoption identified in the report (2.4.1), with an analysis of key findings (2.4.2) and a spotlight on the trends seen in different RegTech categories (2.4.3). External barriers to adoption are considered (2.4.4) introducing the views of institutions on adoption barriers in general (2.4.5) and on budget availability in particular (2.4.6). The views of regulators regarding these barriers are then discussed, both in general terms (2.4.7) as well as in relation to the theme of market awareness of RegTech (2.4.8) as well as the apathy of boards towards RegTech projects (2.4.9). Finally, a series of additional barriers that surfaced through the interviews with institutions are considered (2.4.10).

Impact of COVID-19 – a review of the reported impact of the pandemic on UK RegTech adoption (2.5.1) as well as its influence on discrete RegTech categories (2.5.2). The notion of the pandemic as a 'watershed moment' for RegTech is also considered (2.5.3) as are its broader implications for UK RegTech business performance (2.5.4) and demand for solutions (2.5.5).

Demand drivers – to close out the key findings, the measures that vendors were looking for to help stimulate demand for RegTech solutions in the UK are considered (2.6.1).

2.2 UK RegTech adoption

2.2.1 High level findings

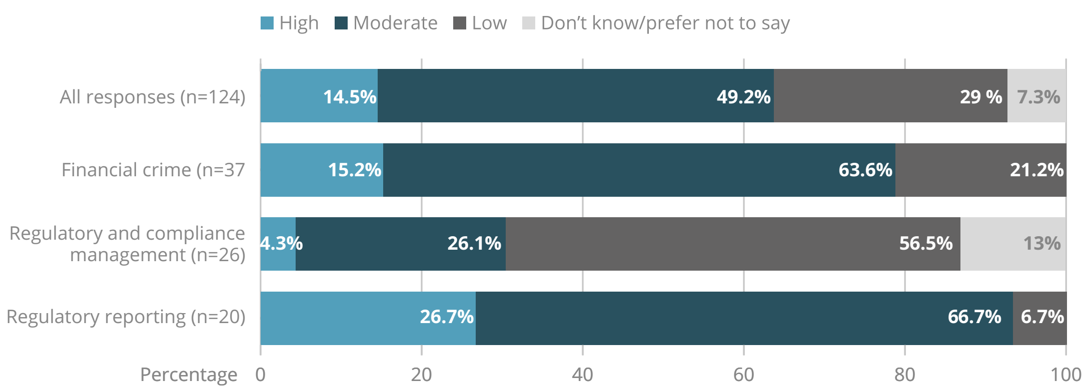
One of the key research objectives was to gauge the level of demand and adoption of RegTech in the UK. Most of the vendors who completed the survey believe there is still some way to go before the UK RegTech market becomes saturated. Indeed, as Figure 2.1 shows, almost half (49.2%) regard the level of RegTech adoption by UK FSIs to be 'moderate' in scale. Whilst vendors observe the banks, asset managers, insurers and other financial services organisations are adopting solutions in certain critical areas, RegTech is not yet being implemented widely.

Notably, however, for more than one-quarter of respondents (29.0%) the UK picture is far less positive, with RegTech adoption characterised as 'low'. In this scenario, institutions are still only experimenting with RegTech and are yet to show the desire to fully commit time and resources to a fully-fledged RegTech strategy. This view was particularly evident in the case of Regulatory and Compliance Management (RCM) vendors, 56.5% of whom considered levels of RegTech adoption to be low. In contrast, fewer than half as many

Figure 2.1 Perceived levels of RegTech adoption by financial institutions (n=125)

Question: *"How would you rate the level of RegTech adoption within UK financial services institutions?"*

Source: UK RegTech Vendor Survey 2020 (City of London Corporation/RTA)



(21.2%) of Financial Crime (FC) vendors shared that gloomy opinion. And, turning to Regulatory Reporting (RR), the proportion of vendors reporting low levels of adoption dwindles down to only 6.7%. Clearly then, vendors occupying different solution categories have had different experiences of traction and penetration in the UK market. Indeed, this trend is something that plays out again and again across the research themes, underscoring the complex nature of the response needed to achieve sustainable growth.

At the most positive end of the spectrum, 12.4% of survey respondents overall described the level of RegTech adoption by UK institutions as 'high'. In their view, most UK FS firms are using RegTech tools and solutions across the board, engaging fully with the opportunities presented by technology-enabled compliance. Again though, the same sub-trend is evident when comparing categories. While an above average 15.2% of FC vendors regarded adoption to be high, this figure drops sharply, to only 4.4% in the RCM category. And, once again, RR vendors prove themselves to be a most optimistic cohort, with more than one-quarter (26.7%) reporting high levels of adoption in UK financial services, well above the average and considerably more than FC and RCM combined.

2.2.2 Market context & category comparison

In many ways these diverse adoption dynamics are reflective of broader market trends, including the scramble to better protect economies from the impact of collapsing financial institutions. Nowadays, financial firms are required to deliver more data to more regulators than ever before. In part, this has been mandated to satisfy a much wider and more complex set of capital- and scenario-based stress tests, as well as waves of new regulation originating from all corners of the global financial markets. Understandably then, the complex set of challenges arising from this wave has demanded that firms explore fresh technology-led approaches. Regulatory reporting activities, for example, are now widely acknowledged to be a major driver of compliance cost for firms[53]. They encompass complex chains of data collection, quality assurance, consolidation, aggregation and integration processes. As a result, demand for tools that address elements of the regulatory reporting value chain have been relatively brisk in recent years, which may help to explain some of the variation in results between categories.

High levels of adoption are also evident in the financial crime space, where a rapidly rising tide of identity theft, fraud and terrorist financing activity has put firms on the hunt for solutions to protect themselves and their customers. Not only are institutions exposed to the losses triggered by successful financial crime, but also to an intangible impact on trust and reputation, as well as the cost of fines and settlements relating to past compliance issues. Failures in areas such as money laundering, sanctions screening, trade surveillance and watchlist monitoring, can be many times more costly than the direct losses incurred through fraud[54]. And so, in the face of material risk, firms have been swift to bolster their financial crime defences with new tools.

Solutions for detecting breaches – many powered by the latest advances in artificial intelligence (AI) and data analytics – were big business even before the global pandemic swept around the globe in 2020[55]. However, COVID-19 has proven itself to be a potent accelerant for the buying cycle. Indeed, it effectively rewrote the rules of global commerce almost overnight, forcing whole populations to take refuge at home to avoid spreading the infection. This in turn left institutions less able to effectively monitor their staff at home and forced many inexperienced customers to grapple – *sometimes for the first time* – with services like e-banking and online shopping. Consequently, the attack surface for fraud and financial crime was massively expanded in 2020[56]. Small wonder then that 78.8% of vendors serving this booming market segment reported seeing moderate or high levels of engagement from institutional buyers last year.

53 The Bank of England estimates that regulatory reporting activity costs UK Banks a minimum of £2.0-4.5 billion annually. For more details see: Bank of England, "The Bank of England's response to the van Steenis review on the Future of Finance", July 2019 https://www.bankofengland.co.uk/-/media/boe/files/report/2019/response-to-the-future-of-finance-report.pdf

54 A recent study by Duff & Phelps found that there were 20 fines levied in the period January to June 2020 of more than $1 million for institutional breaches concerning money laundering, sanctions monitoring and tax evasion. Together these incidents cost the industry $1,569 million https://www.duffandphelps.com/insights/publications/compliance-and-regulatory-consulting/global-enforcement-review-2020

55 An October 2019 study published by the UK's Financial Conduct Authority (FCA) found that machine learning – a branch of artificial intelligence – is most commonly used in areas such as anti-money laundering (AML) and fraud detection https://www.fca.org.uk/publication/research/research-note-on-machine-learning-in-uk-financial-services.pdf

56 The Financial Action Task Force (FATF) published a statement in April 2020 relating to the impact of the pandemic on levels of financial crime. In the statement, the FATF warns that: "Malicious or fraudulent cybercrimes, fundraising for fake charities, and various medical scams targeting innocent victims are likely to increase, with criminals attempting to profit from the pandemic by exploiting people in urgent need of care and the goodwill of the general public and spreading misinformation about COVID-19". https://www.fatf-gafi.org/publications/fatfgeneral/documents/statement-covid-19.html

EXHIBIT 2.1

Spotlight on financial crime

The detailed results provided by financial crime solution vendors provide valuable colour throughout the report. FC vendors were also asked to provide their views on a range of tailored issues relevant to their category (see Figure 2.2).

On the topic of collaboration, the large majority of FC vendors (81.5%) agreed that partnerships were happening in their category, with broad agreement that the problems of AML, CTF and fraud were too complex for one solution to tackle alone. However, results were more mixed when it came to the topic of AI. For example:

- Fewer than half (48.2%) of respondents agreed that concerns over data sharing were the biggest factor holding back the adoption of AI-powered FC solutions
- Little over half (51.9%) felt that utilisation of the latest AI techniques was a key factor in the buyer's decision. Furthermore, almost one-third (29.6%) disagreed with the statement
- And again, on the theme of cooperation, almost two-thirds (61.5%) felt that recent industry collaborations on data sharing would help drive adoption of AI-powered solutions

This theme of collaboration is one that carried through into the broader fight against financial crime. As Figure 2.3 shows, the majority of FC vendors said that cross-industry collaboration was important to the fight against financial crime, of which 40.7% regarded it as 'very important'.

Figure 2.2 Analysis of financial crime vendor perceptions (extract, n=27)

Question: *To what extent do you agree with the following statements about RegTech for AML and Anti-Fraud use cases?*

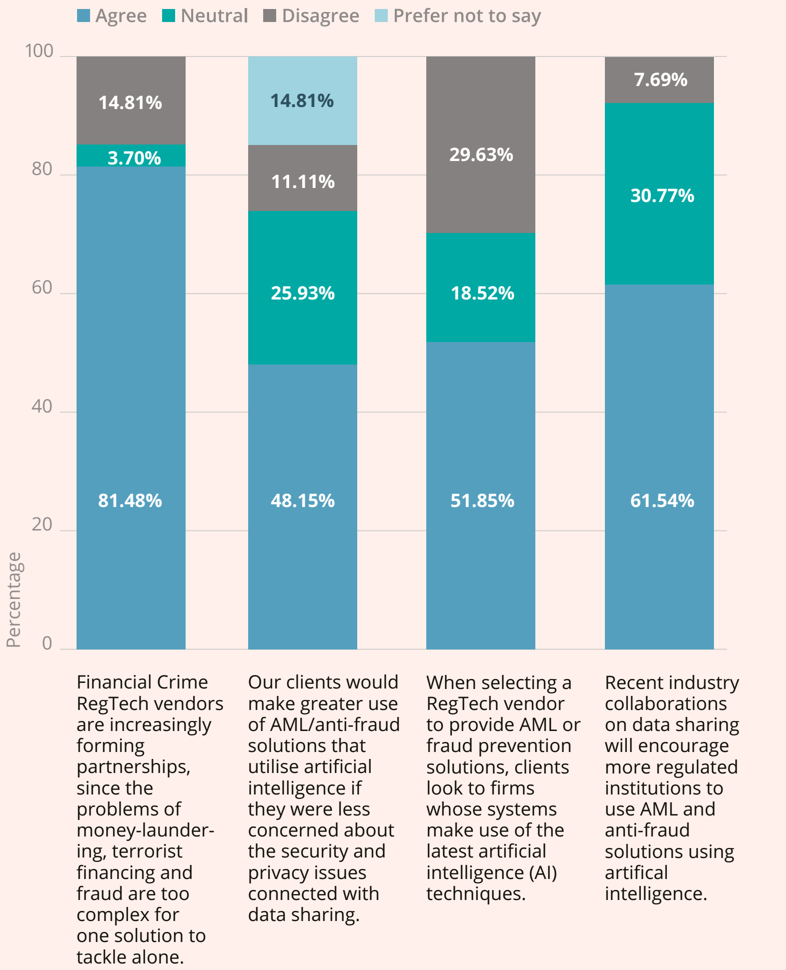
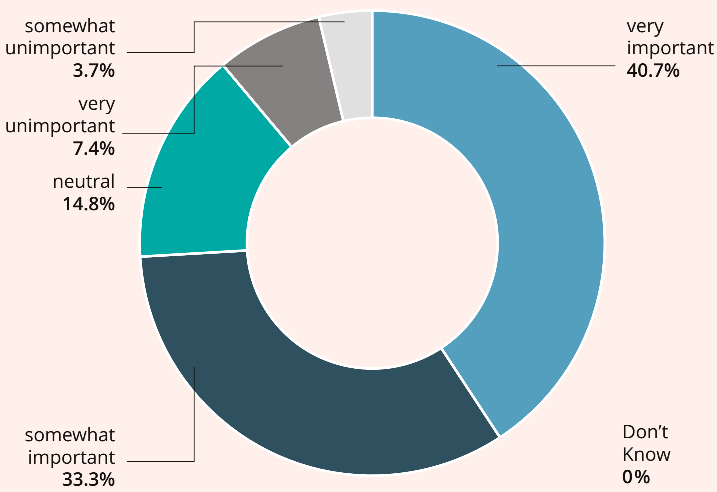


Figure 2.3 FC views on the importance of industry collaborations to fight financial crime (n=27)

Source: (both figures) UK RegTech Vendor Survey 2020 (City of London Corporation/RTA)



CASE STUDY

Spotlight on regulatory and compliance management

As section 2.3.1 and 2.3.2 dealing with sales performance show, RCM vendors experienced (and anticipated) a less buoyant set of sales results in the years 2020 and 2021. The separate category dynamics vary for a number of reasons, and the results of the focused perception question put to RCM vendors (see Figure 2.4) show the challenges they feel they are facing.

For example, almost two-thirds of respondents (65.0%) agreed that it was difficult for institutions to make a compelling business case for RCM investment, while an identical proportion agreed their market was dominated by incumbent vendors. Elsewhere, a little over half of

Figure 2.4 Analysis of RCM vendor perceptions (extract, n=20)

Question: *"To what extent do you agree with the following statements about RegTech for regulation and compliance management?"*

Source: UK RegTech Vendor Survey 2020 (City of London Corporation/RTA

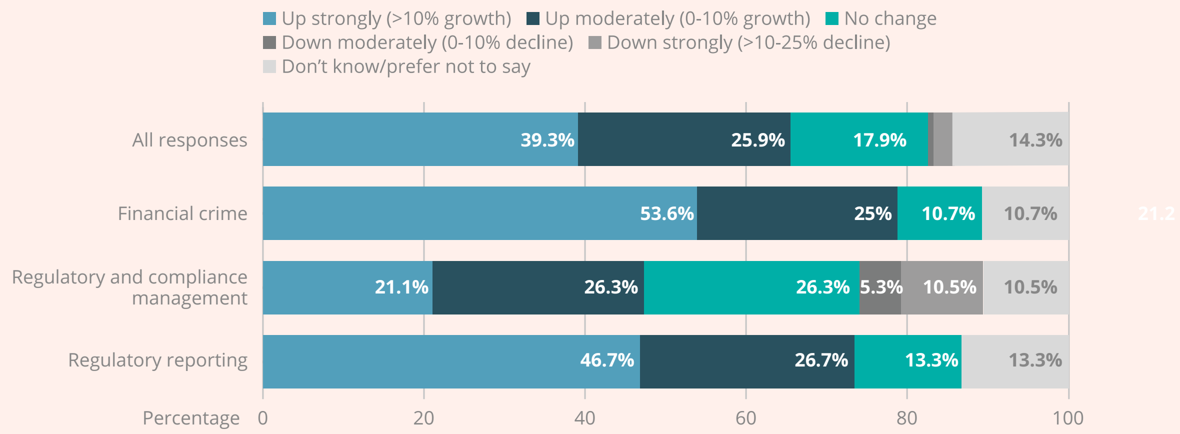
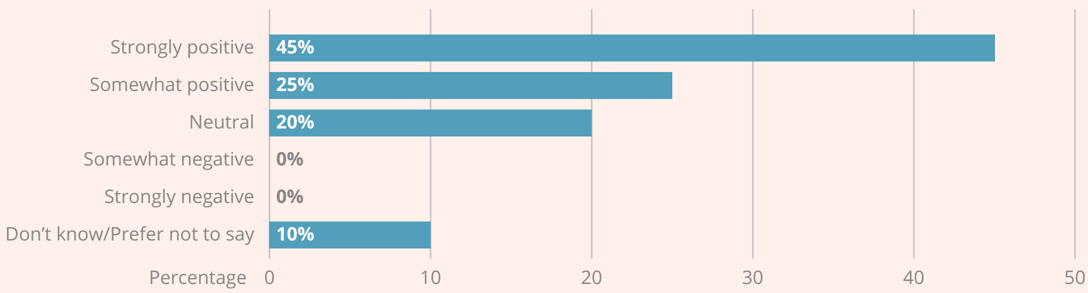


Figure 2.5 RCM views on the impact of providing regulatory rules in a digital format on firms' ability to manage regulation (n=20)

Question: *"What impact do you think providing all regulatory rules in a digital format will have on regulated firms' abilities to manage regulation?"*

Source: UK RegTech Vendor Survey 2020 (City of London Corporation/RTA



RCM respondents (55%) agreed that RCM respondents (55%) agreed that regulated firms were not yet ready to integrate with a digitally-enabled regulatory framework, while 40% agreed the pandemic had stimulated adoption of RCM solutions, in contrast with other categories (see 2.5.4 and 2.5.5).

Despite most RCM respondents viewing FSIs as not yet ready to integrate with a digitally-enabled regulatory framework, a significant majority (70.0%) felt that the introduction of digital rules would help them to manage regulation better. Indeed, almost half (45.0%) would view such a measure as 'strongly positive'.

2.2.3 Views on adoption from regulators & institutions

When asked for their thoughts on UK RegTech adoption, UK-based regulators broadly agreed that the sector had some way to go before achieving a high level of maturity. The vendor ecosystem that exists in the UK right now was described as 'high quality'. Institutions are believed, by-and-large, to be able to select from a wide range of best-in-class compliance solutions to meet their needs. However, and despite the opportunities available, the maturity[57] of RegTech adoption by UK firms is still lacking. Or 'basic' as described by one leading UK supervisory body.

This outlook was also shared by the UK regulated institutions interviewed for this report, all of whom were existing users of RegTech. Adoption levels within this group did not appear to be 'high', since most of the interviewees pointed to 'hotspots' of adoption inside their organisations rather than presenting evidence of deeper, more strategic levels of engagement. For example, solutions for AML and CTF were popular areas of investments with this group, helping them plug immediate gaps in coverage and performance. However, there is considerable work to be done in other, less immediate areas of the compliance stack if high adoption is to ever be achieved.

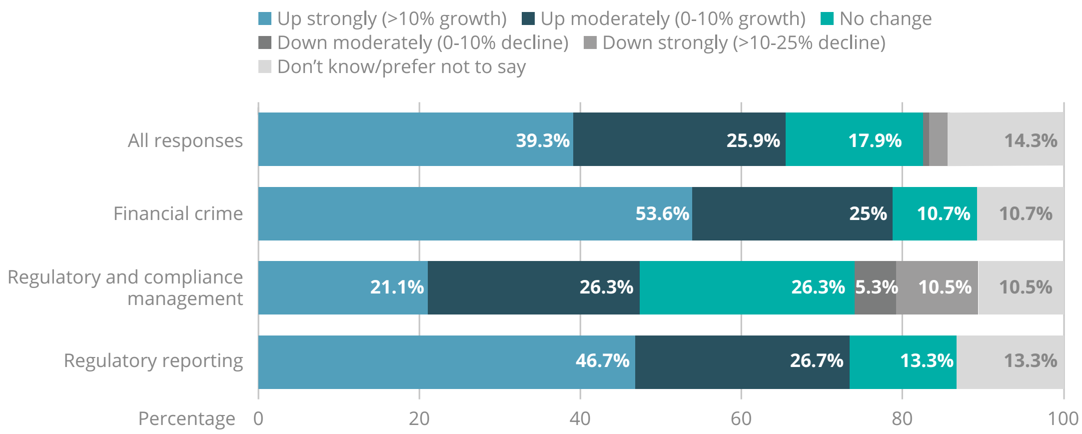
A 'laundry-list' of internal and external barriers that hold back wider RegTech adoption were offered by regulators and regulated firms. These, together with those evidenced in the vendor survey, are explored in more detail below. However, a clear and unambiguous picture of RegTech adoption by UK FSIs is already emerging. There is a real market opportunity to deepen and broaden the growth of the RegTech industry in the UK. There is also a strong, distributed ecosystem of vendors able to help institutions to optimise their infrastructure and achieve better compliance outcomes. However, the relative success of RegTechs, at least in recent times, is closely tied to the categories they occupy and the engagement of buyers. For now, at least, much of that engagement has been concentrated on addressing a range of immediate, urgent needs. As a result, RegTech innovation is largely deployed tactically (i.e. to plug holes) rather than strategically (i.e. to improve overall standards of

57 In this context, the term 'maturity' has two dimensions: (1) the depth of engagement with vendors; and (2) the extent to which RegTech solutions are exploited.

Figure 2.6 RegTech solution sales to financial services clients, 2020 vs 2019 (n=112)

Question: *"How have UK sales of your RegTech solutions in the financial services sector performed in 2020 compared with 2019?"*

Source: UK RegTech Vendor Survey 2020 (City of London Corporation/RTA)



compliance). Encouraging firms to turn the dial towards the latter is a key part of addressing this adoption challenge, with strategic engagement promising a route to sustainable, beneficial long-term commercial relationships.

2.3 UK RegTech sales performance

2.3.1 In-year sales performance, 2019-20

In the context of these many challenges, one might expect the RegTechs surveyed for this study to be pessimistic about the immediate outlook for their businesses. Yet this was not the case, and instead, most respondents expected to chalk up strong UK sales growth in 2020.

As Figure 2.6 (next page) shows, almost two-thirds of vendors surveyed (65.2%) reported a rise in solution sales in 2020. Of these, 39.3% said sales had risen 'strongly' (i.e. growing by more than 10% year-on-year). Conversely, a *very small* proportion of vendors (3.6%) believed their sales had shrunk in 2020, of which 2.7% reported a sharp decline of more than 10% vs. 2019. Elsewhere, 17.0% saw no change year-on-year, while a further 14.3% claimed either they didn't know how 2020 had gone or otherwise wouldn't be drawn.

As with adoption, there are stark contrasts between categories in this theme too, with FC vendors presenting a much more buoyant view of their performance in the past year. An above average 78.6% of respondents in this category experienced growth in 2020, with more than half (53.6%) seeing *strong* growth of more than 10%. RR vendors shared their positive outlook, with 73.4% enjoying growth, and no hint of decline on the cards for vendors in either the RR or FC categories. In contrast, only 47.4% of RCM vendors experienced sales growth last year, of which only 21.1% saw strong growth. More tellingly, 15.8% of RCM vendors saw their sales numbers *fall* in 2020, more than four-times the survey average of 3.6%.

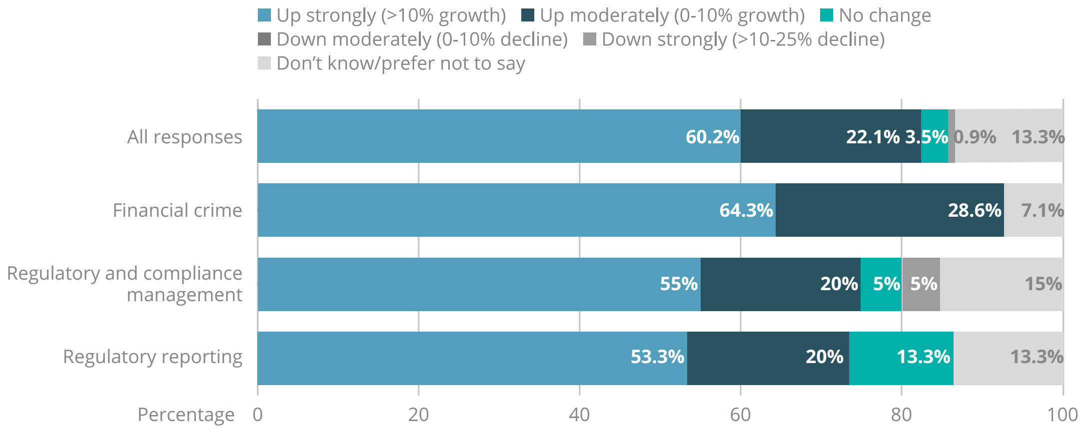
2.3.2 Forecast sales performance, 2020-21

As Figure 2.7 shows, this mixed outlook was also replicated in vendors' 2021 forecasts for UK RegTech sales, albeit with a generally more positive outlook and with somewhat less pronounced differences between categories.

A larger majority of vendors this time (82.3%) expected sales to grow in 2021, with more than half (60.2%) predicting strong sales growth of more than 10% in the year ahead. In contrast, fewer than 1% anticipated a decline in the same period, and again the telltale differences between RegTech categories are evident.

Nearly all (92.9%) of FC vendors predicted growth in 2021, with almost two-thirds (64.3%) expecting that growth to be strong (i.e., greater than 10%). In contrast, 75.0% of RCM vendors predicted the same outcome in 2021, with RR vendors sharing the same more muted outlook, with 73.3% predicting growth. However, like their FC

Figure 2.7 Forecast RegTech solutions sales to financial services clients, 2021 vs 2020 (n=112)
Question: *"How do you expect UK sales of your RegTech solutions in the financial services sector to perform in 2021 compared to 2020?"*
Source: UK RegTech Vendor Survey 2020 (City of London Corporation/RTA)



colleagues, RR vendors did not expect sales to decline either. This contrasts with RCM, where 5% predicted a strong decline.

Overall, these are confident forecasts and, if they are realised, they bode extremely well for the near-term financial health of the UK RegTech sector. With a number of internal and external factors ranged against them, vendors can take nothing for granted. Gaps in compliance coverage being plugged today may not require replugging for some time. And so, the question is how to identify and address the barriers to *long term* UK RegTech adoption so they can be minimised or eliminated? In this way, a truly sustainable future can be charted for UK RegTech, one based on strategic engagement rather than tactical firefighting.

Barriers to adoption

2.3.3 Overview of adoption barriers

To better understand the barriers to UK RegTech adoption, the research team at RegTech Associates drew on their knowledge of RegTech and deep domain expertise to develop a comprehensive list of possible 19 potential barrier factors holding back the adoption of RegTech by UK institutions shown in Exhibit 2.3.

Survey respondents were invited to vote for the factors they felt represented the most pressing and serious barriers to RegTech adoption by UK FS institutions. And, to ensure that nothing critical was missed, a further option was included for vendors to propose their own barriers in a free-text field should they not find one they were looking for in the list provided[58].

EXHIBIT 2.3

Internal and external barriers to the adoption of RegTech

INTERNAL FACTORS
(i.e. factors driven from within buyer institutions themselves)

1. Constraints imposed by legacy technology
2. Difficulties of integrating RegTech solutions into existing technology stacks
3. Difficulties of navigating internal decision making processes
4. Fear of a RegTech project not meeting its objectives
5. Lack of available budget (for RegTech projects)
6. Lack of available staff with the right skills
7. Lack of boardroom support for investment in RegTech
8. Lack of buyer education/awareness around available solutions
9. Long procurement cycles in buying organisations

EXTERNAL FACTORS
(i.e. factors driven by the wider market environment)

10. Competition from other solution providers
11. High cost of available solutions
12. Impact of COVID-19 pandemic on client appetite
13. Lack of a digitally-enabled regulatory framework
14. Lack of adoption of cloud-based solutions
15. Lack of available solutions that meet the needs of buyers
16. Lack of data standards and interoperability
17. Rapid speed of domestic/global regulatory change
18. Reluctance of the regulator to promote RegTech solutions
19. Uncertain UK economic outlook

58 We note that none of the survey respondents exercised this option, selecting only from the list of 19 barrier factors provided.

2.3.4 Barrier analysis

Table 2.1 shows how 101 of the 125 qualifying vendors in our survey voted when presented with a long list of potential barrier factors. In total, the group cast 688 votes (an average of 6.8 votes per vendor).

Since any barrier with more than 7.4%[60] of the total votes cast is attributable to a *majority* of respondents, these results are immediately remarkable for two reasons:

- Firstly, nearly all of the Top 5 barriers selected were voted for by a majority of respondents, indicating a high degree of consensus around the results
- Secondly, all of the Top 5 barriers on the list were *internal* factors relating to the buyers themselves

60 Calculation based on the percentage of votes cast (n=688) equivalent to a majority of the survey sample for this question (n=101). Since the majority of respondents would be 51 of 101, we can say the majority threshold would be 51 ÷ 688 = 7.4%.

Table 2.1 Ranking of barriers to adoption, based on votes cast by survey respondents (n=101)

Question: *"Which of the following factors do you regard as the largest barriers to greater RegTech adoption in the UK?"*

Source: UK RegTech Vendor Survey 2020 (City of London Corporation/RTA)

Rank[59]	Factor	Type	No of votes	% of votes (n=688)	% of sample (n=101)
1	Long procurement cycles in buying organisations	Internal	74	10.8%	73.7%
2	Lack of buyer education/awareness around available solutions	Internal	68	9.9%	67.1%
3	Difficulties of navigating internal decision making processes	Internal	59	8.6%	58.6%
4	Constraints imposed by legacy technology	Internal	51	7.4%	50.1%
5	Lack of available budget within financial institutions	Internal	50	7.2%	49.1%
6	Difficulty in integrating RegTech solutions into existing IT stacks	Internal	47	6.8%	46.3%
7	Lack of boardroom support for investment in RegTech	Internal	40	5.8%	39.7%
8	Reluctance of the regulator to promote RegTech solutions	External	38	5.6%	37.8%
-9-	Lack of data standards and interoperability	External	36	5.3%	35.9%
-9-	Lack of a digitally-enabled regulatory framework	External	36	5.3%	35.9%
11	Fear of a RegTech project not meeting its objectives	Internal	33	4.9%	33.0%
-12-	Lack of available staff with the right skills	Internal	27	3.9%	26.4%
-12-	Impact of COVID-19 pandemic on client appetite	External	27	3.9%	26.4%
-12-	Uncertain UK economic outlook	External	27	3.9%	26.4%
15	Lack of adoption of cloud-based solutions	External	25	3.6%	24.6%
-16-	Competition from other solutions	External	17	2.5%	17.0%
-16-	Rapid speed of domestic/global regulatory change	External	17	2.5%	17.0%
18	High cost of available solutions	External	9	1.3%	8.5%
19	Lack of available solutions that meet the needs of buyers	External	8	1.1%	7.6%

60 Duplicative ranking numbers indicate equal numbers of votes for those options, leading to them being tied in the overall placings.

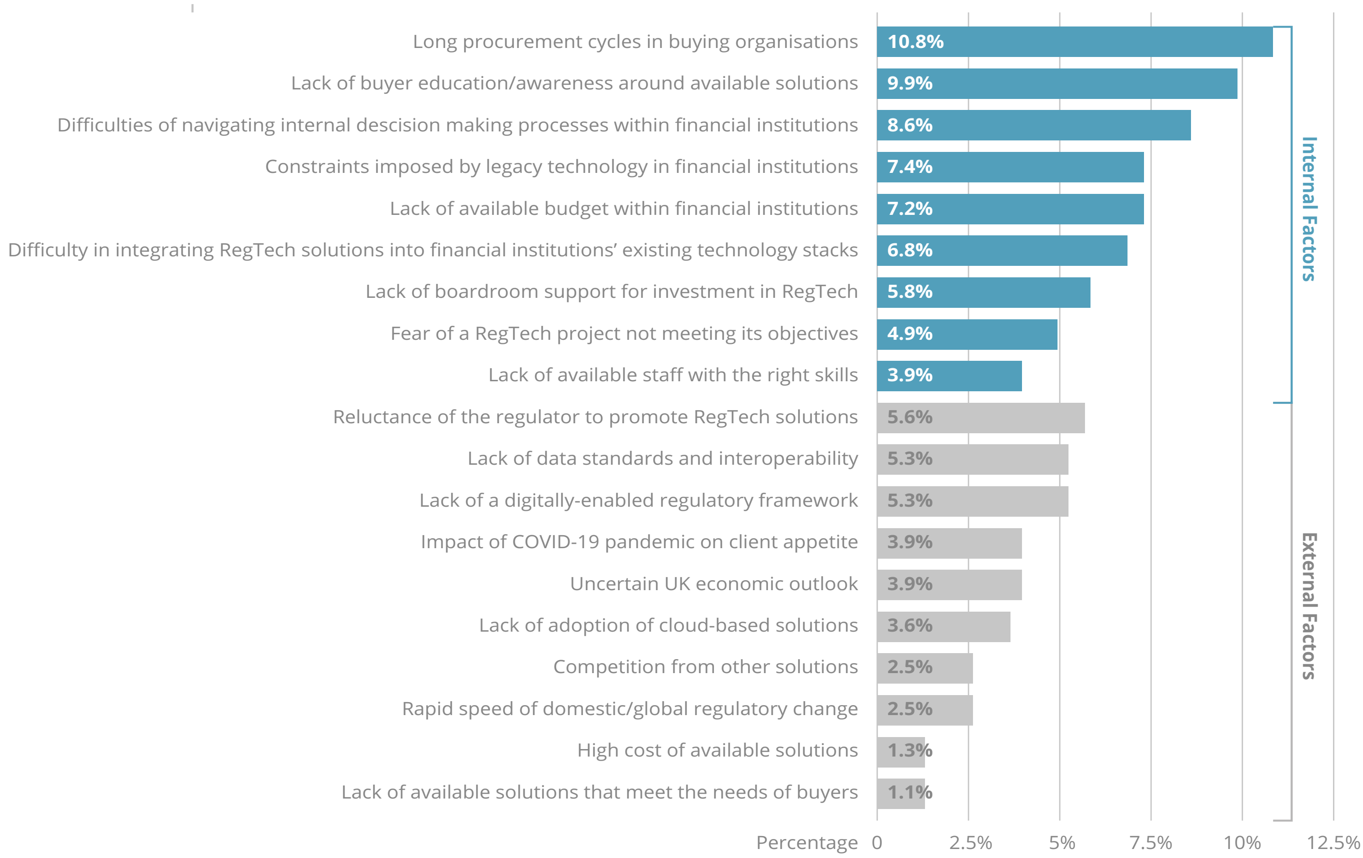
Figure 2.8 shows the split between internal and external factors more clearly, illustrating how the 688 'votes' cast by the respondents were distributed across the 19 options they were given.

It is striking that most vendors who answered this question considered the biggest barriers to RegTech adoption by UK institutions to be native to the institutions themselves. These internal factors pertained to the buyers' processes, resources, capabilities and technology infrastructures. For example, a little lower down the table, more than one-third of respondents (39.7%) pointed to a lack of boardroom support for investment in RegTech, while a slightly smaller proportion (32.7%) called out fear of failure as a major barrier to adoption, a staple challenge with most innovation projects.

Figure 2.8 Largest perceived barriers to RegTech adoption by UK institutions (individual responses = 688

Question: *"Which of the following factors do you regard as the largest barriers to greater RegTech adoption in the UK?"*

Source: UK RegTech Vendor Survey 2020 (City of London Corporation/RTA)



2.3.5 Overview of results in spotlight categories

Taking a moment to review the trends across different RegTech areas, as Figure 2.9 below shows, the trend across the focus categories of FC and RCM is broadly in line with average. However, while neither category strays too far from the mean, there are nevertheless some notable differences, underlining the different pressures exerted upon each.

For example, in the FC solution category an above average proportion of vendors voted in line with the top six barriers to adoption identified in the survey, broadly adhering to the wider pattern of concerns. However, they were almost three-times more likely to raise concerns about the availability of solutions meeting the needs of buyers, and seemingly also felt the heat of competition more fiercely than other categories. Conversely, this group was noticeably less concerned about data standards and interoperability, as well as the speed of regulatory change and the cost of solutions. Interestingly too, none of the 203 FC 'votes' recorded in the survey relate to the pandemic, which was clearly then not regarded as a significant barrier.

Elsewhere, in the RCM solution category, while buyer awareness pipped procurement cycles for the number one spot with vendors in the barrier 'league table', they otherwise broadly followed the herd. Nevertheless, factors such as the lack of buyer awareness of new solutions and lack of boardroom support drew a noticeably larger proportion of votes from RCM respondents. In addition, fear of failure, solution costs and the COVID-19 pandemic were much more pressing concerns for this RegTech category than the average. Interestingly, RCM vendors were also proportionally less concerned about the market's uptake of cloud technologies, data standards and interoperability in a similar way to their FC colleagues.

2.3.6 External barriers to adoption

While internal barriers drew the majority of votes from the vendors surveyed, more than one-third of respondents also called attention to some important external barriers to UK RegTech adoption.

The Top 3 external barriers were:

1. The reluctance of regulators to promote RegTech solutions (37.8% of respondents)
2. The lack of data standards and interoperability (35.9% of respondents)
3. The lack of a digitally-enabled regulatory framework (35.9% of respondents)

These are especially relevant for this study, since external factors will likely respond more effectively to new policy measures. They may also influence internal factors (e.g. clearer standards making the case for RegTech investment clearer for boards). Yet these findings also pose some uncomfortable questions – about the way institutions interact with RegTech suppliers, about how they are geared up to onboard and metabolise innovation, and about the extent to which regulators *feel* they can and should do more to 'bang the drum' for RegTech.

2.3.7 Views of institutions on barriers to adoption

The results of the qualitative interviews provide a useful opportunity to validate vendor perceptions and put some additional colour to them. To begin with, during the course of the interviews, it soon became clear that many of the barriers called out by vendors resonated strongly with institutions. However, as might be expected, focus and intensity were both somewhat different from the perspective of RegTech buyers.

In the area of procurement and buyer awareness, for example, the fact that large, complex organisations have complicated supplier onboarding processes should not be news to vendors. However, this fact is a particular problem for RegTechs, and institutions did acknowledge that inflexibility around who they can or cannot trade with has the potential to choke off access to innovation. Making a case for an innovative new provider was also difficult if the issues at play were not well understood outside a firm's compliance community. Indeed, given the stiff competition for resources at most firms, interviewees representing their compliance and innovation functions explained how they sometimes missed out on funding in favour of 'sexier' revenue-generative activities in the front office. However, this is not just a case of compliance investment having an 'image problem'. There are trust factors to be considered here too.

For example, time and again through interviews the view was offered that *"nobody ever lost their job for hiring X"*, where X was the name of any one of half a dozen large, well-known international technology giants. In short, the trust that comes with a proven track record of delivery and the sense that a vendor has the scale and resources to swiftly resolve any tricky post-implementation issue often tips the balance in their favour. And this was ironic considering the other view voiced in various corners that large providers typically proved not to be *"...as innovative as they seemed to be"* once the implementation was complete. Setting aside the paradox of selecting less innovative vendors to drive more innovation into your business, while this desire to 'play safe' continues to trump the potential benefits of engaging with new and untested solutions from smaller providers, the adoption of RegTech will likely continue to be suppressed.

2.3.8 Views of institutions on budget availability

Elsewhere, on budget, institutions broadly agreed that securing funding could be challenging, particularly at a time of economic uncertainty. Some of the firms interviewed had already seen their discretionary budgets withdrawn, putting much of their RegTech 'experimentation' on hold, at least in the near term. As mentioned already, budget acquisition is a far less challenging problem when the business case concerns revenue creation or the plugging of an immediate gap in compliance coverage.

However, in focusing solely on revenue-related and narrow, tactical considerations, firms conceded they were also surrendering the opportunity to take a more holistic and strategic approach to their compliance technology provision as well as the competitive benefits[61]. Such tactical thinking is a key factor influencing uptake of RegTech tools, and one that cuts across the issues of awareness, education and understanding. Indeed, in some cases a lack of perceived education around compliance technology was felt to be behind a lack of engagement by boards with RegTech projects. In many instances, the business cases for such projects typically hinge on two specific elements:

1. Promised improvements to existing compliance processes (*e.g. more, faster, better...*)

2. Savings of time and money for the institution (*e.g. staff costs, IT costs, enforcement costs...*)

Validating the view that 'revenue rules' when it comes to investment decisions, several interviewees explained the difficulty they faced in trying to prove a negative (*e.g. the fines we WON'T pay, the money we WON'T spend*). One interviewee even expressed the view that requests for RegTech budget were more likely to elicit 'groans' from decision makers than the resource commitments they were angling for.

However, this problem is not solely attributable to RegTech projects' reputation as exercises in cost saving rather than money making. Another key factor driving boards' reticence to invest in compliance projects is an attitude described by one interviewee as *"...if it ain't broke, why fix it?"*. In other words, why divert scarce budget to a project that enhances a process that is already working?

The perceived tolerance of regulators for 'clunkier' methods of compliance (e.g. spreadsheet based reporting) and their hesitation to champion the role of technology leaves more to be done to drive home the value of compliance optimisation. Indeed, by making more noise around the benefits of RegTech, and by raising the bar of expectation by actively championing 'best practice compliance', regulators could help more organisations grasp the nettle and transform outdated (albeit permissible) legacy processes. However, awareness also has a role to play here too. Such apathy towards anything other than urgent compliance change has as much to do with ignorance as it does with vision. And this is fortunate, since this is another area where increasing awareness around the fundamental value proposition of RegTech could certainly help move the needle positively on adoption.

2.3.9 Views of regulators on barriers to adoption

Turning again to the detailed interviews conducted with global regulators, there is good evidence that the education and awareness gaps highlighted above are not restricted to UK RegTechs. Indeed, the fundamentals of articulating the RegTech value proposition – *and even of explaining what RegTech actually is* – are challenges seemingly faced by vendors the world over.

Those interviewed for this report broadly agreed that RegTech adoption in their

61 For example, in 2020 the FCA published its first comparison of UK banks' fraud controls. The intention was to allow consumers to be able to compare how banks protected them against fraud, and "... to make better informed choices about their banking providers". For more details see the FCA website: https://www.fca.org.uk/data/banks-fraud-controls-comparison

jurisdictions had room to grow. Whether described as *"patchy"*, *"low level"* or *"in its infancy"*, regulators from various jurisdictions agreed that RegTech adoption remains predominantly a matter of addressing vulnerabilities and acquiring mandated functionality. This also echoes views voiced in the virtual vendor roundtables as well as interviews with institutions. In short then, this is not a UK-specific challenge.

There was also broad agreement that awareness around RegTech was a major barrier to adoption – not enough is known in the right places about who vendors are, what solutions they offer, and how RegTech itself fits into the wider technology picture for institutions. One regulatory interviewee explained their regret at having publicly described RegTech as a subset of FinTech. Acknowledging that one was not part of the other – *especially since RegTech tools can be utilised in a range of non-financial contexts, including in the oil & gas and telecommunications industries* – they felt this misconflation had added to the broader confusion around RegTech.

Elsewhere too, other interviewees noted that ignorance around RegTech was a risk, one that led institutions to miss out on valuable opportunities to capitalise on innovation and enhance their standards of compliance. Likewise, small, innovative vendors with bright ideas and the latest tools were held back from greater success. Importantly though, this was not an endorsement of RegTech adoption for adoption's sake. Rather, as several interviewees put it *"…we want to see more good RegTech"*, meaning robust solutions that deliver true efficiency and enhance the quality of compliance.

2.3.10 RegTech vendors' understanding of regulators' mandates

Of equal importance, was the view that the lack of awareness that exists in the industry cuts in more than one direction. For example, one regulator complained that some of the RegTechs they had met through their innovation programme had only engaged with them to meet new potential clients. As one interviewee quipped, *"Regulators are not dating agencies"*, and to make the best use of available resources, all parties need to engage in the right way with the opportunities available to them.

Conversely though, it is important that support measures for RegTechs properly reflect their needs. For example, it emerged through the vendor roundtable sessions that several had found it difficult to engage with some of the early regulatory sandboxes. At that time, and geared more towards FinTechs – *who undertake regulated financial services activity themselves* – such sandboxes would often require RegTechs to seek a recommendation from a regulated client to secure their entry. This was often very hard to obtain in practice, and so recent moves by regulators such as the UK's FCA to pilot a new breed of 'digital sandboxes' in partnership with the City of London Corporation are very welcome indeed, helping to address this mismatch in provision.

2.3.11 Views of regulators on board apathy towards RegTech

Elsewhere, regulators also recognised that the apathy seen towards compliance transformation was only reinforced by the intense risk aversion of boards[62]. There are, necessarily, high stakes attached to technology investment in compliance, so the traditional innovation maxim of *"fail fast, fail often"* can understandably be difficult for boards to embrace. However, new solutions must always be run in tandem with existing systems for a considerable time before their efficacy is deemed to be proven. This then renders it more a question of risk appetite than risk management.

Importantly too, some regulators felt their hands were tied when it came to saying and doing more to support RegTech adoption. In some cases, regulators described feeling pressure to remain 'technology neutral', avoiding showing favour to one specific technology or (worse still) one particular vendor. However, this is not necessarily a binary choice for regulators, and there is perhaps room to chart a more balanced course between fear and favour that would allow them to meet their mandated objectives whilst also resetting expectations and allaying fears in the market. There was a clear appetite to take steps in this direction from the regulator interviews, and much that can be learned from other global jurisdictions in this regard.

62 As a matter of record, UK banks have been required to pay out many millions of pounds in connection with IT failures, both in connection with legacy systems collapses as well as problematic transformation projects. For example, in November 2014 RBS was fined £42 million by the UK Financial Conduct Authority (FCA) for a well publicised systems failure that resulted in millions of retail customers being out of their accounts https://www.fca.org.uk/news/press-releases/fca-fines-rbs-natwest-and-ulster-bank-ltd-%C2%A342-million-it-failures

One Asian regulator, for example, has taken an active role in supporting the engagement of financial institutions with RegTech. This included developing close links with their local FinTech association to coordinate activity and run events, as well as establishing grants for institutions to help them develop the infrastructure needed to adopt new technologies. Meanwhile, another in North America has used competitions to promote and reward new innovation, as well as hosting a virtual roadshow that connects innovators with institutions under their own banner.

Equally, there is valuable precedent for a more interventionist stance from regulators closer to home. One institutional interviewee, for example, recalled being encouraged by the UK regulator to look at enhanced trade surveillance technology ahead of the implementation of the European Market Abuse Directive (MAD). So, it can be done. However, despite the clear desire to do more, the line between what they should and should not be doing to support RegTech is not settled, contributing a further barrier to its adoption. Clarity is needed.

2.3.12 Other barriers arising from the research

Urgent action is needed to close the awareness gap that exists around RegTech and to address the other barriers to adoption identified by this report. These include some additional barriers not called out directly by vendors, but which cropped up in interviews with regulators and institutions.

Importantly, there are a number of vendor-focused factors that present as big a challenge to the success of the sector as those barriers identified by the vendors themselves.
These include:

- **Willingness to collaborate**: Several institutions noted the lack of traction they got from RegTechs – *particularly the larger players* – who they found unwilling at times to grapple with their unique requirements. One institution discussed being rebuffed by a vendor when they asked to provide input into their product roadmap. The intention had been to help the vendor better understand the fast-changing needs of their client – *a rapidly growing European neobank* – to increase both the value of the system and the likelihood of a renewal. The bank had also found it consistently difficult to get post-implementation tweaks made to critical systems, which was a major source of frustration, and one that could impact future vendor selection.
- **Scalability & maturity**: Ironically, smaller 'start-up'-style vendors were often held to be much more responsive to this sort of approach. However, as already noted, the ability institutions have to engage with smaller RegTech players can diminish as their size, footprint and complexity grow. All of which leaves institutions caught on the horns of a scale dilemma. Partly, this is the function of what was described by one institution as 'naivety' on the part of vendors themselves. In several cases, firms described having been presented with innovative new products designed for specific jurisdictions, only to find they could not satisfy a predictably much broader set of needs. For example, a trade surveillance solution unable to manage multi-language inputs that would be of little use to a large institution with trading desks on all continents. In such cases, institutions would like vendors to think more about what they need rather than simply attempt to adapt a brilliant idea that clearly requires more time in development. However, this is of course not purely a result of naivety. Rather, these results indicate that vendors – *especially the 20.5% surveyed for this report with fewer than 5 customers* – need urgent help to scale.
- **Interoperability**: Another key challenge was interoperability. While 43.6% of vendors acknowledged that integrating with client IT was a barrier to adoption, there was a clear sense from institutions that vendors could do much more to work with their clients to ameliorate this. For example, many firms are transitioning away from monolithic 'on premise' technologies in favour of more flexible, cloud-based enterprise platforms for compliance IT. In such cases, the problems of integration are rarely insurmountable, but institutions felt they often had to wait too long for patches and updates to be released, even taking matters into their own hands where needed.
- **The reliance on 'homebrew' development**: One UK financial institution, for example, wearily outlined their '80/20' approach to RegTech implementations. In their view, the last 20% of any compliance technology project signed off by management would inevitably require their in-house team of programmers and developers to step in

and effectively 'invent the last mile of road' to complete the project. Given the scarcity and cost of developer talent in this area, the 80/20 route is clearly not the ideal approach to RegTech adoption. However, as several institutions - across banking, insurance and asset management - explained, to varying degrees a 'homebrew' development approach was entirely necessary and appropriate when vendors failed to engage with them. This view also extended to the functionality and flexibility of systems. In some cases firms reported having to develop their own tools, since those available in the market were unable to cater to their needs. For overall levels of compliance, it is obviously better for financial institutions to be innovating internally than not at all.

- **Trusting smaller vendors**: Elsewhere, concerns were voiced over the resilience and long-term future of smaller firms. Knowing that the vendor selected for a big ticket compliance technology project will likely be trading for the medium- and long-term is important to buyers. This is particularly true in cases where firms do not review their contracts for two- or three-years at a time. No compliance team wants to find itself having to renegotiate with a new owner or be faced with an unexpected 'cliff edge' in service provision. Added to this is the natural proclivity of institutions to favour firms who can be relied on in a crisis. Being able to show that you can get 'boots on the ground' if an integration goes badly is a differentiating factor for risk-averse buyers, and gives larger technology houses a natural advantage.

Consequently, an opportunity exists to do more, both to support the long term growth and sustainability of innovative RegTechs, and to challenge the low technology risk appetite of institutions holding back compliance innovation. Moreover, there is a clear need to increase awareness across all dimensions of the immediate RegTech stakeholder ecosystem *– the vendors, the buyers and the regulators –* to ensure closer alignment between them, greater confidence to adopt new compliance technologies and better outcomes for all parties.

2.4 The impact of COVID-19

2.4.1 Impact of the pandemic on UK RegTech adoption

At the beginning of 2020, while firms and vendors were busy grappling with the barriers to adoption highlighted in the previous section, the COVID-19 pandemic arrived. It brought incredible challenges and hardships to communities in all corners of the globe. Besides the dreadful health toll the virus has taken, it has also structurally changed – at least for the short term – the ways in which people live their lives. One outcome of this global rictus has been a virtual stampede into online environments to work, to socialise, to shop, and to access financial services. And, as has already been touched on, the resulting explosion of online interactions has massively amplified the risks for institutions and the customers they serve.

Against this backdrop, COVID-19 has created a 'perfect storm' of challenges for financial firms. The financial crime investigators employed by institutions have had to adapt to working and collaborating on cases virtually. At the same time fraud incidents have spiked, driven by the exodus of new users onto digital channels, which have opened up new avenues of attack for criminals. Hence, if your business is to provide solutions that help firms to identify and deal with incidents faster and better, the pandemic could be said to have significantly boosted your fortunes.

2.4.2 Impact of the pandemic on different RegTech segments

However, financial crime solution providers are not the only potential beneficiaries of a 'pandemic dividend'. Indeed, interviewees at institutions and regulators both described a rapid acceleration of technology investment in financial services. As the demands of newly digital customers changed the game, institutions frantically ramped up moves to complete critical digital transformation projects.

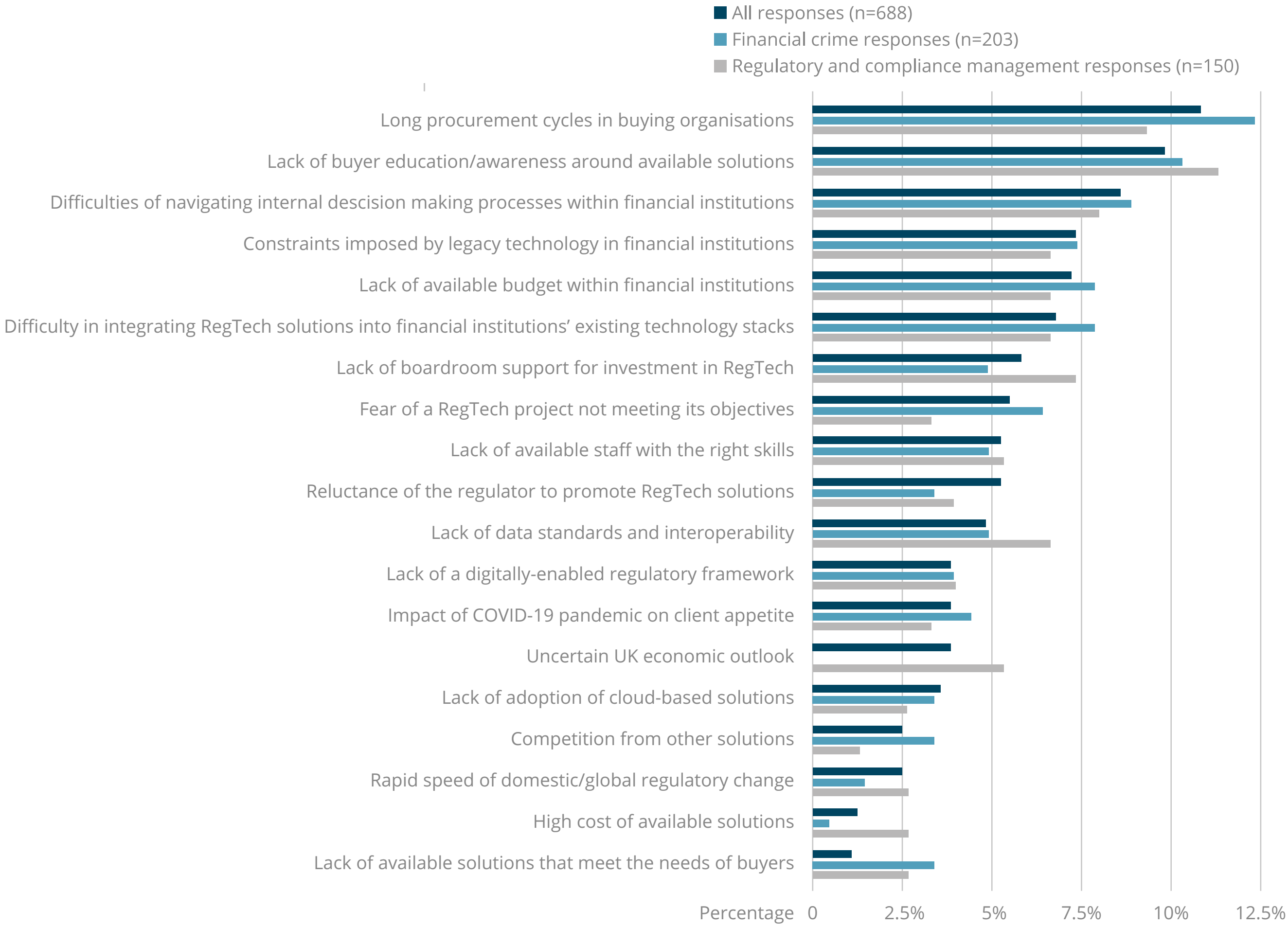
Also, as noted earlier in the report, some Regtech categories, such as FC and RR, seemingly fared better than others. However, as the broadly optimistic outlook of UK RegTechs shows, most (if not all) boats have lifted on this rising, albeit temporary tide. Nevertheless, other factors may also have driven the rising fortunes of these firms, and to get a clear picture of the experience of UK RegTechs through the pandemic, several

Figure 2.9 Largest perceived barriers to RegTech adoption – comparison between individual responses from the total sample with those from FC and RCM category respondents

Question: *"Which of the following factors do you regard as the largest barriers to greater RegTech adoption in the UK?"*

Sample Sizes: All Responses, n=688 | Financial Crime, n=203 | Regulatory and Compliance Management, n=150

Source: UK RegTech Vendor Survey 2020 (City of London Corporation/RTA)



specific questions were put to respondents through the survey.

As seen in Figure 2.9, only one-quarter (26.4%) of respondents rated COVID-19 as a major barrier to adoption, putting it in joint 12th place with access to skilled staff and the uncertain UK economic outlook. Hence, the pandemic would seem not to be a source of concern for the majority of UK RegTechs, at least when it comes to adoption. But, as Figure 2.10 (next page) clearly shows, a large majority of those surveyed still agree that RegTechs have a crucial role to play in helping financial firms to navigate the challenges presented by COVID-19. This view was replicated across the key focus categories of the report – *FC and RCM* – 90.6% and 85.1% of whom respectively agreed with that statement presented in the question. Also, notably, *all* of the RR vendors who answered the question agreed.

Digging into the results by category, RCM vendors were cooler still on this notion, with 68.2% signalling agreement and almost one-fifth (18.1%) standing opposed. In contrast though, the more bullish voices of FC and RR vendors spoke up more strongly, with 81.3% and 77.0% respectively in agreement. Hence, it seems more 'successful' vendor categories (i.e. those most likely to forecast increased sales in 2020 and 2021) are more likely to also regard the pandemic as an inflexion point for their sector.

Figure 2.10 Do RegTechs have an important role to play in helping organisations navigate the challenges presented by the COVID-19 pandemic?

Question: *"To what extent do you agree with the following statements about RegTech: "RegTech solutions have an important role to play in helping regulated firms, and the bodies that supervise them, navigate the challenges presented by the COVID-19 pandemic"*

Sample Sizes: All Responses, n=121 | Financial Crime, n=32 | Regulatory and Compliance Management, n=22 | Regulatory Reporting, n=13

Source: UK RegTech Vendor Survey 2020 (City of London Corporation/RTA)

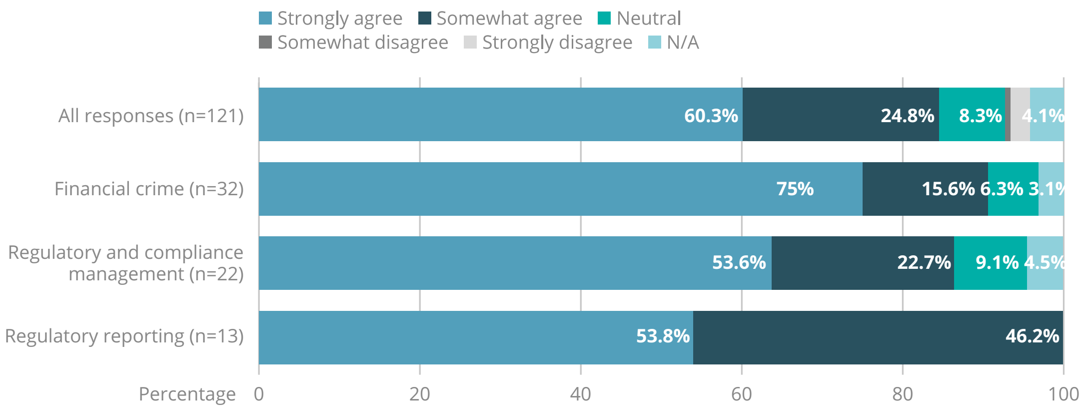
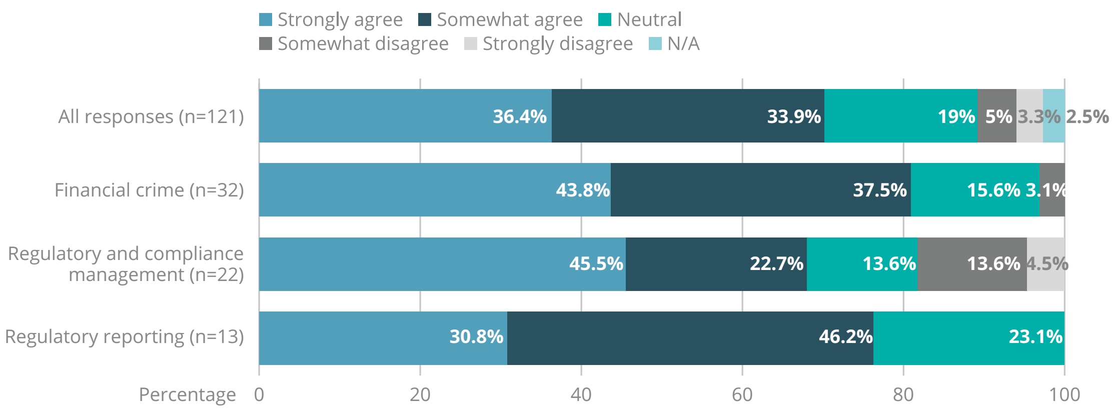


Figure 2.11 Does the pandemic represent a 'watershed' moment for RegTechs?

Question: *"To what extent do you agree with the following statements about RegTech: "The regulatory, technological and behavioural shifts arising from the COVID-19 pandemic represent a 'watershed moment' for the RegTech ecosystem"*

Source: UK RegTech Vendor Survey 2020 (City of London Corporation/RTA)



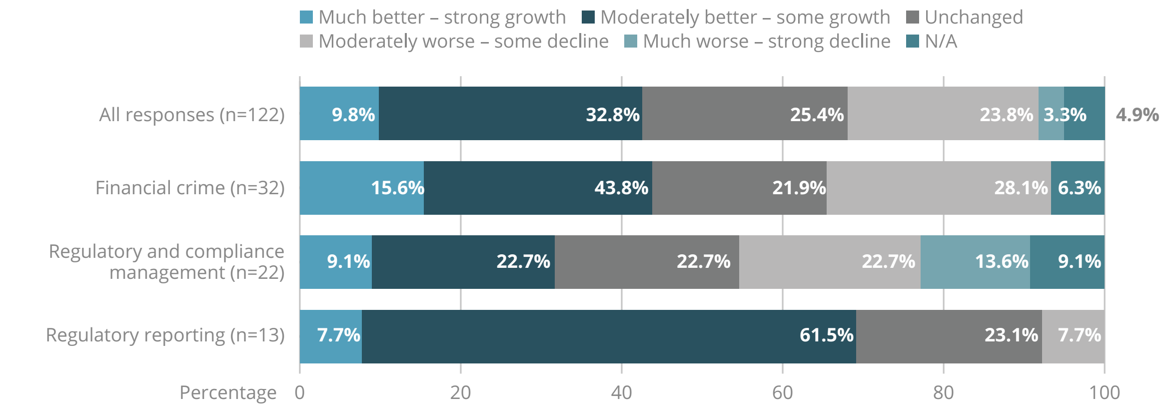
2.4.3 The pandemic as a 'watershed moment' for UK RegTech

Elsewhere, vendors were asked whether the pandemic represented a 'watershed moment' for their industry. While most went along with the idea, their agreement was noticeably less resounding this time. Indeed, while more than two-thirds of respondents (70.3%) 'strongly' or 'somewhat' agreed with the statement, one-in-five (19.0%) neither agreed nor disagreed, and 8.3% dissented.

Figure 2.12 How has the onset of the COVID-19 pandemic impacted your UK business?

Question: *"How has the onset of the COVID-19 pandemic impacted your UK business?"*

Source: UK RegTech Vendor Survey 2020 (City of London Corporation/RTA)



2.4.4 Vendor views on the direct impact of COVID-19 on their businesses

So far so good it seems. However, the view towards COVID-19 takes a more sober turn when respondents are asked *specifically* to measure its impact on their businesses. As mentioned, the pandemic has wrought global havoc, and for vendors and other enterprises it caused the dislocation of teams and presented additional challenges to those developing new products and solutions. Figure 2.12 shows the results of a question focusing on the impact of COVID-19 on business growth, and from this standpoint the picture is perhaps best described as 'mixed'.

As Figure 2.12 shows, for almost half of vendors surveyed (42.6%) COVID-19 has been a positive. In particular, this was the case for almost two-thirds (69.2%) of the RR respondents who answered this question, who reported 'strong' or 'moderate' business growth *directly* as a result of the pandemic. This result was far ahead of vendors in the categories of FC (43.9%) and RCM (31.8%). Meanwhile, a steady one-quarter of respondents across categories reported feeling no change at all to their business as a result of the pandemic (ranging from 22.7% in RCM, to the overall average of 25.4%). However, for a further one-quarter of vendors (27.1%) the pandemic has specifically created a drag on business growth. This figure rises for FC (28.1%) and RCM vendors (36.3%). In contrast, only 7.7% of RR vendors reported a negative impact on growth, illustrating the relative exposure of each group to the ravages of the pandemic.

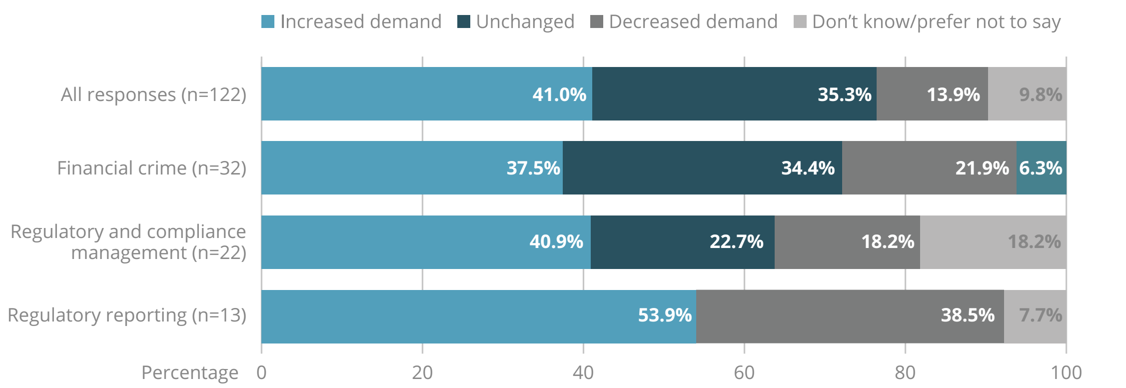
2.4.5 Vendor views on the impact of COVID-19 on RegTech demand in general

This more muted view of COVID's effect can also be seen when vendors were asked to think about the specific impact of the pandemic on demand for UK RegTech. As Figure 2.13 shows,

Figure 2.13 How has COVID-19 impacted UK demand for RegTech in general?

Question: *"How do you think the COVID-19 pandemic has impacted UK demand for RegTech solutions in general?"*

Source: UK RegTech Vendor Survey 2020 (City of London Corporation/RTA)



neither the strong growth reported by vendors last year, the slim regard paid to the pandemic as a barrier to adoption, nor the important role RegTechs feel they have in helping institutions to adapt to the virus translated readily into a view of COVID as a demand driver. Indeed, only two-fifths of vendors (41.0%) regard COVID-19 as having boosted demand for UK RegTech. Mirroring the results of the previous question, a significant minority of vendors (35.3%) instead regard its impact to have been neutral, while the remaining one-quarter (23.7%) either believe it has decreased demand, or were either unable or unwilling to quantify.

Interestingly, FC vendors – who arguably have benefited more from the impact of COVID-19 than other categories – were the least likely to regard COVID as a UK demand booster. Only 37.5% of FC respondents took that view, fewer than in RR (53.9%) and, remarkably, fewer than RCM too (40.9%). Similarly, FC solution providers were more likely to view COVID as a drag on demand (21.9%, vs. an average of 13.9%) than RCM vendors (18.2%) and those in the RR space (only 7.7%).

This interesting set of contrasting results seems, at first glance, to reflect some form of cognitive dissonance. It is curious, for example, that a majority of firms report high growth during the pandemic period, but only a minority consider COVID-19 to be a demand driver.

In reality, this blend of findings perhaps does more to reflect the delicacy vendors feel at trumpeting the benefits of a global scourge like COVID-19, than it does any conflict within the sector. And, despite some unexpected results, the underlying trend is clear. During the pandemic, many RegTechs have flourished, stepping up to help their clients manage the challenges the virus has wrought on UK institutions. COVID is also, for the majority of firms, a watershed moment, but one that may well be short-lived as the financial services industry adapts to the new environment.

Table 2.2 Factors with the greatest potential to drive future UK RegTech growth

Question: *"Which of the following factors do you believe have the greatest potential to drive future growth in the UK RegTech sector?"*

Source: UK RegTech Vendor Survey 2020 (City of London Corporation/RTA)

Rank	Factor	No of votes	% of votes (n=592)	% of sample (n=121)
1	Supervisors encouraging regulated firms to increase their adoption of RegTech as part of the supervisory process	83	14.0%	68.6%
2	Better education around RegTech for boards of regulated institutions	75	12.7%	62.0%
3	Increased numbers of fines and enforcement actions from regulators / supervisors	66	11.2%	54.6%
4	Greater adoption of cloud technology	57	9.6%	47.1%
5	Increasing complexity of UK regulatory landscape in financial services	57	9.6%	47.1%
6	Increasing pressure on financial services institutions to cut costs	48	8.1%	39.7%
7	Amendments to prudential regulation to encourage greater investment in software assets	48	8.1%	39.7%
8	Creation of more safe-spaces to experiment, iterate, test and scale new RegTech solutions	48	8.1%	39.7%
9	Increase availability of capital to fund growth	40	6.8%	33.1%
10	Increase availability of government support to fund innovation	38	6.4%	31.4%
11	Impact of the COVID-19 pandemic on regulators and the firms they regulate	32	5.4%	26.5%

2.5 RegTech demand drivers

2.5.1 Factors with the greatest potential to drive future UK RegTech growth

Regardless of their sensitivities, for a number of vendors the recent months have seen their businesses, and demand for their solutions, grow. However, vendors are also realistic about the long term outlook for this 'COVID wave'. Indeed, as Table 2.2 shows clearly, COVID-19 ranks last on a long list of factors that vendors believe could help propel their future growth.

While only one-quarter of respondents regarded the future impact of COVID-19 on regulators and regulated firms to be a driver of future growth, almost two-thirds put their faith in regulators to do more to support the sector (68.6%) and better board-level education around RegTech (62.0%).

In the next section, building on these detailed results, the report distils these findings into a number of challenges to the future growth of the UK RegTech sector, and recommendations for UK Government and policymakers. To ensure UK RegTechs can continue to pursue their shared goal – *to help regulated firms satisfy their regulatory obligations* – policymakers and other crucial stakeholders in the wider RegTech ecosystem must act.

Chapter 3

Ten key challenges for UK RegTech

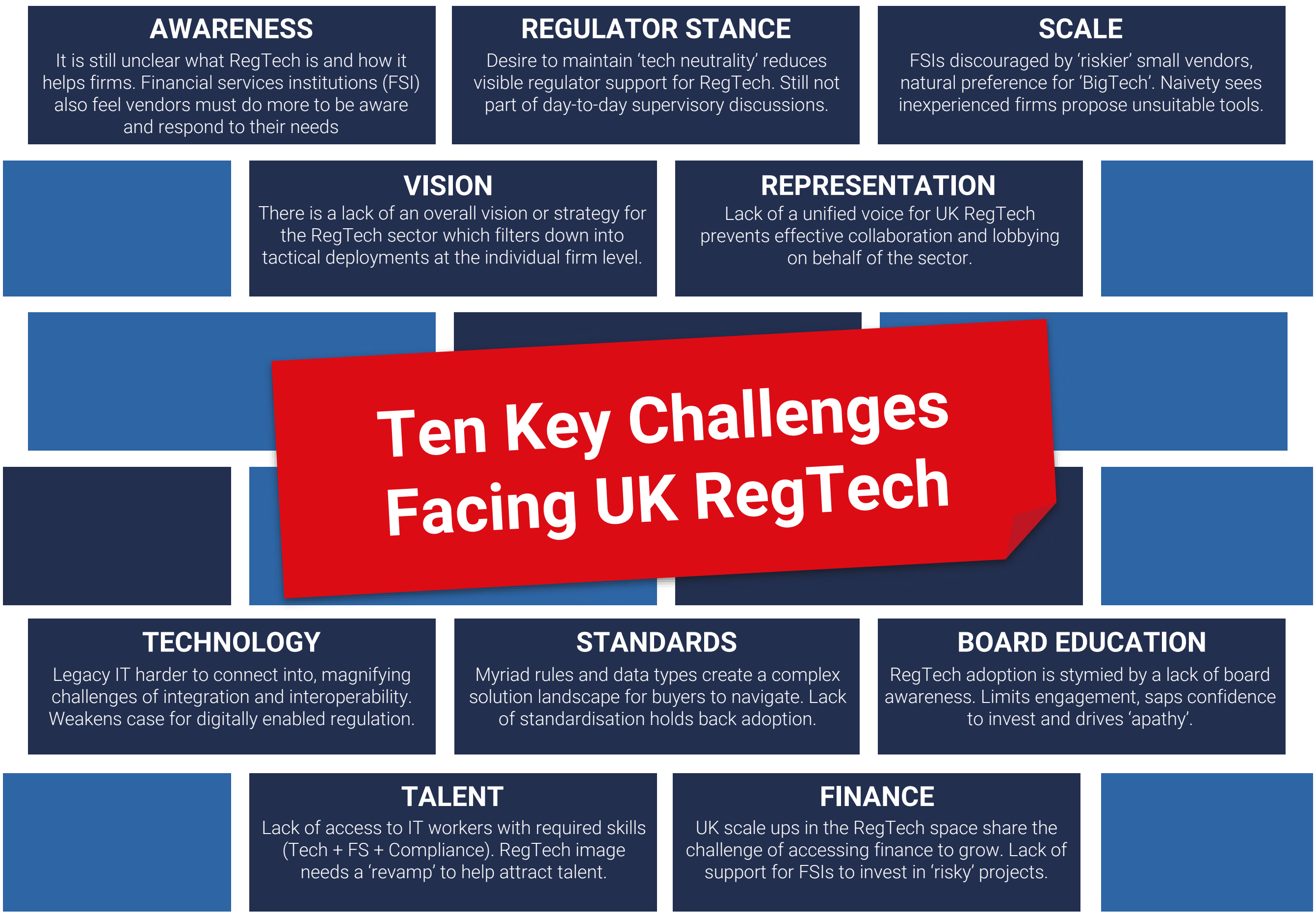
The research reveals the existence of multiple challenges for UK RegTechs in multiple dimensions. However, this cocktail of different issues can be distilled down to ten independent yet overlapping, barriers to UK RegTech adoption, all of which demand urgent attention.

As Exhibit 3.1 illustrates, the research also points to this being a holistic web of self-reinforcing barriers whose interplay strengthens each one depending on the context. Alone, each represents a challenge for UK RegTechs to overcome. However, in concert they interact and present a much more formidable obstacle holding back the deeper adoption of RegTech tools.

This section of the report focuses on refining and defining these challenges in greater detail and exploring the remedies required to achieve a sustainable future for UK RegTech.

Exhibit 3.1 A wall of issues holding back UK RegTech Adoption

Source: RegTech Associates analysis of combined project fieldwork



3.1 Addressing the challenges faced by UK RegTech

The refined list of component 'bricks' derived from the research must be fully understood to be addressed and overcome.

3.1.1 Awareness

The first of these is **AWARENESS**. The research shows that RegTech is a sector with an awareness problem. This extends to fundamentals like the definition of RegTech itself, as well as how it supports firms to achieve better compliance, and why that is an attractive goal for regulated firms to target. RegTech is not FinTech, but it is technology that can and should be used by financial services firms to enhance their compliance standards. And yet the lack of awareness around RegTech has generated a significant drag on adoption. In the absence of a central directory of vendors, and any form of accreditation, it is tougher for firms to find the best vendors to work with.

In most circumstances' buyers rely on peer recommendations and conference attendances as their primary means of scouting out new solution partners. This activity is therefore profoundly inefficient and unsystematic. However, awareness cuts both ways, and institutions want to see greater commercial awareness from vendors too. Interviewees reported too little understanding and consideration for their complex individual requirements. And so, raising awareness of buyers' needs and showing greater willingness to understand and respond to them will also help to stimulate future adoption. Likewise, it will also serve to eliminate the need for expensive internal development work by buyers, many of whom feel obligated to build the last mile of RegTech projects themselves.

3.1.2 Regulator stance

In the survey, 68.6% of vendors called on supervisors to encourage regulated firms to increase their adoption of RegTech as part of the supervisory process. The **REGULATOR STANCE** ranked first on a list of 11 potential remedies put to respondents for their consideration. For their part, UK regulators feel they have a tightrope to walk. While not anti-tech, they are somewhat hesitant to be seen to champion any specific type of technology such as cloud. Indeed, as long as compliance standards are being maintained, the methods regulated firms use to comply are of no immediate concern to them. However, regulators do acknowledge that giving clearer signals to the market around technology – *e.g. what 'good' RegTech looks like, how they approach compliance innovation* – would help firms to be more confident about their own technology investments. In addition, as with the setting of standards, it would also go some way towards addressing the *"if it ain't broke, why fix it?"* conundrum facing resource-strapped compliance teams. Elsewhere, the majority of regulated firms interviewed for this study reported that technology issues were either a small or absent part of their dialogue with regulators. In large part then, addressing this barrier will require regulators to make RegTech a much more visible and frequent topic of discussion during their interactions with regulated firms, cementing its place on the regulatory agenda.

3.1.3 Scalability

SCALABILITY presents a range of challenges for UK RegTechs. Smaller vendors with fewer than 50 full-time employees, who made up 43.8% of the survey sample, can lose out on contracts to bigger firms, even though institutions admit they are sometimes 'less innovative' than their more diminutive peers. To satisfy long-established procurement processes, there is pressure to demonstrate a long track record of delivery, to guarantee longevity, and to give comfort to buyers that future problems will be swiftly remediated. For smaller firms unable to provide such proofs, the route they navigate from proposal to implementation will be far more perilous. Vendors also need enough scale to be able to adapt niche solutions for larger clients (e.g., providing multi-language support for a proprietary trader surveillance system to meet the needs of a multinational investment bank). This requires a deeper awareness of larger FSI's more complex needs as well as R&D funding to do so. However, if vendors are enabled to sell to larger, more complex buyers, closing the awareness gaps that can open as firms scale rapidly, the list of potential suppliers that large institutions can tap will grow, and so too will adoption.

STUDY

Enterprise Ireland – funding for scale

Enterprise Ireland (EI) is a public agency responsible for the development and growth of Irish enterprises in world markets. The organisation offers a comprehensive and multifaceted approach to stimulating innovation. EI works with entrepreneurs and businesspeople across the full business development spectrum, from early-stage entrepreneurs, to established business owners and Irish multinational companies to deliver sustainable growth. Additionally, EI uses funding mechanisms to bolster domestic research capabilities and facilitate collaborative links between enterprise and the research community.

EI offers fiscal and non-pecuniary support for entrepreneurs and start-ups. The organisation's overarching High Potential Start-up Unit (HSPU) dedicates a large portion of capital to Deep Tech through The Competitive Start Fund (CSF). While the CSF focuses on all sectors, it strongly[63] encourages applications from early-stage companies active in FinTech as well as start-ups providing technology driven solutions within the financial services sector.

In addition, EI's New Frontiers Entrepreneur Development Programme provides further support for these companies by combining a range of benefits including mentoring, incubation space and a 1-5,000-euro scholarship payment to equip founders with the skills and contacts needed to make best use of their financial capital and successfully start and grow a company.

Since 2016, EI has invested over €110m in over 660 start-ups with circa 60% being in the technology or software field and over 10% in FinTech (which includes RegTech solutions). EI have also recently injected €10 million into Irish venture capital firm MiddleGame Ventures to create a pool of funding of €20 million which is to be directed solely toward investing in the Irish FinTech and RegTech industry.

3.1.4 Vision

Innovation can be a fraught process, and **VISION** is required to make brave choices. To achieve the full transformative power of RegTech, all actors in the ecosystem need to have a clear plan for embracing RegTech's potential. Currently, as outlined in several interviews, few financial institutions currently feel incentivised to take a visionary approach to compliance. Beyond the funding element of innovation is the fear of failure, which in part is perpetuated by a lack of clear direction from UK regulators around how they think about technology risk. Compliance teams need the confidence to take transformative leaps. This means confidence in the way the regulator will treat any future compliance-related challenges that arise through innovation. It also means building confidence in the abilities of smaller vendors to provide valuable compliance solutions, levelling a playing field that currently favours big, established suppliers. And, of course, it also means finding the confidence to challenge the view that what *"ain't broke"* may still require updating and enhancement. By addressing these challenges, regulated firms will be freer to act, to select the vendors that best meet their needs, and improve their chances of successfully tapping required resources.

3.1.5 Representation

Finally, UK RegTechs also lack the means to speak to the challenges it faces with a single, consistent voice. Better **REPRESENTATION** is needed. In other jurisdictions, RegTechs benefit from their memberships of well organised associations that represent their interests in the market. Indeed, strong industry representation can help to address many of the challenges outlined above, by raising awareness, driving best practices, lobbying regulators and policymakers for greater support and orchestrating the enhanced cooperation needed between stakeholders across the ecosystem to boost adoption. In the absence of such an organisation, the challenges outlined here will continue to persist.

63 See https://www.enterprise-ireland.com/en/funding-supports/ (Accessed January 2021)
https://www.irishexaminer.com/business/arid-31006315.html (Accessed January 2021)

STUDY

RegTech Association in Australia – what can be achieved for the industry [64]

The Australian RegTech Association was founded in 2017 by a handful of Australian RegTech start-ups with the aim to build an ecosystem of high performing, ethical and compliant businesses through RegTech innovation and investment. The association brings together government, regulators, regulated entities, professional services and founder led RegTech companies to foster collaboration between the parties. The association also works to promote the RegTech industry as widely as possible, resulting in an increased uptake of RegTech proof of concepts and deployed RegTech solutions across Australia. The Australian RegTech Association has experienced steady growth since its inception, now with over 130 organisational members (over 85 RegTechs and the rest made up from global corporations and major banks).

Funding

The RegTech Association relies on sponsorship to host events and perform research. Sponsorship comes from both the public and private sector, from parties who see value in the use of RegTech and wish to contribute to its global expansion. As an example, the New South Wales government injected $30K capital to support their ACCELERATERegTech event in 2019. The RegTech Association also invites private vendors to sponsor events in return for opportunities to give product demos and be a part of panel discussions, as well as being promoted by the RegTech association on social media and other channels.

Initiatives

The Australian RegTech association hosts a number of events throughout the year to increase RegTech exposure. The ACCELERATERegTech events are a series of competitions whereby winners can receive recognition for the strength of their solution and its market appetite, as well as their business model and the potential scalability of the solution. Through these events, The Australian RegTech Association are able to promote 'good' RegTech and give vendors an unmatched opportunity to gain industry exposure. Audience attendees in the past have included the likes of AUSTRADE, American Express, PwC and the Bank of Queensland. The demand for these programs has grown by over 7 times since 2019.

Additionally, the Australian RegTech Association meets monthly with UK and Australian regulators and global partners to aid collaboration and share best practice and education of RegTech. Since 2017 the association has run events in Singapore and London to stimulate cross-border opportunities for RegTech companies and in 2020 alone they accommodated 5000 people from 40+ countries at online education programs and RegTech showcases.

64 See https://www.regtech.org.au/ (Accessed January 2021) https://www.dfat.gov.au/sites/default/files/aukfta-submission-the-regtech-association.pdf (Accessed January 2021)

3.1.6 Technology

TECHNOLOGY challenges abound in compliance, with two of the top 6 barriers to adoption identified by vendors linked to infrastructure. Fourth on their list were the constraints imposed by legacy IT[65], which is a well-known and well understood challenge for many long-standing institutions. It is also material to RegTech adoption since legacy systems can make implementations more difficult and costly to complete. It also creates a drag on achievable efficiency gains, saps available resources, and can negatively impact the business case for future projects. These factors were also highlighted in the FCA's recent review on 'Implementing Technology Change Review', where it was noted that firms with a high proportion of legacy technology 'limits the flexibility of processes and prevents firms from taking advantage of new developments'.[66]

Closely aligned to this is the challenge of integration, which ranked sixth on vendors list of barriers, reflecting the difficulties of hooking new systems into complex client infrastructure. Interoperability is an issue that cropped up frequently in interviews, particularly given the importance to firms of acquiring solutions that can work well together on a single platform (which one institution described as *"coopetition"*). The popularity of programming languages such as Python, with its extensive libraries, can help in this regard, as can the availability of standardised data and compliance-savvy tech talent to advise on and support RegTech projects.

3.1.7 Board education

A dearth of **BOARD EDUCATION** is another key barrier, allied to and overlapping with the lack of awareness around RegTech. In the survey, 62.0% of vendors called for better education around RegTech for the boards of regulated

65 Legacy technology is a big driver of cost for FSIs. Not only do they drive material maintenance costs, but there is also the cost of fines levied by regulators when legacy systems fail as well as the opportunity cost of stymied innovation. In many cases, FSIs run multiple legacy systems side-by-side, requiring more IT staff to manage. Meanwhile aged systems require ever scarcer knowledge of outdated computer languages to maintain. FSIs are heavily invested in curing their 'legacy hangover', but such systems are not easily remediated, with minor tweaks often driving high costs. Legacy core systems also typically run-on mainframes, with groups tasked with supporting individual applications. This is meaningful since it makes change and scalability expensive to achieve, slowing down new integrations and dragging on performance.

66 https://www.fca.org.uk/publications/multi-firm-reviews/implementing-technology-change#lf-chapter-id-the-impact-of-infrastructure-impact-of-legacy-technology (Accessed February 2021)

institutions, ranking it second on a list of 11 factors. Interviewees described how influencing budget holders internally, particularly at board level, can be a frustrating experience for compliance teams. In cases where there is no immediate gap to plug in their compliance technology stack, they can find their projects stymied by cries of *"…if it ain't broke, why fix it"*. So too, where boards must choose between internal-facing compliance optimisation and external, customer-facing projects that promise new revenue. Better educated boards will make better informed decisions about where to invest scarce capital. Upskilling at the top of FSIs will also help to offset the apathy towards compliance transformation holding back greater RegTech adoption.

3.1.8 Standardisation

The global regulatory landscape is vast and complex, featuring a wide array of rules for firms to track, and an enormous range of data types to be found, vetted, aggregated and delivered. A lack of **STANDARDISATION** in both rules and data has created layer upon layer of unnecessary complexity for firms to digest. This can make finding the right RegTech solution more difficult and add to the scale gap by placing additional requirements on vendors to satisfy multiple rules whose intent is broadly identical. Progress towards standardisation has been slow and piecemeal, however more can be done at a UK level to harmonise rulebooks and clear the way for firms to achieve greater efficiencies from the RegTech tools they invest in.

3.1.9 Talent

Boards are not the only cohort in need of better education around RegTech. The scarcity of critical developer **TALENT** in financial services – both for institutions and vendors – is well documented[67], as are the potential prizes in broad technology areas like AI and data analytics. However, as the interviews demonstrated, technology skills alone are not enough to meet the needs of institutions. Rather, with the stakes so high, candidates must acquire a robust understanding of relevant technologies (e.g. databases, statistical techniques), FS industry sectors (e.g. banking, insurance) and their operating context (e.g. compliance) in order to deliver *real* value on projects (see boxout below). Similarly, the depth and standard of technology education for supervisors themselves is also an area of potential focus, given the importance placed on the discussions that should happen between 'regulator' and 'regulated' regarding their compliance technology infrastructure.

While there is much work to be done to grow the compliance-aware tech talent needed to support the next generation of RegTech projects, urgent attention should also be given to the 'image problem' facing RegTech (i.e. doesn't generate revenue, not customer facing, less exciting than other projects). Misconceptions about the scope, scale and importance of compliance technology were called out as a potent disincentive by institutional interviewees. It made it harder for them to attract the right internal talent into their business units, particularly when competing with other front-office functions, and also impacted recruitment. In one instance, a compliance interviewee explained how management's decision to sponsor a captive technology team (including developers) for compliance had 'changed the game' for them. Rather than fighting for internal resources, they now enjoyed better informed and more cordial relationships with other internal teams, better discussions around how best to deploy their resources to support 'best compliance', and greater success in implementing new solutions. While firms cannot be mandated to replicate such a forward-thinking model, leading practices like this can be better recognised and incentivised to encourage more FSIs to follow suit.

67 A recent study by the Financial Services Skills Taskforce (FSST), which found that the limited availability of skilled workers in FinTech was harming both competitiveness and innovation. As stated in their report from January 2020, "Over half (53%) of UK FinTechs cite attracting suitable talent as a concern, the top ranked challenge facing the sector. Software engineering, system architecture and development was cited as the most in-demand skillset (ranked first by 52% of firms), but also the hardest to find. The second most valuable, and equally difficult to source, was data analytics and data science skills (ranked top by 19% of firms)" https://wp.financialservicesskills.org/wp-content/uploads/2020/08/FSST-FINAL-report-1.pdf

STUDY

The financial services talent gap

Financial services is an industry in transformation, with big prizes available to those who can make the most of the opportunities presented by technology. One recent analysis forecast $1 trillion[68] of potential cost savings for global financial services through the better use of AI by 2023. Around half of this enormous figure ($447 billion) would be realised in the banking sector alone. And, with its long tail of manual processes ripe for automation, it would be fair to assume that a sizable chunk of this enormous figure would land in compliance. However, to exploit this opportunity, firms need talented developers with the right skills.

What qualifies as the right talent though may not immediately be obvious. For example, most would agree that AI hires should ideally possess computational skill, business knowledge, and a mastery of statistical and mathematical frameworks. Currently, the proportion of AI-aligned talent that can work effectively across those disciplines is limited, with many college and university courses tending to train students in only one of the three critical areas. In addition, candidates need to understand how financial services work. While skills like those needed for app development are transferable across industries, AI only works when applied to the right use cases. Programming and statistical skills are necessary to build and test algorithms and interpret outputs, but domain knowledge is essential to ensure they work in the right way.

And so, without a grasp of FS business models, operating challenges and market conditions, firms could waste resources and even accidentally create new risks. This is also true for the specifics of the compliance context in which RegTech-savvy developers are needed. Understanding the intent of a new deployment and being cognisant of the rules and stakes governing this work are equally essential context.

AI is a major feature of many current RegTech projects, but it is only one of many technology areas that firms need to acquire expertise in. An opportunity exists to review the provision of technology training for financial services in general, and compliance technology in particular. In this way the specific end-to-end skills needed to navigate future projects can be incorporated in academic courses, apprenticeships, professional qualifications and work placements.

Financial Services Skills Commission

The Financial Services Skills Commission is an independent, member-led body working with the UK sector to ensure that it has the talent and skills it needs for the future. Some of the key activities for the Commission over the next two years include:

- Producing and maintaining a robust analysis of the skills needs of the sector and working with firms and regulators to drive investment in skills and upskilling;
- Creating and maintaining a common skills framework and working with firms to drive adoption and education & training providers to embed the framework in skills provision;
- Creating common messages and collaborative action attraction, targeting specific audiences to widen and diversify entry routes.

The **Skills Framework** will identify and define future skills required by the sector. By creating common definitions and proficiency levels for skills with alignment to job families, the framework will support investment in training, skills based recruitment and development of career pathways for firms and individuals.

68 See recent blog by Cristina Lázaro, head of CaixaBank Business Intelligence, for FinTech Futures on data-driven decisioning, Feb 2020: https://www.fintechfutures.com/2020/02/from-data-to-decisions-the-rise-of-ai-in-retail-banking/

3.1.10 Finance

Meanwhile, scale **FINANCE** has been a challenge in the UK for some years, and a discussion is already underway to address the estimated £15 billion gap in growth capital provision facing the nation's small, innovative businesses[69]. This, of course, impacts RegTech as it does other areas of the economy. However, the finance challenge for UK RegTech is not simply one of funding. Although 31.4% of vendors 'voted' for an increase in the availability of Government support to fund innovation, this still ranked 10th in a list of 11 support measures vendors were seeking. As other jurisdictions have shown, grants to institutions to support the hiring of talent and experimentation with new technology can be just as efficacious in stimulating uptake. Measures that reduce the perceived risks of compliance innovation – *especially in terms of its cost* – would therefore be very welcome indeed.

STUDY

MAS – Reducing risk for financial institutions to adopt RegTech[70]

The Monetary Authority of Singapore (MAS) offers a range of targeted fiscal support packages to stimulate RegTech innovation and adoption throughout their financial services sector. The regulator has recently announced a S$125m COVID support package and S$6 million FinTech Solidarity Grant, which offer comprehensive support for technology start-ups in Singapore. Additionally, MAS strongly encourages buy-side experimentation through their Financial Sector Technology and Innovation Scheme (FSTI), into which they recently committed an additional S$250 million to further ongoing efforts to accelerate technology adoption in Singapore-based FIs.

The FSTI is a unique scheme which highlights the important role government and regulators can play in overcoming buyer inertia in the RegTech industry. Since its inception in 2015, more than 200 FIs have received funding, leading to development of over 40 innovation labs, in which over 60% of employees are Singaporean. Some of the key goals of the FSTI scheme include:

1. Encouraging financial institutions to set up innovation centres of excellence or labs in Singapore to test innovative ideas and roll our market solutions. MAS offers co-funding support of up to 50% for salaries of existing or new staff involved in the project.
2. Improving industry-wide technological infrastructure or utility to boost efficiency and productivity in the financial sector. MAS provides up to 70% of level of funding for qualifying expenses in projects which build technological infrastructure or result in productivity gains – key areas of focus include cyber security and data analytics/AI.
3. Encourage experimentation, development and dissemination of innovative technologies through sponsoring PoC projects. The FSTI scheme offers up to S$400K to conduct early stage development of novel technology solutions.
4. The Digital Acceleration Grant (DAG) within the FSTI supports smaller FIs and FinTech firms to adopt digital solutions to manage risk and improve productivity. Qualifying firms can receive up to 80% co-funding on implementation or project expenses.

In the next section, the recommendations and next steps needed to secure the sustainable future of UK RegTech are outlined for consideration.

69 See "The Future of Growth Capital" report by Innovate Finance, The ScaleUp Institute & Deloitte. It includes calls for the creation of a future opportunity fund to focus investment, the opening up of access to corporate funds (inc. an estimated £6 billion of so-called 'patient capital' held by UK pension funds) and a wider role for Innovate UK in distributing innovation capital to the UK's most innovative, early stage and scaling businesses. Published: 06 Aug 20 https://www.innovatefinance.com/reports/the-future-of-growth-capital/

Chapter 4

Recommendations and next steps

Twelve specific recommendations arising from this report focus on addressing the challenges identified in the previous section.

4.1 Recommendations matrix

Twelve specific recommendations arising from this report focus on addressing the challenges identified in the previous section.

Whilst all these recommendations combined will have the most positive impact on the UK RegTech industry, three in particular stand out as being the highest priority:

Creating a coherent and collective voice for the UK RegTech Industry.

Establishing a new accreditation and testing centre for RegTech solutions.

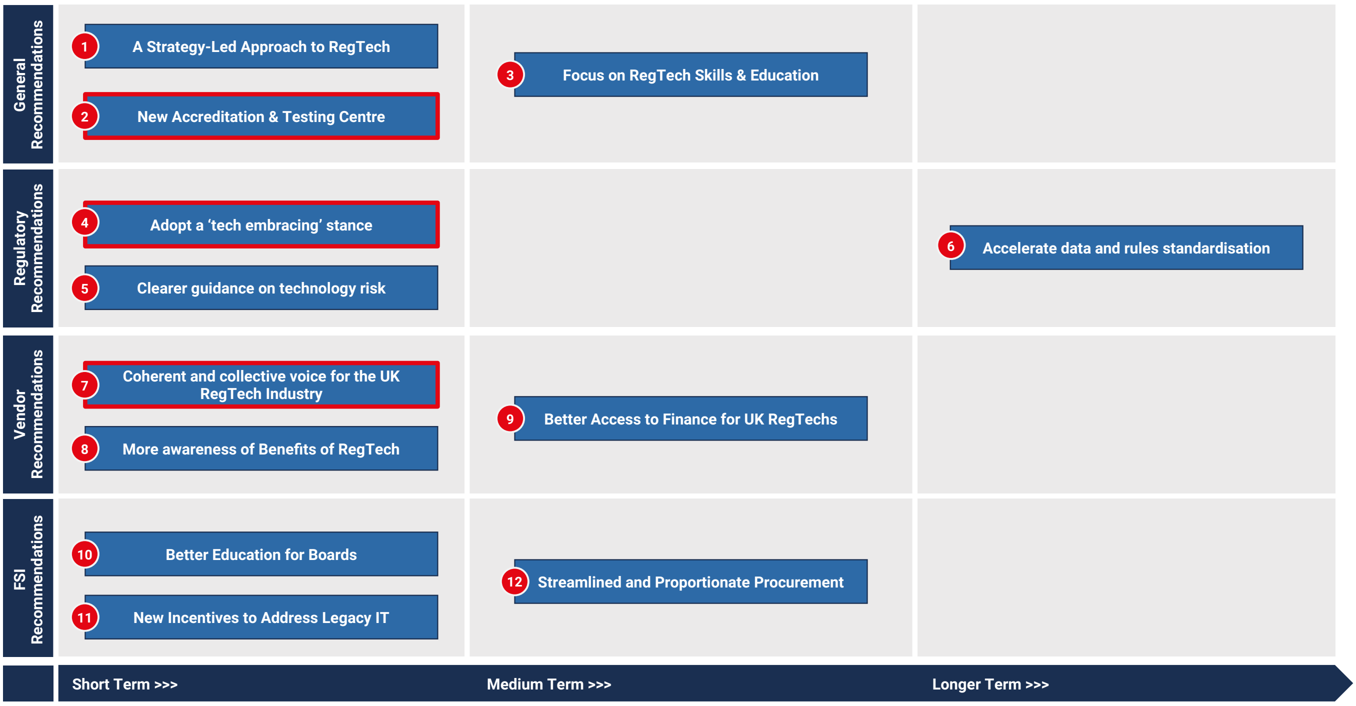
Regulators to adopt a 'tech embracing' stance to advocate for improved standards for technology driving regulatory compliance in firms.

These recommendations are aligned to the key stakeholder groups that were researched for this report – vendors, regulated firms and the regulators themselves – together with several general recommendations that cut across all three sets of actors. Also included are some indicative next steps for implementing the recommendations which are intended as a starting point for discussion with the relevant stakeholders.

As Exhibit 4.1 shows, they are phased for short-, medium- and longer-term implementation, depending on their anticipated complexity.

Exhibit 4.1 A matrix of recommendations to address RegTech Challenges

Source: RegTech Associates analysis of combined project fieldwork



4.2 General recommendations

1 Establish a **VISION** for RegTech through a strategy-led approach

Use the findings from this report as a key input into the development of a fully-fledged UK Strategy for RegTech by the UK government. This strategy would lay out the future vision for all parts of the RegTech ecosystem, including vendors, regulated firms and the regulators.

Even more broadly, the City of London Corporation would welcome an overall strategy for the UK financial services industry with a vision for sustaining the competitiveness of the industry. By boosting its adoption, RegTech can be an important lever in this competitiveness agenda through its potential to reduce operational costs for UK regulated firms.

Also, it is important to recognise that the RegTech ecosystem does not simply consist of vendors, buyers and regulators. Indeed, there is a far wider network of stakeholders – *from supply-chain players to Government and academia* – all of whom have roles to play in overcoming these barriers. A well-executed strategy will simplify broader engagement and maximise the chances of success.

SUGGESTED NEXT STEPS

Determine the best 'home' for the UK's RegTech Strategy, acknowledging the application of RegTech to other highly regulated industries.

Gather further evidence regarding the size of the industry and the potential for growth.[71]

Consult with the RegTech ecosystem to develop a clear vision for building a sustainable future for the industry.

2 Build **AWARENESS** in RegTech's ability to **SCALE** through an independent testing and accreditation regime (high priority)

Establish a system of practical, independent, technology driven RegTech Accreditation to drive wider awareness of UK RegTech, proving the industry's ability to provide scalable and interoperable solutions. By creating an independent utility that can act as a testing and proving platform for RegTechs, buyers would be provided with greater assurance and confidence that the solutions can deliver.

Some form of accreditation against an agreed set of testing standards (such as cross-border data security, ease of integration with other systems, processing volumes etc) would follow, which could include and assessment of the completeness and quality of the data that financial firms generally ask for as part of the procurement or onboarding process.

SUGGESTED NEXT STEPS

Conduct a feasibility study into the establishment of a UK RegTech testing centre, ideally a collaborative public/private utility model which would be open to RegTech vendors and would test their solutions against an established set of standards to provide assurance of their scalability and interoperability.

Establish a set of standards against which the RegTech Testing Centre would then apply to RegTech solutions – this would need to be done in conjunction with the buying community to ensure there was trust established at the earliest opportunity.

Determine the funding and governance and the role that the UK regulators, if any, would play in the Centre.

71 See Section 2 for more background on the availability of industry data.

3 Bridge the **TALENT** deficit by focusing on RegTech skills & education

Review the provision of RegTech-related education, skills and talent, especially those that pertain to the enablement of RegTech vendors, regulated firms and regulators in the UK to create, sell, adopt and oversee new RegTech tools. This should include provision for work placements – *both within industry and academia* – to help grow the next generation of UK compliance IT specialists needed to implement change.

SUGGESTED NEXT STEPS

Consider how the Financial Services Skills Commission workstream on the Future Skills framework[72] could incorporate and support the development of relevant talent for RegTech, addressing both technology skills, industry sub-sectors (asset management, banking, insurance, FinTech, payments) and regulatory and compliance domain expertise (prudential regulation, financial crime compliance, cybersecurity, privacy regulation, conduct of business, market integrity and transparency).

Review current higher education provision on RegTech and work with academia to ensure essential regulatory and compliance knowledge is made available as part of relevant digital technology courses and vice versa.

Review professional qualification and apprenticeship standards[73] relevant to RegTech from professional bodies such as the Chartered Insurance Institute, Confederation of British Industry and the Chartered Institute for Securities and Investment.

Consider including RegTech skills and talent as part of the research being led by the Financial Services Skills Commission and the Professional and Business Services Council to determine skills needed across the UK regions.

Encourage the cross-fertilisation of RegTech knowledge and skills within the different teams at the FCA and Bank of England, ensuring that front-line supervisors are aware of how RegTech can be applied to firms' regulatory obligations. Increasing the diversity of skills and talent in different parts of these organisations can reduce group think and improve decision-making.

72 https://financialservicesskills.org/what-we-do/

73 For example, https://www.instituteforapprenticeships.org/apprenticeship-standards/senior-compliance-and-risk-specialist-v1-0

4.3 Regulatory Recommendations

4 **REGULATORS** to adopt a ‘tech embracing’ **STANCE** to advocate for improved standards for technology driving regulatory compliance in firms (high priority)

UK regulators should adopt a visibly and actively “tech embracing” stance across the whole of their organisations, driving existing pockets of advocacy within leadership and innovation teams down into the supervisory layers. UK regulators must also be empowered to take a clear and positive position on RegTech, whilst recognising that the risks of innovation must be balanced with the benefits. RegTech should become a regular topic of conversation between regulated firms and supervisors.

SUGGESTED NEXT STEPS

FCA and the Bank of England should empower front line supervisors with sufficient understanding and knowledge of RegTech to include questions about the robustness and effectiveness of compliance technology in their supervisory activities.

Both financial institutions and vendors would benefit from clearer guidance about the principle of ‘technology neutrality’ and what the implications of this are in terms of policy, supervision and the possibilities for engagement with the RegTech industry.

In the longer term, policy-makers and regulators should consider whether ‘technology neutrality’ is a principle that can be upheld, given the accelerated levels of digital transformation in the financial services industry more broadly.

Consider even greater transparency in how the regulators themselves are making use of technology (e.g. from infrastructure choices like cloud, to specific supervisory technologies).

5 Regulators to provide clearer guidance regarding **TECHNOLOGY** risk management and expectations of what ‘good’ looks like

As part of the wider operational resilience agenda, UK regulators should provide clearer guidance about their expectations for the standards of technology used to manage compliance obligations. This would include developing and sharing an unambiguous view of what ‘best compliance technology’ looks like, and a rejection of certain legacy compliance approaches (e.g., spreadsheet and email-based compliance) in favour of leading practices. This should include additional guidance for regulated firms on how to think about their IT risk (particularly in areas that impede wider investment in RegTech solutions).

SUGGESTED NEXT STEPS

The FCA and Bank of England should consider beginning a dialogue with the financial services industry on technology risk management, building on the work that has already been done regarding outsourcing and the use of cloud computing.

Use the input from this dialogue to provide clear guidance on managing technology risk, including how to manage risks from legacy technology and the replacement of that legacy technology with more innovative solutions.

Consider whether improved technology risk management could be specifically recognised through lower operational risk capital requirements.

6 Accelerate work to establish **STANDARDS** in data and regulatory rules to move towards a digitally-enabled regulatory framework

Accelerate the work already underway to make the UK regulatory framework more digitally-enabled. A digital-first approach to regulation is advisable for the UK, given the rapid transformation of the global financial system through technology. At the core of this approach is the setting of common data standards and the global harmonisation of regulatory rules. These are ambitious objectives, and will require a longer time horizon to bring them to fruition. This report is fully supportive of the goals and objectives set out by the Bank of England in their Data Collection Transformation Plan and would like to see the time-frames shortened if possible. More broadly, these activities demonstrate to the regulated community that the regulators are leading by example in adopting RegTech and will also incentivise legacy laggards to renovate their outdated core technologies.

SUGGESTED NEXT STEPS

Include the development of a digitally-enabled regulatory framework as a cornerstone of the UK RegTech Strategy, laying out a clear roadmap for what can be achieved and by when.

Explore opportunities for increasing funding and resource capacity for both the FCA and Bank of England to accelerate this work.

Consult with the financial services industry to create a prioritised list of data types for standardisation.

Consider a new regulatory principle of minimising compliance burdens on firms, including by making rules machine readable.

4.4 Vendor Recommendations

7 Establish a coherent and collective voice for the UK RegTech industry to improve the **REPRESENTATION** of the industry in the UK (high priority)

Establish a coherent and collective voice to represent the UK RegTech industry to help address barriers to RegTech adoption by generating more awareness around RegTech. It is envisaged that whatever form this collective voice takes, it could orchestrate some of the activities outlined in these recommendations, particularly around building awareness and supporting education around the sector. Coalescing around a shared vision for the industry would help to close some of the 'trust' gaps between vendors and buyers. Regulators would also benefit from having a single point of contact for regulators when seeking views from RegTechs.

While the Bank of England and Financial Conduct Authority have gone some way to fill this gap in the landscape, there are understandable limits as to how far they can continue to do so. A unified voice will bring fresh impetus and provide a collective voice for the industry.

SUGGESTED NEXT STEPS

Consult with the RegTech industry regarding the optimum model for this collective voice – whether it should be part of one of the many existing industry bodies (e.g. Tech UK, Innovate Finance) or a new association in its own right.

Determine the funding model based on the findings of this consultation.

Agree the terms of reference and the role that any collective entity will play in the ecosystem, the type of relationship it will have with UK regulators and how it will encourage close collaboration and strong participation from vendors and institutions.

8 Improve **AWARENESS** and transparency of the benefits of RegTech

Provide more evidence of and transparency around the more granular benefits that RegTech is delivering from specific implementations with financial institution partners. RegTech vendors could develop common standards for evidencing and articulating the benefits of their products. This would be a natural role for the new representative body (see Recommendation 7) and should include driving greater awareness of best practice case studies where RegTech has delivered meaningful value and has been scaled effectively.

One of the difficulties in proving the benefits of RegTech are the difficulties in measuring and monitoring the cost of compliance and it is recommended that a standardised approach is developed to help measure both compliance costs and the savings that can be applied through the use of RegTech.

SUGGESTED NEXT STEPS

Create a standardised set of industry case studies where RegTech has been successfully deployed at scale and is delivering real, measurable benefits to the financial institutions.

Establish an independent benchmark for compliance costs, including a framework for compiling and assessing a reliable cost of compliance for financial institutions and other business types.

9 Provide better access to **FINANCE** for UK RegTechs

Accelerate the work already underway to address a longstanding gap in the provision of scale finance for small businesses in the UK. This will help ensure RegTech firms, who are amongst the most innovative enterprises in the UK economy, receive appropriate financial support to scale and grow. This would also include better information for RegTechs regarding the available sources of financial support already available to them (e.g. R&D tax credits) as well as a regular, independent review of sector funding to ensure that innovators in this key sector have the financial resources they need.

SUGGESTED NEXT STEPS

Create a central hub of information about potential sources of funding / tax credits available to the RegTech industry.

Consider what could be done to boost the growth of RegTech firms outside of London and the South East as part of the UK Government's Levelling Up agenda – potentially setting up regional 'RegTech' hubs.

Innovate UK to consider providing R&D funding to scaling RegTechs.

4.5 Financial institutions recommendations

10 Improve **BOARD EDUCATION**, awareness and responsibility for RegTech

RegTech should be higher on the agenda of the boards of regulated financial institutions, which means improving their level of education and awareness. Financial Institutions could consider how to devote more Board time to RegTech or risk and compliance technology – perhaps as a standing agenda item where relevant or via other appropriate mechanisms.

Regulators could also use their powers through the Senior Managers and Certification Regime (SMCR) to ensure Senior Managers who sit on the Board have adequate levels of knowledge and understanding of RegTech.

SUGGESTED NEXT STEPS

Financial institutions should consider how knowledge and understanding of RegTech flows upwards in their organisations and consider regular briefings and updates in Board Meetings.

Financial institutions should consider levels of digital knowledge and expertise when appointing new Board Members.

The FCA could consult on how the SM&CR could better support the need for better RegTech knowledge and skills at more senior levels in regulated firms.

Financial institutions should review the responsibilities for decision-making about RegTech and ensure executives with the requisite skills (technology and compliance knowledge combined) are central to decisions relating to compliance technology.

11 Provide financial institutions with incentives to upgrade from legacy **TECHNOLOGY** to newer, more efficient systems

New ways need to be found to encourage regulated financial services firms to update their legacy infrastructure and invest in new IT. Outdated IT is a well understood barrier to innovation and is tied to financial firms' risk aversion when it comes to adopting new technologies. More granular knowledge and understanding of the particular risks and issues involved in replacing legacy technology, and a view from the regulators on these risks would be a useful first step in establishing the type of regulatory 'carrots' and 'sticks' that could be applied to solve this problem. One suggestion is a combination of a tougher regime for technology resilience (e.g., as part of the FCA's broader consumer protection mandate) and financial incentives for smaller financial firms to invest in RegTech solutions (such as that operated by the Monetary Authority of Singapore).

SUGGESTED NEXT STEPS

Conduct further research into the specific issues associated with legacy technology platforms within financial institutions, exploring the risks and costs of replacement versus ongoing maintenance.

Select financial institutions might wish to consider developing a standard approach to adopting cloud technology, including the technology, processes and people required. This approach would hopefully be endorsed by the regulators and could be replicated by other firms.

12 Reduce barriers to **SCALE** by streamlining vendor selection and procurement processes

Financial institutions are already actively reviewing their procurement processes to create a more streamlined and proportionate process for selecting and onboarding smaller technology firms. This work is welcomed and if possible, these processes could be streamlined even further. It is clear that working with unknown vendors still pose risks to a financial services organisation, but some of the other recommendations in this report, especially the RegTech Testing Centre are explicitly designed to provide a greater level of assurance about solutions.

Greater sharing of RegTech success stories amongst peers would also build confidence, especially if this knowledge was pooled in a central manner. Clarity provided by regulators on the management of technology risks could also include more explicit expectations regarding the proportionate management of vendor risk. Initiatives such as TechNation's FinTech Pledge[74] also provide a template that could be extended to the RegTech industry.

SUGGESTED NEXT STEPS

Financial institutions might wish to consider creating specific partnership teams that can act as a point of liaison between internal procurement teams and external technology vendors that can help them to navigate the process.

Other measures could include involving procurement earlier on in the process or appointing RegTech leads or internal champions on a regional or more localised basis to help smooth out the process and provide additional information to the procurement teams.

Financial institutions should consider how they can share the knowledge and experiences they have of working with RegTech vendors in a standardised manner so this information can be fed into procurement risk assessment by their peers.

74 https://technation.io/fintech-pledge/ (Accessed February 2021)

Appendices

1. Glossary of terms
2. Research approach

Appendix 1 – Glossary of terms

Abbreviation	Meaning
AI	Artificial Intelligence
AML	Anti-Money Laundering
API	Application Programming Interface
APRA	Australia's Prudential Regulation Authority
ASIC	Australian Securities and Investments Commission
BoE	Bank of England
CIP	Cyber, Identity and Privacy
CRTA	Canadian RegTech Association
DLT	Distributed Ledger Technology
DRR	Digital Regulatory Reporting
ESG	Environmental, Social Governance
FATF	Financial Action Task Force – The global oversight body for anti-money laundering and counter-terrorist financing
FC	Financial Crime
FC/FinCrime	Financial Crime
FCA	Financial Conduct Authority
FI	Financial Institution
Firmographics	The structure and characteristics of the organisations – *technology vendors, regulatory bodies and financial services institutions* – who contributed data and insights to the project. Key firmographic traits include size, category, role and geography.
FSI	Financial Services Institution
FTE	Full Time Employee
GC/GenComp	General Compliance
GFIN	Global Financial Innovation Network
HKMA	Hong Kong Monetary Authority
HMT	Her Majesty's Treasury
KYC	Know Your Customer – KYC guidelines require that financial services firms make an effort to verify the identity, suitability, and risks involved with maintaining a business relationship.
Legacy Technology /Infrastructure	An old/outdated method, technology, computer system, or application program
MAS	Monetary Authority of Singapore
MIT	Market Integrity & Transparency
ML	Machine Learning
PoC	Proof of Concept
PRA	Prudential Regulation Authority
RDIM	Regulatory Data and Information Management
RPA	Robotic Process Automation
RR	Regulatory Reporting
RRAC	Regulatory Risk Analytics and Calculations
TC/TaxComp	Tax Compliance
Tech Sprint	A set period of time during which specific work has to be completed and made ready for review.
Technology Stack	A list of all the technology services used to build and run a particular function

Appendix 2 – Research approach

The research presented in this report was executed between October and December 2020, and had five key objectives:

1. Provide a better understanding of the barriers to innovation and the adoption of RegTech by UK-based financial services institutions FSIs
2. Reveal insights around the impact of the global COVID-19 pandemic on UK RegTech
3. Spotlight key contrasting trends in the RegTech categories of Financial Crime and Regulatory and Compliance Management
4. Highlight international best-practices that support the adoption of RegTech in other jurisdictions, and enhance the competitiveness of their sectors
5. Outline a set of clear, actionable recommendations for consideration by UK policy makers, regulatory authorities, technology vendors and regulated institutions

To achieve the research objectives, the research approach was developed using a blend of survey fieldwork and expert industry interviews. In tandem, these qualitative and quantitative findings provide a robust foundation for analysing the UK RegTech sector (see Figure 5.1).

Research design

It was critical to the research objectives that this research took into consideration not just the views and experiences of RegTech vendors but also of the buying community – financial institutions – and regulators from several jurisdictions.

To achieve this, the research was designed to be conducted in three phases of fieldwork, combining both quantitative and qualitative methods to maximise the possibilities of cross-validation and add to the holistic understanding of the issues.

The first phase was a quantitative survey, aimed at RegTech vendors operating primarily in the UK. The survey was completely anonymous and consisted of 28 questions. The survey ran for the whole of November 2020.

The second phase followed up the survey with a series of vendor-focused roundtables to validate and gain further insights on the interim survey findings.

Finally, in parallel with the survey and roundtables, a series of qualitative interviews were conducted with representatives from financial institutions and seven regulators from the UK and overseas.

Following the data collection, the results were analysed in a series of workshops with the research team to derive insights that addressed the research objectives.

Figure 5.1 Overview of three-phase research approach

In Q4 2020, a detailed online survey of 161 global RegTech vendors was conducted

In Q4 2020, a detailed online survey of 161 global RegTech vendors was conducted, focusing on four key areas of enquiry...

- **Firmographics:** questions on size, location and RegTech category permit deep segmentation.
- **Perceptions:** questions on demand, performance, and factors influencing their ability to win business, as well as leading global practices they would like to see replicated in the UK market.
- **Core Themes:** vendors asked for views on the impact of COVID-19 on UK RegTech, planned innovation priorities and the types of support they wanted from regulators and policy makers.
- **Spotlights:** vendors also asked for views on two contrasting RegTech categories - Financial Crime and Regulatory & Compliance Management.

After the quality-assuring the responses, 125 were found to have met our threshold quality criteria. These were carried forward and represent the "Voice of the Vendor" in UK RegTech.

Online vendor roundtables were used to validate the survey responses

A representative subset of vendors were then invited to attend a series of three 90-minute follow-up virtual roundtable sessions...

- The purpose was to **validate our early survey results** (based on an interim sample of 114 responses) and to support their interpretation.
- Sessions were attended by **senior-level representatives from 14 global RegTech vendors**. These included 6 providers of financial crime prevention solutions in areas such as AML, sanctions monitoring and fraud detection. The remaining 8 vendors represented other solution areas, including regulatory reporting and general compliance.
- Attendees represented small, medium and large RegTech firms from a range of geographies (inc. France, UAE, UK, and the US).

Discussion focused on key themes such as barriers to adoption, desirable policy interventions and the impact of COVID-19, providing strong validation for the survey.

Detailed interviews with industry/regulatory stakeholders provided a 360-degree view

To support our survey findings, 13 one-hour interviews were conducted with a range of non-vendor industry stakeholders, including...

- **Heads of Innovation, RegTech and/or Policy at 7 leading international regulatory bodies**, in the UK, Australia, Canada, Singapore and the US.
- **Heads of Compliance, RegTech and/or Policy at 6 leading global financial institutions**, including 1 universal bank, 2 asset managers, 1 global insurer, 1 wealth manager and 1 retail-focused "neobank". These firms were headquartered in the UK, Switzerland and the US.
- Interviews were structured around a three-layer core methodology designed to test common and specific themes for each stakeholder group.

The interviews provided the essential perspective of the buyers of RegTech and their supervisors, who together represent a large chunk of the UK RegTech ecosystem

An extensive, multi layered primary research approach, in tandem with an expansive literature review delivered a strong, representative basis for analysing the UK RegTech sector, addressing the full range of key objectives set at the start of the project.

Quantitative fieldwork approach – RegTech survey

In October 2020, a detailed online survey of RegTech vendors was launched to market. The survey, which was fully anonymised, sought the views of global and UK-based RegTech firms serving UK financial services clients, with questions ranging across four key dimensions (see Figure 5.2).

Figure 5.2 Layered survey design focused on key report themes

1 Firmographics

Questions about the size, type, location and role of respondents are baked into the survey script to support second-line analysis.

2 Drivers, barriers & vendor perceptions

Questions about the benefits of RegTech, barriers to adoption and perceptions of a series of industry statements provide a current view of how vendors are feeling about their sector.

3 Performance & desired measures

Questions on the impact of COVID-19, drivers of/barriers to future growth, innovation roadmaps, desirable regulatory initiatives, revenues and outlook for 2020-21 provide a view on performance, priorities and what vendors believe will help them.

4 Tailored deep dive questions

Tailored questions focusing on financial crime (e.g. anti-money laundering and fraud) and regulatory change management provide deeper insight to support the focus areas of our report.

Source: RegTech Associates (RTA)

In total, 28 questions were posed in the survey. These were answered by 161 qualifying vendors[75]. Of these responses, 125 met the quality threshold of the survey methodology[76], forming the final basis for the analysis presented here.

The survey featured a range of detailed firmographic[77] questions that were used to profile the responses. Vendors self-selected from a list of RegTech solution categories[78], role types (e.g., Founder/CEO, Product Specialist, Sales*)*, size bands (based on total FTEs[79]) and geography. These detailed firmographics supported extensive second- and third-level analysis of responses, adding additional richness to the study.

Vendors were then asked a range of questions regarding the business environment for UK RegTech in 2020, as well as their perceptions of the factors driving (or impeding) their success.

Key questions to vendors on the UK business environment included:

- How they rated the current level of RegTech adoption by UK financial services institutions (FSIs) (*e.g. high, moderate or low*)
- How they rated the commercial environment for RegTech in the UK (*e.g. strong, moderate or weak demand for solutions*)
- Their ratings of a range of internal and external barriers[80] holding back the greater adoption of RegTech solutions by UK buyers
- The extent to which they agreed with a range of statements relating to RegTech in the UK (e.g. *"The regulatory framework in the UK is digitally-enabled"*)

Vendors were also asked a series of questions regarding their business performance in the context of the business environment they had described. These questions dug into the self-perception of RegTech vendors, as well as their sales expectations for 2020 and 2021.

Key questions relating to business performance included:

- How UK sales of RegTech solutions in 2020 were expected to perform compared with 2019 sales (e.g. up, down or unchanged)
- How UK sales of RegTech solutions were forecast to perform in 2021 (e.g. up, down or unchanged)
- How the pandemic had impacted sales in 2020, and how it was expected to impact sales going into 2021 (e.g. a driver of growth, a barrier to growth or neutral)

The survey also explored other key themes driving the study, and respondents were invited to elaborate on their future product development roadmaps, the factors they felt would most help to drive the future success of UK RegTech, and the initiatives they most wanted to see announced by UK regulators.

Key thematic questions included:

- Which aspects of their solutions they were investing in to enhance their offerings (*e.g. cost, interoperability or the utilisation of new technologies*)
- Which factors had the greatest potential to drive future growth in UK RegTech (*e.g. increased availability of*

75 To qualify for inclusion in the survey, respondents needed to hold a senior position at a RegTech vendor company that was selling its solutions to financial services buyers in the UK market.

76 The methodology requires respondents to answer at least 30% of the full survey to qualify for inclusion in the final dataset used to drive the analysis.

77 The term 'firmographics' is used to describe the structure and characteristics of the organisations – technology vendors, regulatory bodies and financial services institutions – who contributed data and insights to the project. Key firmographic traits include size, category, role and geography.

78 For consistency, this report leverages the published RegTech taxonomy as outlined in Section Two.

79 FTE = Full Time Employees

80 Internal barriers include procurement processes, access to trained staff and budget availability, while external factors include the COVID-19 pandemic as well as the wider outlook for the UK economy.

growth capital, wider adoption of cloud technology, et al)

- Which regulatory initiatives would most help their own UK RegTech businesses to be more competitive (*e.g. a list of regulator-approved vendors, clear data standards, et al*)
- The anticipated benefit to RegTech adoption of providing UK regulatory rules in a digital format to regulated firms (*e.g. positive, negative or neutral*)

At the end of the survey, firms were invited to provide views on the two focus categories of financial crime and regulatory and compliance management selected for the report. In addition, they were also invited to explain in their own words what their own demands would be to the UK Government and regulators, as well as any measures taken by other non-UK jurisdictions, they would call particular attention to as leading practice in driving the adoption of RegTech.

Firmographic characteristics of RegTech contributors – survey respondents

This study benefits from data and insights contributed by a large and representative sample of global RegTech vendors, regulatory bodies and financial institutions. The sample group, comprising 125 survey respondents, 14 virtual roundtable vendor contributors and 13 interviewees (Total n = 152) can be segmented in a number of ways.

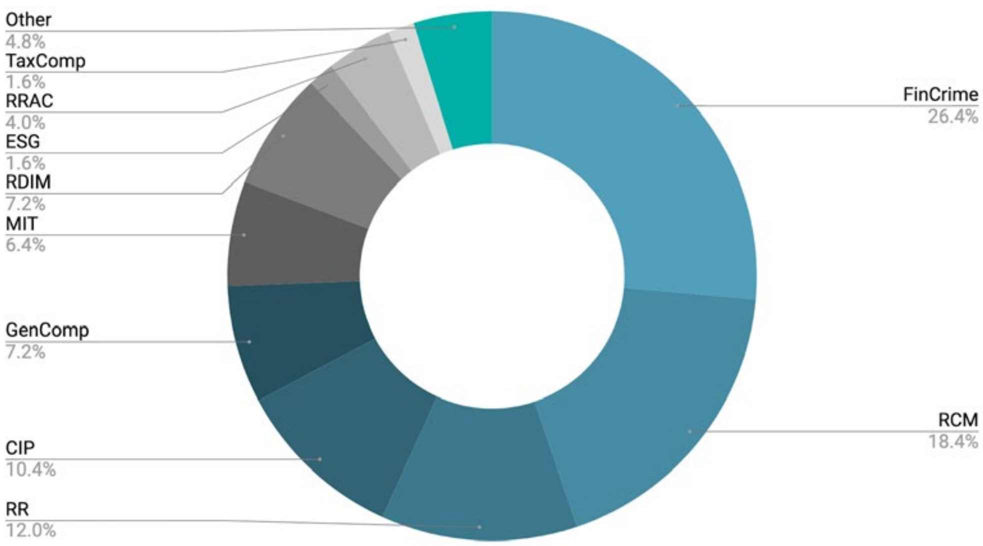
Figure 5.3 below shows the representative distribution of vendors serving the UK market across primary business areas or RegTech solution categories.

Financial Crime solution vendors comprise more than one-quarter of the total sample (26.4%), closely followed by those in the Regulatory and Compliance Management category (18.4%). This distribution of vendors reflects the category-composition of the wider UK market (see Figure 5.4). Importantly too, it supports a key research objective of the project by delivering a significant sample of respondents in the two focus categories selected for deeper analysis.

Figure 5.3 Breakdown of survey respondents by primary business area (n=125)

Question: *"Which of the following best describes your primary business area?"*

Source: UK RegTech Vendor Survey 2020 (City of London Corporation/RTA)



ESG	Environmental, Social, Governance
TaxComp	Tax Compliance
RCM	Regulatory and Compliance Management
FinCrime	Financial Crime
MIT	Market Integrity and Transparency
RRAC	Regulatory Risk Analytics and Calculations
GenComp	General Compliance
CIP	Cyber/Identity/Privacy
RR	Regulatory Reporting
RDIM	Regulatory Data & Information Management

As Figure 5.4 shows, the survey provides good coverage across the RegTech landscape, with consistent sample sizes in more specialised niches. For example, the Regulatory Risk Analytics and Calculations category, which accounts for 4% of the underlying sample. Furthermore, as Figure 5.4 shows, the survey coverage maps well to the wider RegTech population from the RegTech Associates database serving the UK market, albeit with a deliberate skew into the spotlight areas of Financial Crime and Regulatory and Compliance Management.

Turning to size bands, Figure 5.5 shows a representative split of survey respondents based on their number of full-time employees (FTEs).

RegTech vendor size was broken down into Large (those with more than 50 full time employees) and Small, those with fewer than 50 full time employees). As Figure 5.5 shows, there is a relatively even split between each group, with Large RegTechs comprising 43.8% of the sample and the remaining 56.2% representing Small RegTech firms.

Figure 5.4 Category of UK RegTech market (from survey sample) vs global RegTech population

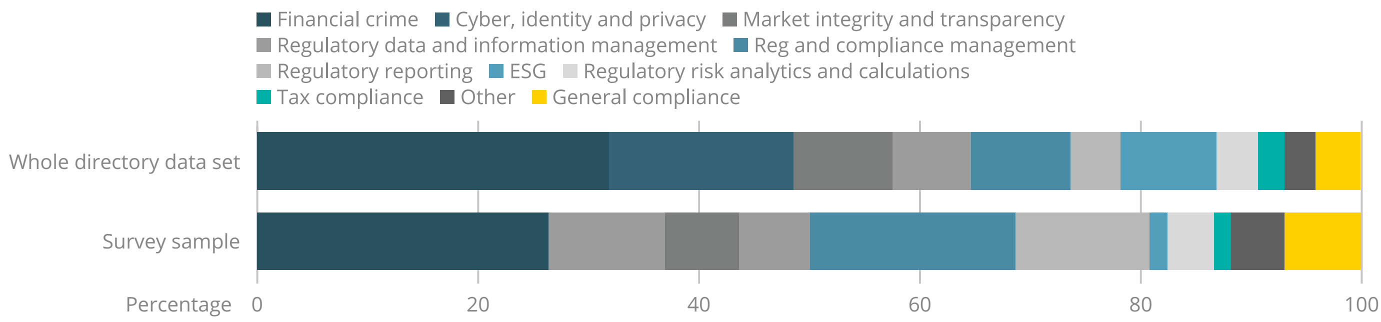
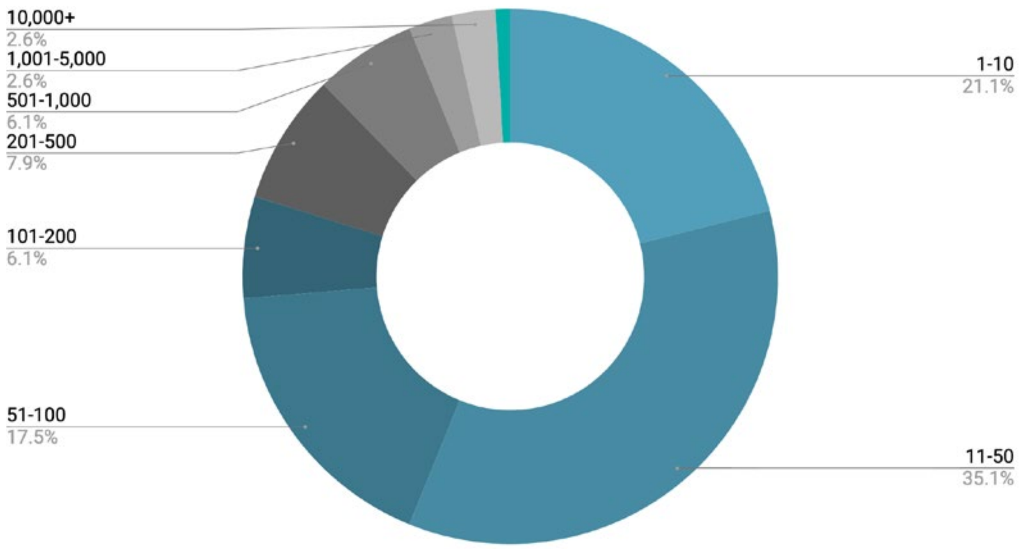


Figure 5.5 Breakdown of survey respondents by number of full-time employees (n=125)

Question: *"How many employees does your organisation have?"*

Source: UK RegTech Vendor Survey 2020 (City of London Corporation/RTA)



There was also a strong balance between UK-registered RegTech vendors and non-UK firms selling into the UK market, illustrated by Figure 5.6.

More than half of respondents (52.8%) were based in the UK, with the balance of firms (47.2% of the sample) divided across Continental Europe, North America (i.e. US & Canada), Asia Pacific and the Middle East & Africa (MEA).

Almost two-thirds (59.6%) of this non-UK contingent employed less than 10% of their total global workforce in the UK. However, 13.5% employed more than 20% of their worldwide FTE in the UK, of which 5.8% employed more than 50%, underlining the importance of the UK as a global hub for RegTech investment.

Closer to home, Figure 5.7 below shows the distribution of UK RegTechs (n=80) who responded to the survey. As might well be expected, there is a strong skew towards London (75.0%) and the South East (8.8%) as the base of operations for the majority of respondents (83.8%). The remaining one-sixth (16.2%) were evenly distributed around other parts of England and NI. However, the survey did not attract responses from Welsh or Scottish RegTechs.

Figure 5.6 Geographic distribution of survey respondents, HQ by global region (n=125)

Question: *"Are you headquartered in the UK? If 'No' in which country is your firm headquartered?"*

Source: UK RegTech Vendor Survey 2020 (City of London Corporation/RTA)

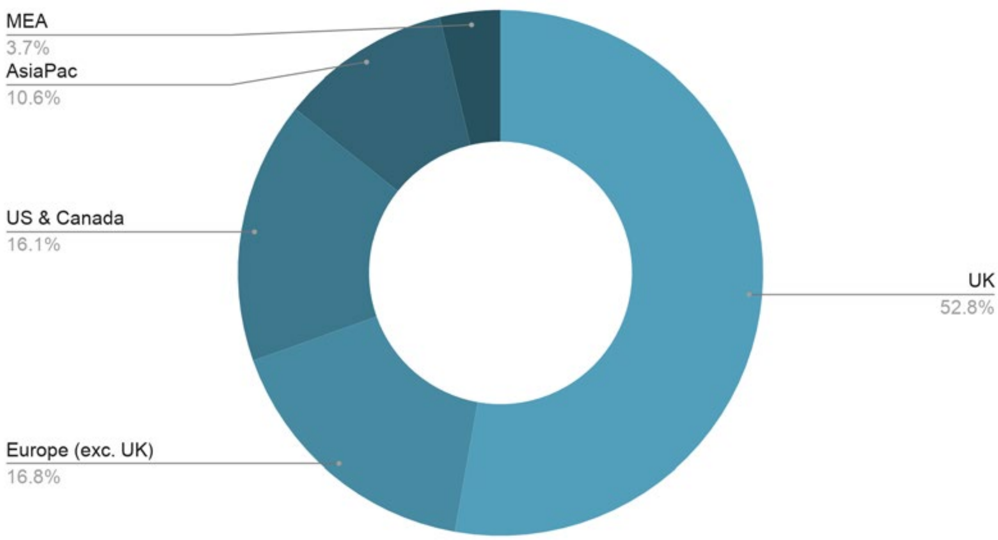
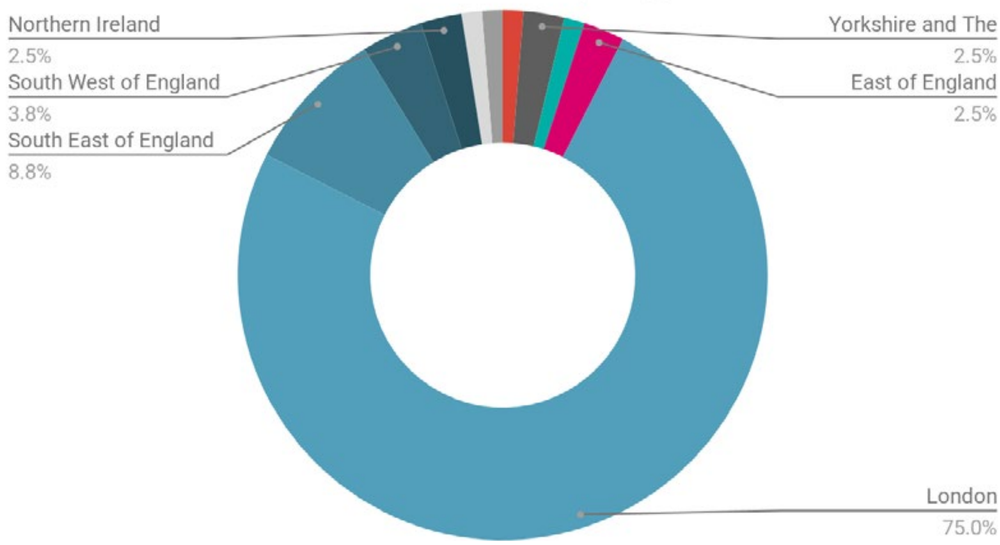


Figure 5.7 Geographic distribution of UK survey respondents, by region (n=80)

Source: RegTech Associates analysis of RegTech Survey responses



The survey also boasts a high number of respondents who are senior decision makers within their organisations. As Figure 5.8 shows, almost half (46.0%) of those who completed the survey self-identified as "Founder/CEO", with a further 11.2% describing their role as 'Other C-Suite'.

The survey responses received were drawn from all the key functional areas of these organisations, representing senior-level staff across sales, marketing, product development and strategy.

The sample also shows a good mix of product maturity within the respondent group. As Figure 5.9 shows, two-thirds of respondents (68.5%) are actively selling their products to market, with a client base of at least 10 institutions. A further one-quarter (27.5%) are drawn from a range of earlier stage firms with either a solid proof of concept or minimum viable product to scaling firms with 5-10 clients on their books.

Figure 5.8 Distribution of survey respondents by functional role (n=125)

Question: *"Which of the following titles best describes your role within the organisation?"*

Source: UK RegTech Vendor Survey 2020 (City of London Corporation/RTA)

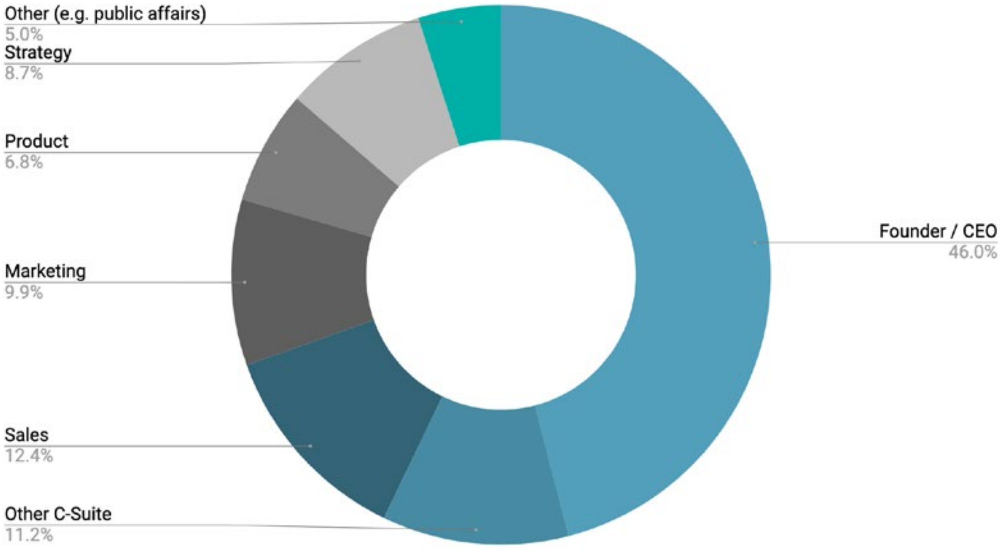
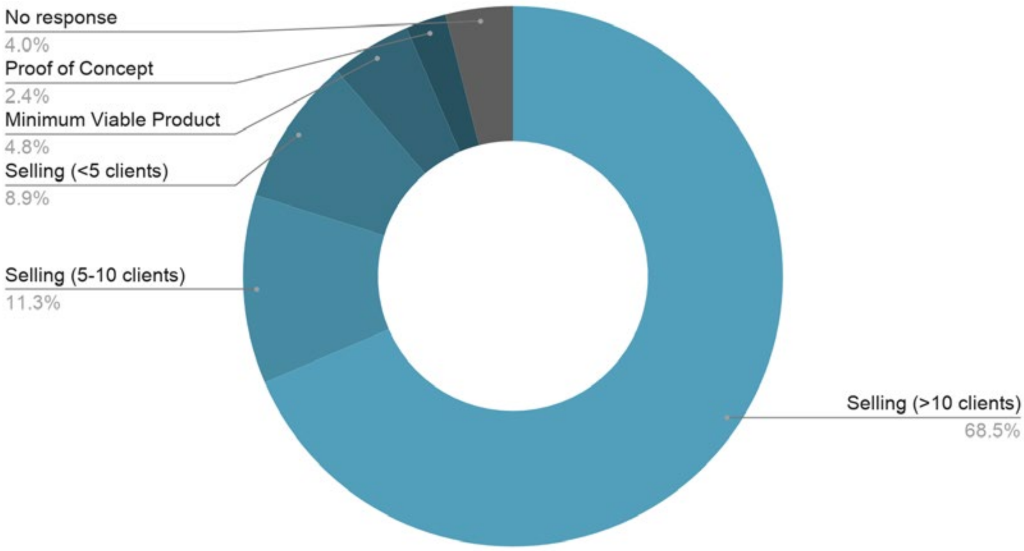


Figure 5.9 Distribution of survey respondents by product stage (n=125)

Question: *"At what stage is your product?"*

Source: UK RegTech Vendor Survey 2020 (City of London Corporation/RTA)



Qualitative fieldwork approach – roundtables

Roundtables were held to validate and support the interpretation of the interim survey findings (based on a moment-in-time sample of n=114) was presented to a roundtable group of RegTech vendors. Senior-level representatives from 14 global RegTech vendors participated comprising:

- 6 vendors sourced from the financial crime category.
- 8 vendors from a range of other RegTech categories such as CIP, regulatory reporting and general compliance.

Vendors were asked to review a set of early findings and provide their views *in particular* on the barriers to innovation (including regulatory barriers) and the international leading practices for enhancing competitiveness identified in the survey. Additionally, the vendor panels were invited to comment on an early set of draft recommendations that had been generated from the interim survey findings.

Firmographic characteristics of RegTech contributors – roundtable attendees

The roundtable sessions were attended by senior-level representatives from 14 vendors, with a balanced split between vendors from Financial Crime and non-Financial Crime categories, as shown in Figure 5.10.

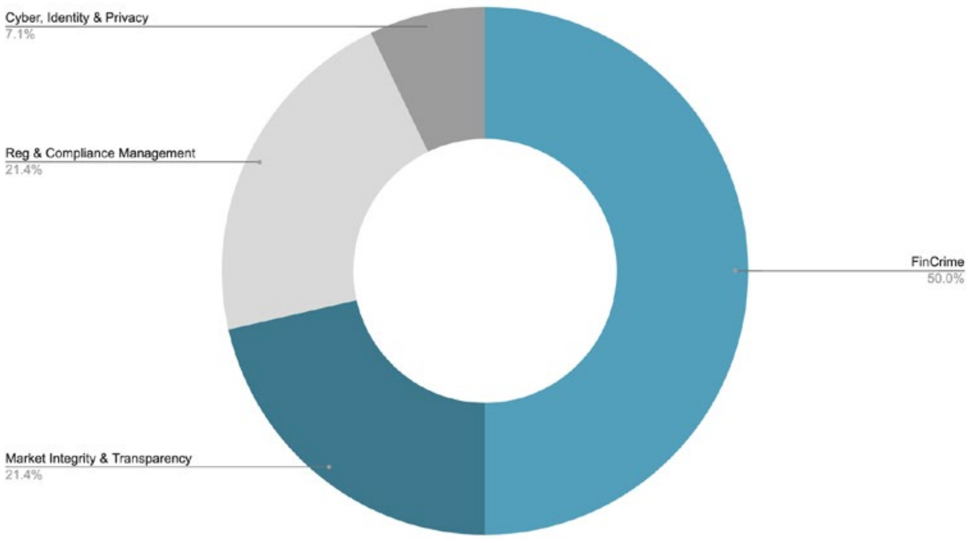
Qualitative fieldwork approach – institutional and regulatory interviews

Adding to the literature review, vendor survey and roundtables, a series of 13 semi-structured one-hour interviews were conducted with representatives from global regulators and financial institutions. Interviews were structured around a multi-layer core methodology, similar to that employed in the survey, and designed to test common and specific themes for each stakeholder group. These interviews were written up and analysed and were used as an important input into the interpretation of the rest of the primary fieldwork activity conducted for the report. Interviewees were selected from both financial institutions and regulatory authorities. Representatives with experience and knowledge of RegTech and innovation more generally were targeted, though much of the sampling was opportunistic. Interviews were held on an anonymised and confidential basis, were recorded with permission and transcribed to enable detailed analysis. The interviews contained some common questions for both regulators and financial institutions, these concerned the following broad themes:

- The role of interviewees and the nature of the teams they work for
- The level of RegTech experience possessed by the interviewee
- Their views on the existing UK regulatory framework

Figure 5.10 Distribution of vendor roundtable attendees by RegTech category (n=14)

Source: RegTech Associates Analysis of RegTech Virtual Roundtable Participants



- Their views on the current best and worst RegTech use cases
- Their views on the levels of adoption of RegTech in their local jurisdictions, as well as the balance of adoption across different financial services sub-sectors (*e.g. retail financial services, capital markets, insurance et al*)

To tap into the unique and valuable experience of each individual cohort (i.e. regulators and regulated institutions) different sets of tailored questions were used with each group.

Key questions posed to regulators included:

- Trends observed in RegTech adoption by the firms they supervise
- The successes and failures of measures taken to support the growth of RegTech in their local jurisdictions
- The extent to which they themselves made use of RegTech or SupTech (i.e. Supervisory Technology) as part of their day-to-day supervisory activities
- Their views on the anticipated future development of RegTech in their jurisdictions

In contrast, regulated institutions were asked a different set of questions concerning:

- Whether RegTech was a frequent topic of discussion with regulators
- The mechanisms they used to identify, learn about and assess new RegTech providers
- Their views on the barriers preventing them from doing more to adopt new RegTech
- Their own 'RegTech journeys' and future plans for implementing new solutions

Interview transcripts were subjected to thematic analysis, and where these themes overlapped with those of the survey and roundtables, they were compared and added to the survey findings to enrich the analysis and provide a more rounded view of the research themes.

Firmographic characteristics of RegTech contributors – interview respondents

In all cases, interviewees were selected based on their expertise in RegTech and a strong, well-founded point of view on compliance innovation.

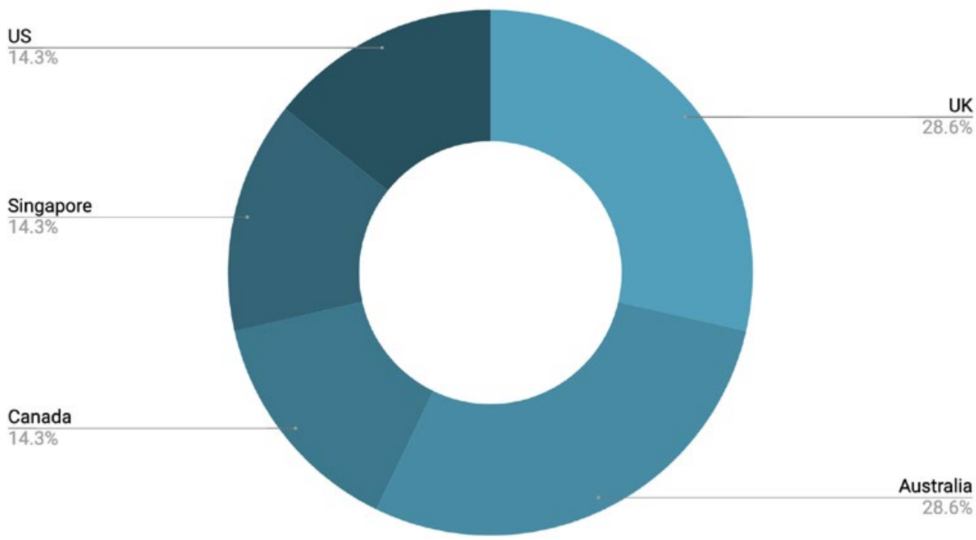
As with the survey, all interviews were conducted on the basis of strict anonymity. Consequently, the firmographic details that can be revealed within this report are necessarily more limited.

The interviews conducted with regulators included Heads of Innovation, RegTech Programme Leads and Heads of Policy from seven international bodies. Figure 5.11 shows the geographic distribution of regulatory interviewees.

Interviews with regulated financial institutions also drew on a worldwide sample of firms, from the UK, Europe and the US. Heads of Compliance, RegTech Programme Leads

Figure 5.11 Distribution of regulatory interviewees by geography (n=7)

Source: RegTech Associates Analysis of RegTech Regulatory Interview Participants

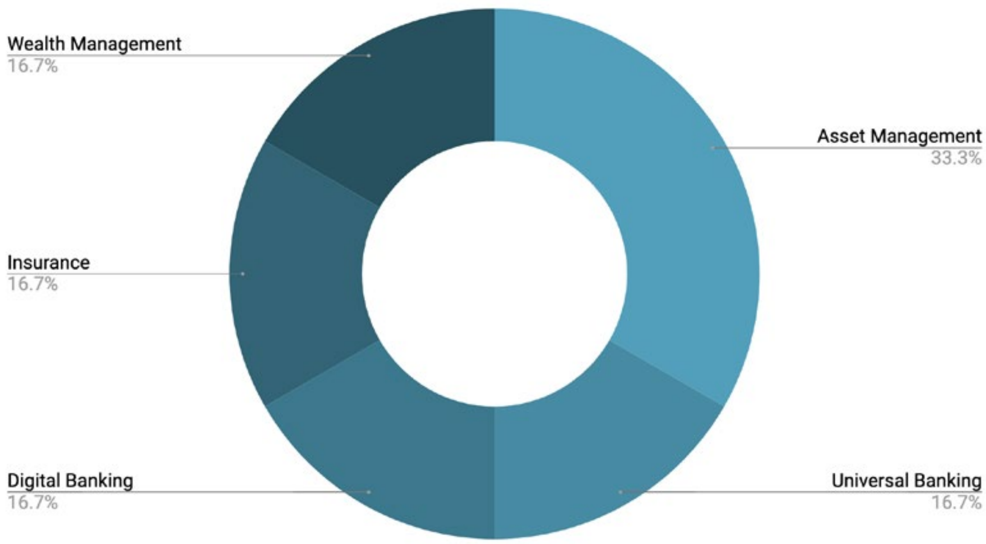


and Heads of Policy at 6 leading global financial institutions were interviewed. Figure 5.12 shows the distribution of interviewees by financial services sub-sector.

In sum, the analysis presented here demonstrates that this study is built on a solid and expansive methodology, and draws insight and inspiration from each critical group of actors in the UK RegTech ecosystem.

Figure 5.12 Distribution of institutional interviewees by financial services sub-sector (n=6)

Source: RegTech Associates Analysis of RegTech Institutional Interview Participants



Appendix 3 – References

Arner, D. W., Barberis, J., & Buckey, R. P. (2016). FinTech, RegTech, and the reconceptualization of financial regulation. Nw. J. Int'l L. & Bus., 37, 371.

ASIC (2021) ASIC's RegTech Initiatives 2019-20 https://download.asic.gov.au/media/5937756/rep685-published-20-january-2021.pdf (accessed January 2021)

Black, J. (2012) Paradoxes and failures: 'new governance' techniques and the financial crisis The Modern Law Review, 75(6) 1037-1063

Christensen, C. M., Raynor, M. E., & McDonald, R. (2015). What is disruptive innovation. Harvard business review, 93(12), 44-53.

Cœuré, B. (2020) Speech: Leveraging technology to support supervision: challenges and collaborative solutions Bank of International Settlements https://www.bis.org/speeches/sp200819.htm (accessed January 2021)

Deloitte (2018) The case for artificial intelligence in combating money laundering and terrorist financing: A deep dive into the application of machine learning technology https://www2.deloitte.com/content/dam/Deloitte/sg/Documents/finance/sea-fas-deloitte-uob-whitepaper-digital.pdf (accessed January 2021)

Duff & Phelps (2020) Global Regulatory Outlook 2020: The Regulatory Outlook Evolves https://www.duffandphelps.com/insights/publications/compliance-and-regulatory-consulting/global-regulatory-outlook-2020 (accessed January 2021)

FCA (2015) FS16/4 Call for Input: Supporting the development and adoption of RegTech available at https://www.fca.org.uk/publication/feedback/fs-16-04.pdf (accessed January 2021)

FCA (2017) Distributed Ledger Technology Feedback Statement on Discussion Paper 17/03 https://www.fca.org.uk/publication/feedback/fs17-04.pdf (accessed January 2020)

FCA (2020) Fostering innovation through collaboration: The evolution of the FCA TechSprint Approach https://www.fca.org.uk/publication/research/fostering-innovation-through-collaboration-evolution-techsprint-approach.pdf (accessed January 2021)

FSB (2020) The Use of Supervisory and Regulatory Technology by Authorities and Regulated Institutions: Market developments and financial stability implications

HKMA & KPMG (2020) Transforming Risk Management and Compliance: Harnessing the Power of RegTech https://www.hkma.gov.hk/media/eng/doc/key-information/press-release/2020/20201102e3a1.pdf (accessed January 2021)

HM Treasury Spending Review (2020) https://www.gov.uk/government/publications/spending-review-2020-documents/spending-review-2020 (accessed January 2021)

KPMG (2020) Pulse of FinTech H1 2020 https://assets.kpmg/content/dam/kpmg/xx/pdf/2020/09/pulse-of-fintech-h1-2020.pdf (accessed January 2021), https://member.regtechanalyst.com/regtech-investment-in-h1-2020-defies-expectations-with-growth-in-funding-despite-economic-uncertainty/ (accessed January 2021)

Lewin, S., (2016). Regulated organizations: responding to and managing regulatory change. The London School of Economics and Political Science.

Maxwell, W. J., & Bourreau, M. (2014). Technology neutrality in internet, telecoms and data protection regulation. Computer and Telecommunications Law Review, 31, 1-8.

Monetary Authority of Singapore (2021) Technology Risk Management Guidelines https://www.mas.gov.sg/-/media/MAS/Regulations-and-Financial-Stability/Regulatory-and-Supervisory-Framework/Risk-Management/TRM-Guidelines-18-January-2021.pdf (accessed January 2021)

Palmié, M., Wincent, J., Parida, V., & Caglar, U. (2020). The evolution of the financial technology ecosystem: An introduction and agenda for future research on disruptive innovations in ecosystems. Technological Forecasting and Social Change, 151, 119779. P.4

Schizas, E., McKain, G., Zhang, B. Z., Garvey, K., Ganbold, A., Hussain, H., ... & Yerolemou, N. (2019). The Global RegTech Industry Benchmark Report. Available at SSRN 3560811

TechNation (2020) UK Tech for a Changing World: Tech Nation Report https://technation.io/report2020/#forewords (accessed January 2021)

Thomson Reuters (2020) Cost of Compliance: New decade, new challenges.

Treleaven, P. (2015) Financial Regulation of Fintech Journal of Financial Perspectives, 3(3)

UK Government Office for Science (2015) FinTech Futures: The UK as a World Leader in Financial Technologies available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/413095/gs-15-3-fintech-futures.pdf (accessed January 2021)

Research team

RegTech Associates conducted this research in partnership with the City of London Corporation. The team was led by Dr. Sian Lewin, Co-Founder and Head of Client Delivery and Research. Senior Research Associate, Rob Stubbs was ably assisted by Research Analysts Nathan Parker and Jack Rowbotham. The City of London Corporation project team was led by Wendy Pham, Senior Policy Adviser.

RegTech Associates is a research company, and we use our analysis to provide strategic insight and advice to our clients. We bring all sides of the market together to help RegTech vendors grow and regulated firms manage compliance more effectively. Founded in 2017, RegTech Associates is a privately held company based in London. Our experienced team have extensive industry and regulatory knowledge and we often collaborate with leading regulators to foster dialogue and industry collaborations.

Other initiatives

This research project was running at the same time as the FinTech Strategic Review, headed by Ron Kalifa. Given that the City of London Corporation was also heavily involved in this review, the City of London Corporation project team ensured that sufficient levels of knowledge were shared between the two projects to allow any areas of overlap to be appropriately considered.

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The City of London Corporation and RegTech Associates would like to thank all of those who participated in and supported this research, namely

- The RegTech vendors who took the time to complete the survey and contribute to the roundtables
- The interview participants from financial institutions and regulatory authorities who so generously gave their time and knowledge to the project
- The wider teams at the City of London Corporation for their assistance and input throughout the course of the project
- The representatives of the key stakeholder groups for this research – the FCA, Bank of England and HM Treasury – for their insights that have assisted us in developing our findings and recommendations.

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