

Breaking down global RegTech barriers

Enabling the Financial Services
ecosystem to deliver trusted solutions

DevOps



FinTech



Foreword

The Financial Services regulatory framework has been extended beyond recognition from what it was a decade ago. Today, the shape and scale of the regulatory issues we need to address as a result of the coronavirus pandemic (COVID-19) are changing again. We believe that with this global landscape overhaul, we will see more than ever the need for good RegTech to achieve better outcomes.

“RegTech” became a hot topic with Financial Services regulators five years ago, to describe the adoption of technology innovation that can help achieve the complex and challenging policy objectives set for the regulators and regulated. It is an area Fujitsu has been building an active interest.

New technology can help regulators and regulated reset priorities, rethink strategies and help ease the burden of compliance. The purpose of the paper is to further the discussion and debate on the evolution of the RegTech sector and create a way of reviewing ongoing progress. We hope that it will allow both the public and private sector to consider what capabilities are required to achieve trust in a digital age.

Our analysis shows that the sector has made a tremendous amount of progress in a very short period and that while there are barriers, we have a view on how to overcome them. As the industry evolves following this most recent crisis, we hope to reframe and refocus efforts on building a collaborative community with a sustainable and scalable approach to delivering trusted solutions.



PJ Di Giammarino
CEO JWG Group
Chairman of the RegTech Council
and Co-author

What is RegTech, FinTech, SupTech?

As the regulators and regulated have digitised their businesses over the last five years we have seen disruption to what was once considered ‘Banking Technology’.

This has led to confusion about some basic terms and definitions and relationships amongst policy makers, academics and practitioners alike, with ‘Tech’ being attached to various nouns.

- **RegTech** (Regulatory Technology) has many definitions but is most widely accepted as the use of emerging technologies to make the writing, communications, interpretation, implementation and monitoring of regulations more effective and efficient. In this sense, RegTech is focused on enabling compliance processes to be better, either through digitising existing processes, (e.g. producing regulatory reports), or the redefinition of how the controls are applied.
- **FinTech** (Financial Technology) is generally recognised as the application of digital and technology-enabled business model innovations in the financial sector which aim to compete with traditional financial methods in the delivery of Financial Services. Such innovations typically disrupt existing industry structures.
- **SupTech** (Supervisory Technology) is defined as the use of innovative technology by financial authorities to support their work. This typically encompasses big data architecture supporting advanced analytic applications.



Executive Summary

During the last decade the Financial Services sector has been asked to step-up significantly. The regulatory framework has been extended beyond the core business of money and markets encompassing more systemic goals of full transparency and protection of the system. It is no longer acceptable for \$trillions to be laundered, and politicians are no longer tolerant of operational banking failures or poor risk reporting.

Today a RegTech market with hundreds of global entrants has developed and is rapidly maturing enabling Financial Services institutions to remain in compliance with the vast set of regulatory rulebooks.

As we start a new decade there is no sign that regulatory rule changes will start easing up. In fact, with hundreds of live regulatory changes currently in flight, the potential for RegTech to enable firms to govern, share data with regulators and overcome this constant change is enormous.

That said at the end of last decade there was growing acceptance that RegTech, is a market that requires more focus to grow to its full potential:

1. Regulatory rules are still analogue in nature inhibiting digitisation.
2. Recognition the regulated and regulatory authorities need to work together to define new models of regulation.
3. Technology use in RegTech requires supporting ecosystems, standards and governance to enable adoption.

The sector is going to have to work collaboratively to create safe spaces or 'sandboxes' for the experimentation, iteration, testing and scaling of workable solutions. However, transformation is not easy and RegTech requires a fundamental reengineering of many public and private institutions in parallel.

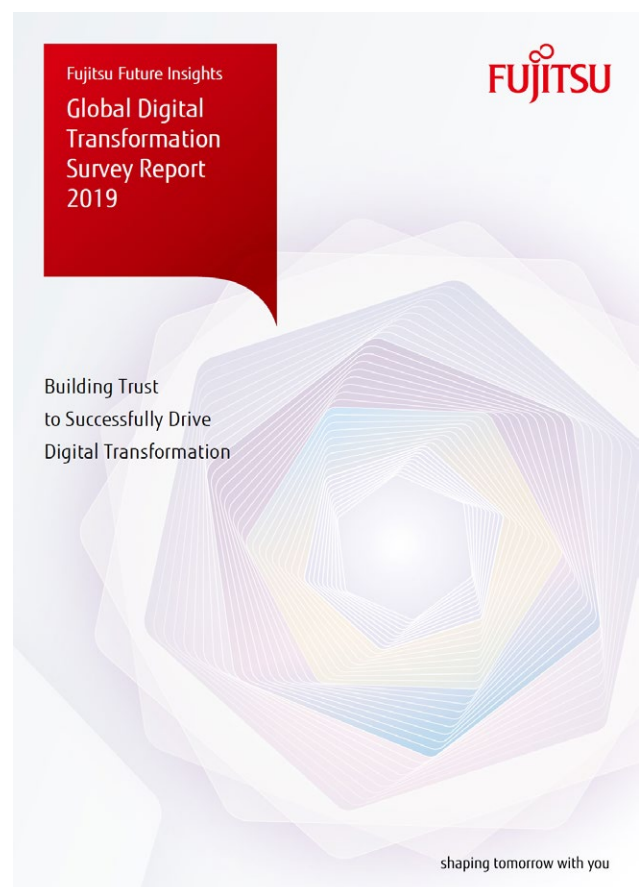
The Regulatory Obstacles to Financial Innovation (ROFEIG) report finds that between 2008-2016, there was a 500 percent increase in regulatory changes in developed markets, highlighting the need for scalable, reliable and efficient RegTech solutions.

Juniper Research, found that over the next few years RegTech spend will grow by 48 percent per annum – rising from \$10.6 billion in 2017 to \$76.3 billion in 2022.

Taking inspiration from Fujitsu's Global Digital Transformation Survey Report 2019¹ that interviewed 900 business leaders across 9 countries, we created a capability model to describe the maturity of the RegTech sector for regulators, regulated and vendors.

Unsurprisingly, we found many of the capabilities to be nascent. In discussions with senior stakeholders across the industry we were impressed with the positive support from firms and regulators to drive change and the adoption of RegTech across the industry.

We conclude that across all maturity dimensions there is good cause for confidence and improvement over the next five years.



¹ https://www.fujitsu.com/downloads/GLOBAL/vision/2019/download-center/FTSV2019_Survey_EN_1.pdf

A retrospective look at the RegTech market

In 2015 the Financial Conduct Authority (FCA) issued a Call for Input² to seek views on the role of RegTech within the UK Financial Services sector, and how the FCA as a regulator could support this emerging market. It is important to bear in mind the relative immaturity of RegTech at that time and how much progress has been made globally in the past five years.

Nick Cook, FCA Director of Innovation, observed³ in 2019

"The RegTech market isn't fully able to service our needs at this stage. This is not a criticism of the market, like most other markets it responds to demand with supply.

I don't think we, collectively, have been sufficiently vocal about our needs and our desires to modernise and our appetite to adopt new solutions. Without this clarity, we have not and will not be identified as a meaningful and sufficiently attractive target market for the diverse players in the RegTech ecosystem."

Commenting on progress in 2019 Jo Ann Barefoot, CEO Barefoot Innovation and RegTech commentator, put it well noting that⁴

"In financial regulation, we've had at least two wicked problems, pretty much forever. One is that finance often hurts consumers, either by not allowing them into the system or by harming those who do receive services, such as burdening them with too much debt. The second problem is that, generally speaking, financial regulation can't be made both highly effective and efficient at the same time. There's always been a trade-off between spending more to get better outcomes or cutting costs but compromising results. And, even more deeply, some aspects of financial regulation are actually both expensive and ineffective, and arguably getting worse."

These comments lead the sentiment across the sector that, after five years of collaboration with regulators across the globe, it is now clear that to be successful, the Industry will need to agree 'what good RegTech looks like' in the short, medium and long term.

So, after five years of driving RegTech forward, regulators are stepping back and rethinking their approach and strategies to effective regulation. Digitisation of the rule books has been welcomed by the Financial Services sector and also provides a platform for growth of RegTech providers.

We have been, and still are in a high change regulatory environment and where the whole industry needs to be at the table to get clarity on the priorities. We have also been used to regular regulatory initiatives and a high degree of political uncertainty leading to a narrower focus on solutions.

However, consumer expectations are shifting to digital and the regulators' expectations along with them, changing the way interactions happen across the financial sector locally and globally. In addition, new technologies (e.g. Privacy Enhancing Technologies) have the potential for change in ways not envisioned by regulatory policy makers while the at the same time, legal frameworks and codes of ethics for AI and data are beginning to be examined which have the potential to disrupt traditional regulation.

RegTech can help firms avoid fines and new censures now possible under the UK Senior Manager and Certification Regime (SMCR) as well as similar regulations in other jurisdictions. In 2019:

- The FCA issued a series of Dear CEO letters warning firms about the gaps in their approaches to compliance.
- The FCA fined UBS (£27.6m) and Goldman Sachs (£34.3m) for reporting failures.
- The Prudential Regulatory Authority (PRA) fined Citi Group (£44m) for reporting failures.
- The US Commodity Futures Trading Commission (CFTC) fined BGC Partners (£3m) for poor policies and procedures.
- The Financial Industry Regulatory Authority (FINRA) reported in its 2019 assessment significant issues relating to digital communications, Anti-Money Laundering (AML), cyber security, Direct Market Access (DMA), risk management and more.

The stakes are high for firms and better Regulatory Technology can help.

² FCA Call for input 'Supporting the development and adoption of RegTech' 23 November 2015

³ Nick Cook speech to Central Bank Executive Summit, 4 June 2019

⁴ Barefoot Innovation Group, 8 August 2019, 100th episode the race to regulation transformation marathon and sprint

Because of this, RegTech has the potential to help both firms and regulators with implementing new policy initiatives in ways not historically considered. For example, the European Commission⁵, U.S. Commodity Futures Trading Commission (CFTC)⁶ and the UK Bank of England's⁷ reports have revealed, bold new plans are underway to fill the gaps in the reporting infrastructure. Similar efforts are underway with financial crime and rule book modernisation.

These technology policy programmes have been gaining momentum for a couple of years now and are hitting their stride just as we re-examine fundamental market rules for MiFID III and Anti-Money Laundering. The best and brightest business and technology strategists should be tasked with helping to shape the path ahead.

Further, the use of RegTech sprints, and other collaborative efforts over the past 5 years, have also taught us the importance of using technologies to address shifts in obligations, policies and controls. These sprints have allowed technology innovators, firms and regulators to work on specific use cases and showcase the potential technology has to reduce regulatory complexity but also generate thinking on and influence of, policy and solutions across regulation.

Whether we are looking at Anti-Money Laundering (AML) typologies, regulatory reporting, common data models, risk management or vulnerable consumers the RegTech story remains the same - 'there is potential to reduce current complexity'.

Across regulators and regulated there is a new imperative: sharing the common interpretation of what rules mean in practice.

This is done through common external standards like, Banking Industry Architecture Network (BIAN) or Financial Industry Business Ontology (FIBO), which allow the regulators, firms and service providers to align expectations.

The International Swaps and Derivatives Association's (ISDA) Common Domain Model (CDM) was endorsed by the Bank of England 2019 report. It is not tech specific; it is trying to get at the business data flows, and how people work and control risks within the industry, a key enabler for RegTech to mature.



5 European Commission Results of the fitness check of supervisory reporting requirements in EU Financial Services legislation 7 November 2019

6 CFTC Announces LabCFTC Accelerator 28 June 2019

7 Bank of England Future of Finance report June 2019

A future view for the RegTech market

Section 2 provided a review of where RegTech has come from and an insight of its potential, but at Fujitsu it's about how we quantify this position and set out the steps necessary to enable RegTech to fulfil its potential.

Assessing Maturity

Through surveys we have conducted we have identified five key organisational capabilities which are applicable to assess RegTech market maturity; Leadership, Ecosystems, Empowered People, Culture of Agility and Value from Data.

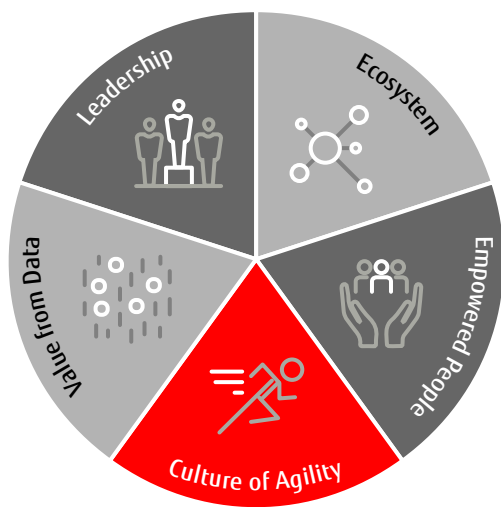


Figure 1: Key Organisational Capabilities

By building a Capability Maturity Model (CMM) for each of the five capabilities Fujitsu has been able, through informal engagement with Financial Services firms, regulators and vendors to build a picture of the current maturity as well as a target view of where we think the market would like to be in five years' time.

This is not intended to be a definitive statement on market maturity, instead it is a simple way of assessing where the market is and how it is progressing. The responses received were interpreted to derive two points for maturity of each capability; one for today and a second to provide a view of a future target in five years. The results of which are shown in the following diagram.

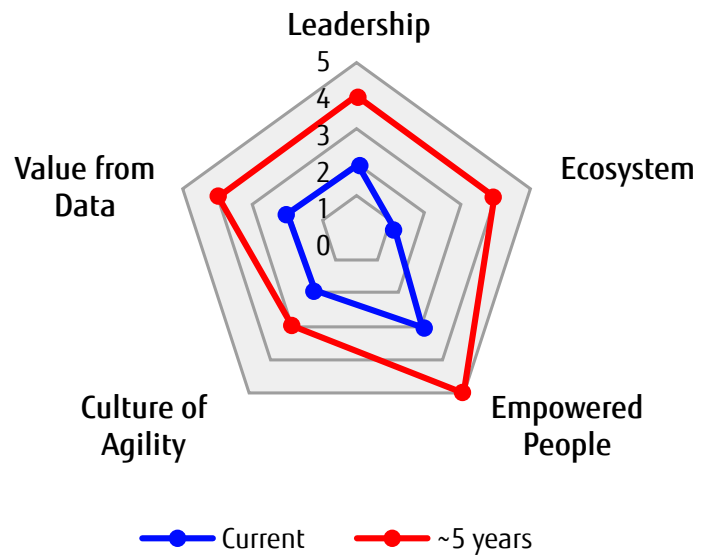


Figure 2: RegTech Market Maturity

Market Maturity - The numbers in the chart relate to the assessed level of maturity based on a score of 1 "Initial" and 5 "Optimised". A full definition of the model can be found in Appendix A.

What is clear from the assessment is the market is still in its infancy, but with significant potential for growth. Though there are barriers to RegTech fully achieving that potential, there is positive support from both regulators and regulated to drive change and adoption of RegTech across the industry. For each of the capabilities Fujitsu has observed there is already activity underway to improve maturity.

A statement on current maturity

With the exception of Empowered People, across the remaining 4 capabilities, the RegTech Market is rated 2 or below. The consistent view from all interviews is there is increasing market support for RegTech (this is also reflected by increased year on year investment), but that it is still at a point where the market requires effort by regulators and firms to keep it moving forward.

Empowered People scored at 3. There is acknowledgement that regulators and firms need to innovate across regulation, and innovation needs Empowered People to drive this forward. The score of 3 highlights the emergence of RegTech and innovation teams within regulators and firms as well as a wider increase in RegTech industry bodies with empowered representation from all parts of the industry.

This momentum in Empowered People is also seen through the increase of Proofs of Concepts (PoCs) and collaboration around key regulatory challenges highlighting the applicability of technology to regulatory challenges. Last, there is a view that Empowered People is nearing a position of maturity where independent self-motivating teams are directly integrated into organisational structures, but it is accepted in other areas it still needs to mature to sustain or grow influence.

Leadership and Culture of Agility both scored 2. For these two capabilities, the assessment highlighted that while progress has been made, it could have gone further faster.

For Leadership our opinion is that while there are strong influencers, this capability is confined to a small, interlinked group, rather than a truly globally led movement. Within Culture of Agility, there is a need for more standards and a cohesive long-term plan, but current lengthy adoption processes by firms and lack of digital sandboxes⁸ is stifling RegTech's growth. This links back to score of 2 on Leadership where there is a need for more to be done to corral the industry and drive forward the value of RegTech as an enabler for business growth.

Ecosystems and Value from Data scored 1. Arguably, both of these are the hardest to mature as they rely heavily on the other capabilities to mature first. The lack of identifiable Ecosystems is a key inhibitor of growth for the RegTech market with little tangible capability (technology, business models, environments, standards and data) provided by regulators or firms to enable vendors to operate or collaborate beyond simple point partnerships. This gap has been highlighted in recent months by the FCA⁹.

The low maturity score for Value from Data is mainly due to the lack of interoperability and sharing across systems, firms and jurisdictions. Wider, the lack of holistic data standards and frameworks to enable collaboration and data exploitation is seen as a current gap and reflected in the low maturity score.

A statement on target maturity in five years

Across the board there is an optimistic outlook for RegTech with the view that the market will mature in all areas. In all cases there is the belief that the market will grow and importantly, build into the normal "Business as Usual (BAU)" way of working.

Empowered People scored the highest at 5. Primarily due to the view RegTech will become part of the normal BAU way of working. Achieving this is expected to happen in line with firms' digital transformation, and a global recognition that digital transformation and digitisation of regulation needs to be a joined-up initiative. But, to truly enable Empowered People requires visibility at board level within regulator and regulated firms.

Leadership, Value from Data, and Ecosystems all score 4. For Leadership and Ecosystem, the high scores are due to growing influence, understanding and interest globally into systemic regulatory challenges and view that RegTech is part of the solution. For Ecosystems specifically this is where there is the most significant maturing of the market.

There is the positive view that the number of RegTech solutions will grow and Ecosystems develop, based on business models of collaboration and adoption of industry standards, addressing the current and future regulatory thematic issues. This will drive the RegTech market maturity forward at a global level.

In parallel Leadership is seen as developing beyond key influencers to create a global community focused on the continuous development and simplification of regulatory solutions and adoption of emerging technology.

Maturing Value from Data is linked to Ecosystems and Leadership supported by the growth of Big Data and Analytics, Artificial Intelligence (AI) and other tools. A greater openness between firms and regulators including across jurisdictions in sharing data will also enable greater value to be derived, which should in turn simplify the operational processes of regulatory compliance.

Culture of Agility scored lowest at 3. Primarily the low score was due to the view that global priorities will continue to be set on a more reactive basis. As such the full potential of the underlying capability of RegTech providers will also remain reactive rather than developing holistic solutions. Further, standards are not easily agreed, and this will continue to be a barrier to creating a truly agile market.

⁸ There are many regulatory sandboxes which provides access to regulatory expertise and a set of tools to facilitate testing. A Digital sandbox is a step beyond this by providing data rich technical environments for vendors to demonstrate proof of benefit of their solution.

⁹ Speech by Nick Cook Director of Innovation Meeting the Pace of Technological Change 6th November 2019

Key Fujitsu observations

When looking across the assessment the key question for Fujitsu is what should we learn and what should we do? To answer this we need to scratch a bit further under the surface and draw conclusions that we can then address.

There is a direct link between Leadership and Empowered People. The concern in Leadership is it currently relies on key individuals to drive forward, so runs the risk of stalling if these leaders step back or move on. To mature, Leadership needs to be within the collective not the individual. When paired with Empowered People there is the trend that without cohesive leadership RegTech remains outside of the mainstream within organisations, inhibiting its ability to deliver real value.

When you turn to view Ecosystems, this is not a mature market, but partly also, there is no common understanding or structure to support such an Ecosystem. This therefore relies on an organic rather than planned development of Ecosystem. Specifically, this is seen as the area which needs to take the largest leap if the overall market is to mature.

Underpin this with a lack of standards or industry bodies to enable co-operation restricts the Ecosystem. There is though forward momentum and bodies, like the UK RegTech Council, are enabling the beginnings of an Ecosystem by bringing the regulator and regulated together.

The role and basis of the regulator and how they can promote RegTech also has a significant impact on the development of Ecosystem e.g. the Monetary Authority of Singapore (MAS) funds RegTech start-ups, Abu Dhabi Global Markets (ADGM) as is Spain, are building sandboxes to facilitate RegTech procurement or innovation. In contrast the FCA is bound by anti-competition law so cannot promote any single RegTech solution. This difference of approach means Ecosystems without Leadership and guidance will form in an uncoordinated fashion.

Reviewing Culture of Agility links with Leadership, Empowered People and Ecosystems, with the manifestation being the RegTech Market is less agile than we would hope. Technologically Cloud enables innovation but security, procurement hurdles and a lack of defined standards mean time to value is long.

A further lack of agility is found in the relationship between regulator and vendors. Regulation change is slow to react to market changes meaning vendor solutions are constantly solving yesterday's regulatory problems. An agile market needs to be able to respond quickly to changing regulatory priorities, this requires more digitally enabled regulators.

When looking at Value from Data, a constant constraint is the lack of accessible data sets against which proof of capability can be made. Not only does this slow the growth of RegTech Ecosystems and innovation, it also requires specific customisation of solutions for each organisation and their data.

As RegTech is developing globally, there is the need to develop data frameworks which support inter-firm and jurisdiction sharing. Also to mature, regulators need to move from analogue to digital regulation where this digitisation enables flexibility and agility. But with tens of thousands of pages of financial regulation, data sharing will not be quick and needs significant consideration.

What is clear from our assessment is that RegTech is growing based on year on year investment, but unless there is greater uptake from firms, there remains a question mark over its long-term sustainability. The negative impact of that may mean RegTech won't be able to address some of the challenges to Money Laundering, fraud, support of vulnerable consumers or ultimately reduce the operational cost of regulation.



Enabling the industry to meet its potential

The earlier sections of this paper have provided a retrospective view of RegTech and an industry assessment of core capabilities necessary to mature the market including points as to what, why and in part how can they be improved.

The debate on RegTech until now has focused on adoption and building momentum, but aligned to what priority – Reporting? Anti-Money Laundering? Vulnerable consumers? The list is endless.

Moving forward to enable RegTech, the short-term focus should be on proof of concepts while longer-term, investment in the wider data sharing will deliver a better platform as well as key regulatory priorities quicker and more effectively.

For the next phase of RegTech specifically, Fujitsu believe there are five primary barriers inhibiting it reaching its full potential, and by overcoming these the core capabilities and maturity of the RegTech market will be unlocked, enabling the opportunity the FCA saw back in 2015.

- 1. Lack of a Framework of Value:** The market is growing, and investment is increasing in RegTech start-ups, based on potential and less so on tangible impact. For the value of RegTech projects to be effectively compared, a common suite of metrics needs to be developed that tie the performance of individual initiatives to long-term strategic aims of firms and the Financial Sector thereby making it possible for a RegTech firm to tangibly demonstrate the value they bring.
- 2. Lack of Collaboration:** For RegTech to be successful, digitisation of regulation requires a new level of collaboration between not only regulators and the industry, but also between large and small firms, and between buyers and vendors. Building this collaborative federation will enable the industry to move in step towards establishing a common basis for RegTech development that is efficient and resilient enough to provide a solid foundation for future investment while not compromising the participants.
- 3. Next Generation Enabling Platforms:** Technology is moving at incredible pace with new capability constantly being delivered. RegTech harnesses this, but it needs access to supporting technology to trial, test and prove new solutions. These environments need to be safe, secure and resilient, but also flexible enough for a range of participants, their requirements and the different stages of their maturity.

- 4. Knowledge, Skills and Complexity:** It is a well-worn mantra that the lack of the right, up-to-date skills inhibits progress. RegTech is no different but has its own nuances. Not only is industry domain knowledge critical, but it is also necessary to understand the detailed regulatory processes and how they differ across regions. Layer the fact that the myriad of new regulation shows no sign of abating, then add legal, data privacy and tax considerations, makes it a complex environment.
- 5. Digital Transformation Plan:** Digital transformation across supply chains in the Financial Services sector is complex. Digital native RegTech firms do not have the inherent baggage unlike the large organisations they are supplying, making adoption slow and frustrating. This needs to change with trust and integrity across the supply chain improved. Making this improvement viable requires a digital transformation plan for the financial sector starting with the digitisation of existing and future regulatory policy.

We may be five years in but realistically we are just at the beginning of managing the process of deriving more value from our regulatory interactions with technology to meet society's needs.

We have seen there is a desire to improve the agenda from both regulators and firms, but this is just part of the story. Addressing these barriers will take time, effort and a shift of trust within the sector, but as regulation continues to evolve and we become a more global economy with greater access to financial products, our regulatory processes will have to change.

Firms and regulators can only do this in partnership with others – their sub-national or national governments, universities and the private sector. With leadership, we can tap into the wealth and positive enthusiasm for RegTech to provide a safer financial sector for all.

In conclusion and how can Fujitsu help?

Fujitsu's view is that through the development of innovative technology within the public and private sectors we can reduce complexity and enable wider business models which support broader public good, reduce consumer detriment and engender trust.

Financial regulation is a complex business, but the key areas we have highlighted, if focussed on in a progressive manner, can make significant positive changes to our regulatory landscape. There are significant barriers, but at the same time there is even greater enthusiasm to make this market successful.

A concerted determination will be required over the next 5 years to embed RegTech as a business as usual way of providing regulatory compliance and reducing consumer harm.

At Fujitsu this resonates with our core value of Trust and our approach to digitisation. When looking at maturity we see four key areas we feel enable us to contribute to making a difference in the RegTech market.

1. A proven track record with global reach. In both the public and private sectors, we have a proven track record with a deep understanding of global market dynamics enabling innovation and a better response to emerging digital technologies. Fujitsu has a record of accomplishment of helping to build ecosystems and matching services around industry verticals, such as our "Accelerate" programme that originated out of Japan. And in Edinburgh we are starting a FinTech and RegTech Venture Builder, "Soderatu" ("nurturing", "developing", "growing") that fast-tracks innovation and collaboration and connects organisations with the necessary expert support.

2. A vast and diverse network of skill and relationships. It was said by the FCA at their AML Tech Sprint in May 2018 that you 'need a network to defeat a network', Fujitsu fully endorse this. Our network not only includes our own and our partners' extensive technology and research capabilities, but also academia, public bodies, think tanks, and advisory councils.

We are constantly leveraging this network to develop our own thinking to help solve problems, influence direction and help ensure that we all can collaboratively converge on what "good looks like".

Specifically, for RegTech, it is more than just technology, it is reliant on policy supporting technology, and at Fujitsu we have been using our network to help bring these parts together, be it with digital identities in Estonia, Anti-Money Laundering typographies in Spain or Blockchain in Japan.

3. Long term sustainable co-creation and trust. There is no silver bullet to maturing the RegTech market; it is a long-term strategy. RegTech requires the approach of the creation of long-term partnership and trust between public and private sectors. With this expansion comes complexity and an increasing challenge of who decides what ethically good behaviour is. Fujitsu see as part of the solution, creation of long-term relationships founded on trust, leading to co-creation of ecosystems to help firms and public bodies protect the trust they have from their customers.

4. Realising the potential of true Digital Transformation. From other recent research conducted by Fujitsu¹⁰ Financial Services leaders are the most likely of any sector to say that their organisation has experienced radical change in the last five years (61%).

- 71% of leaders said technology is vital to their future success but 56% are worried they may miss out because they have not planned radically enough.
- While 49% of consumers believe that technology has positively impacted Financial Services, with online banking a clear winner, but nervousness around the use of data remains a key concern.

Financial Services has invested in technology to address primary pressures, however there is increasing business justification to tackle some of the deeper issues around regulation, to deal with legacy systems and processes that are holding back true transformation. Fujitsu has been helping Financial Services firms deliver and gain value from digital transformation, while also maintaining the level of trust consumers are looking for.

Fujitsu sees the value in RegTech and the potential for it to create significant benefit in tomorrow's regulatory landscape. We urge that you join with us on this journey; start-ups, technology partners, Financial Services firms and regulatory bodies, so collectively we can support the broader public good, reduce consumer detriment and engender Trust in Financial Services.

¹⁰ Driving a trusted future in a radically changing world
<https://www.fujitsu.com/uk/microsite/trustedfuture/index.html>

Appendix A

The maturity model used for the basis of assessing maturity of the RegTech market within this paper is shown below. The scale is 1 – 5 with formal definitions on 1,3 and 5. Scores of 2 or 4 are used where the reviewer is not confident that maturity falls into a defined category.

Capability Used	Defining Characteristics	1 - Initial	3 - Defined	5 - Optimised
Leadership	<ul style="list-style-type: none"> ■ Governance ■ Engagement ■ Planning ■ Coordination ■ Communication 	<ul style="list-style-type: none"> ■ Innovation pockets identified in Regulators and Firms ■ Individual champions identified within the above. ■ Both recognise RegTech as an Area for initial investment / development ■ Confined to regulators at a country level ■ Policy changes to support the market not well understood ■ Lack of traction for bigger thematic regulatory challenge eg. AML 	<ul style="list-style-type: none"> ■ RegTech innovation recognised as enabler with active planning and engagement ■ Cohesive groups of individuals and industry bodies established ■ Informal relationships built across regulators ■ Locally defined governance within firm, jurisdiction, regulator, owned by Senior Leadership ■ Emerging RegTech portfolio reactive to local priorities in Regulators & Firms ■ Policy changes to support the market understood, legislation in definition ■ Industry innovation around bigger thematic regulatory challenges 	<ul style="list-style-type: none"> ■ RegTech embedded strategically in its own right globally across regulators, firms and vendors ■ Identified and agreed priorities with coordination and governance across jurisdictions ■ Seen as a Board level responsibility ■ Policy defined to support digitisation ■ Value of RegTech Portfolio aligned to industry imperatives
Ecosystem	<ul style="list-style-type: none"> ■ Adoption framework ■ Mature business models ■ Profit orientation ■ Distribution channels ■ Standards / Validation/ accreditation ■ Available sandboxes and data 	<ul style="list-style-type: none"> ■ Reactive partnerships form where there is mutual benefit ■ Lack of standards are local to enable the partnership ■ Market is highly fragmented & difficult to identify solutions across common challenges ■ Emerging SMEs & software entrepreneurs that engage 1-1 with Innovators ■ Engagement in Regulators and FS is experimental / challenge led ■ Solutions heavily adapted to individual firms requirements 	<ul style="list-style-type: none"> ■ Business models are formed around collaboration ■ Horizontal value being created against industry priorities ■ Emergence of test bed, validation sandboxes and common standards ■ Industry bodies form and shape thinking in partnership with regulators & Financial Services ■ Market leaders & solutions identifiable across common challenges ■ Initial success stories emerge / are publicised ■ Global Analysts start to form opinions, comment and advise 	<ul style="list-style-type: none"> ■ Global consolidation of providers formed around decentralised, autonomous cooperation ■ Consistent standards, accreditation and frameworks ■ The functional groups coalesced around well-understood challenges and value ■ Solution functionality addresses majority of market challenges ■ Rapid adoption by firms and regulators ■ Global governance and structure supporting the needs of regulators and Financial Services ■ Global library of case studies available across providers
Empowered People	<ul style="list-style-type: none"> ■ Integration into business ■ Success measures ■ Incentives ■ Communication 	<ul style="list-style-type: none"> ■ No dedicated RegTech teams ■ Isolated initiatives ■ Looking at potential technology or regulatory change ■ Minimal vendor engagement ■ Difficult to identify stakeholders ■ Limited internal / external awareness 	<ul style="list-style-type: none"> ■ RegTech teams formed within organization structures ■ Embryonic decentralised empowerment ■ Structures and platforms for communication established ■ Cross industry engagement exists ■ Funding available for POC's and early business cases 	<ul style="list-style-type: none"> ■ RegTech embedded across / within organizational structures ■ The "new normal" way for regulatory compliance ■ Culture is one that motivates and rewards the drive for digital transformation ■ Success measures are embedded in corporate KPI's and objectives ■ Growth in employee productivity and engagement

Appendix A cont.

Capability Used	Defining Characteristics	1 - Initial	3 - Defined	5 - Optimised
Culture of Agility	<ul style="list-style-type: none"> ■ Balance between adequate systems and controls vs. new capability ■ Holistic view of regulatory agenda ■ Balanced short / long term priorities ■ Integrated book of work ■ Proactive vs. reactive change needs 	<ul style="list-style-type: none"> ■ Focused on short term priorities ■ Reactively shifting to new challenges and opportunities ■ Lack of standards, test data and “sand box” environments 	<ul style="list-style-type: none"> ■ Alignment to a portfolio of priorities, short and long term ■ Standards and technology enable agility ■ Shift from analogue to digital based regulation ■ Emergence of regulatory “sand boxes” 	<ul style="list-style-type: none"> ■ Proactive adoption of global regulatory priorities ■ Standards and open technology enable digital ‘plug and play’ ■ Common value chains across jurisdictions ■ Rapid reaction to new emergent threats ■ Established sand-boxes and global regulatory co-creation
Value from Data	<ul style="list-style-type: none"> ■ Accessibility ■ Validation of data ■ Governance ■ Openness of sharing 	<ul style="list-style-type: none"> ■ Data disparate / siloed within firms and regulators ■ Tightly bound to use cases and jurisdictions ■ Data models are organisation specific ■ Culturally risk averse to data manipulation 	<ul style="list-style-type: none"> ■ Emergence of data frameworks and models for regulation ■ Firm and regulator collaboration on data sharing ■ Data aligned to thematic problems ■ Increasing comfort with data manipulation 	<ul style="list-style-type: none"> ■ Regulatory data frameworks are holistic in nature ■ Data is openly shared across firms and regulators ■ Data sources are trusted addressing inbound compliance

About Fujitsu

As a global IT company, Fujitsu has been working with government and Financial Services for over fifty years. We provide many critical national systems for tax, law enforcement and criminal justice. From protecting borders and government against cyber-attacks, to detecting fraud and error and enabling the payment of pensions and benefits to millions, Fujitsu understands the implications of the challenges and also that IT needs are changing too.

Underlying all of this as a consistent theme to accelerate digital innovation and transformation. Organisations need to find the right balance between adopting and exploiting emerging digital solutions, while also modernising the established systems that they rely on today and building trust.

Fujitsu's vision is to help create a society where people are empowered by technology – to innovate, lead enriched lives, and create new business and social value. It is our job to help make this happen and that's why with our expertise as a safe pair of hands, we want to enable regulators and the regulated to embrace digital opportunities.

We want you to be confident that transformation will continue to securely deliver the essential services society relies on and, most importantly, to use digital to make a difference to people's lives.

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