

Feedback Statement

FS16/4

# Call for input on supporting the development and adopters of RegTech



July 2016



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# 1. Introduction

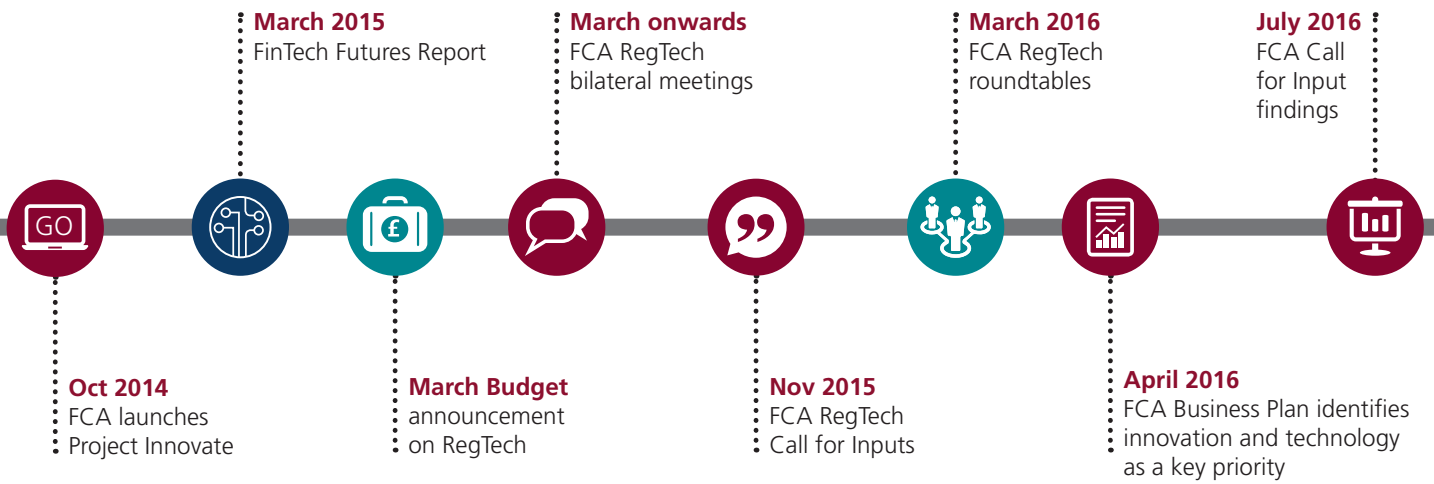
Technology plays a fundamental and increasingly pivotal role in delivering innovative financial products and services. The FCA is committed to fostering innovation and technology – including RegTech – to promote effective competition in the interests of consumers.

RegTech is a sub-set of FinTech that focuses on technologies that may facilitate the delivery of regulatory requirements more efficiently and effectively than existing capabilities.

- 1.1** In October 2014, we launched Project Innovate to encourage new innovation in financial services markets. By providing direct support to individual innovators we are able to foster innovative firms and guide them through the regulatory landscape. In the first year Project Innovate directly supported 177 firms – 8 months later that number has increased to nearly 300.
- 1.2** Building on this success, in the first half of 2015, we started to explore how regulatory requirements and technology could come together through RegTech. This was in line with both the Government Office for Science review on how to support growth and development of the UK's FinTech market (the FinTech Futures Report) and the call for regulators to engage with RegTech by the Chancellor in the March 2015 Budget.
- 1.3** We issued a Call for Input (CFI) in November 2015 to seek broader views on how we should progress and prioritise our RegTech work. We received an outstanding level of interest with more than 100 written responses from established financial services firms, technology suppliers and FinTech start-ups.
- 1.4** We also held a number of bilateral meetings and convened four roundtables in March 2016 (hosted by techUK, Burges Salmon, JWG and Innovate Finance) providing an additional opportunity for over 250 stakeholders to offer their views.
- 1.5** We have listened to the responses and they have informed how we think about RegTech strategically and which activities we should prioritise. The responses have also helped shape our engagement approach with the RegTech community.
- 1.6** This report provides a summary of the key themes from the responses and roundtable, and outlines the FCA' approach in relation to RegTech.

*“The impact of technology is one of the fastest-evolving of this year’s priority themes.”*

**FCA Business Plan 2016/17**



## 2. The call for input

**2.1** To better understand how we can support the adoption and development of RegTech, we asked five key questions.

- **What RegTech could be introduced?**

What RegTech could be introduced in order to make it easier for firms to interact with regulators.

- **What role should we play?**

What role would it be most useful for us to play in order to foster development and adoption of RegTech in financial services, and how should we do this?

- **What are the blockers to innovation?**

Are there any specific regulatory rules or policies that cause barriers to innovation or adoption of RegTech for in financial services (products or processes)?

- **Which rules and policies would help?**

Are there any regulatory rules or policies that should be introduced to facilitate innovation and adoption in RegTech for financial services (products or processes)?

- **Are there any specific examples?**

Which existing regulatory compliance or regulatory reporting requirements do you feel would most benefit from RegTech?

**2.2** During the roundtables and bilaterals the discussions tended to fall into three main themes:

- **Improving the interface with the regulator**

A regulator that's fully engaged with the FinTech community could enable greater innovation and competition.

- **Improving effectiveness and efficiencies**

A regulator that encourages and supports flexible, efficient and effective technology could enable a more efficient regulatory environment.

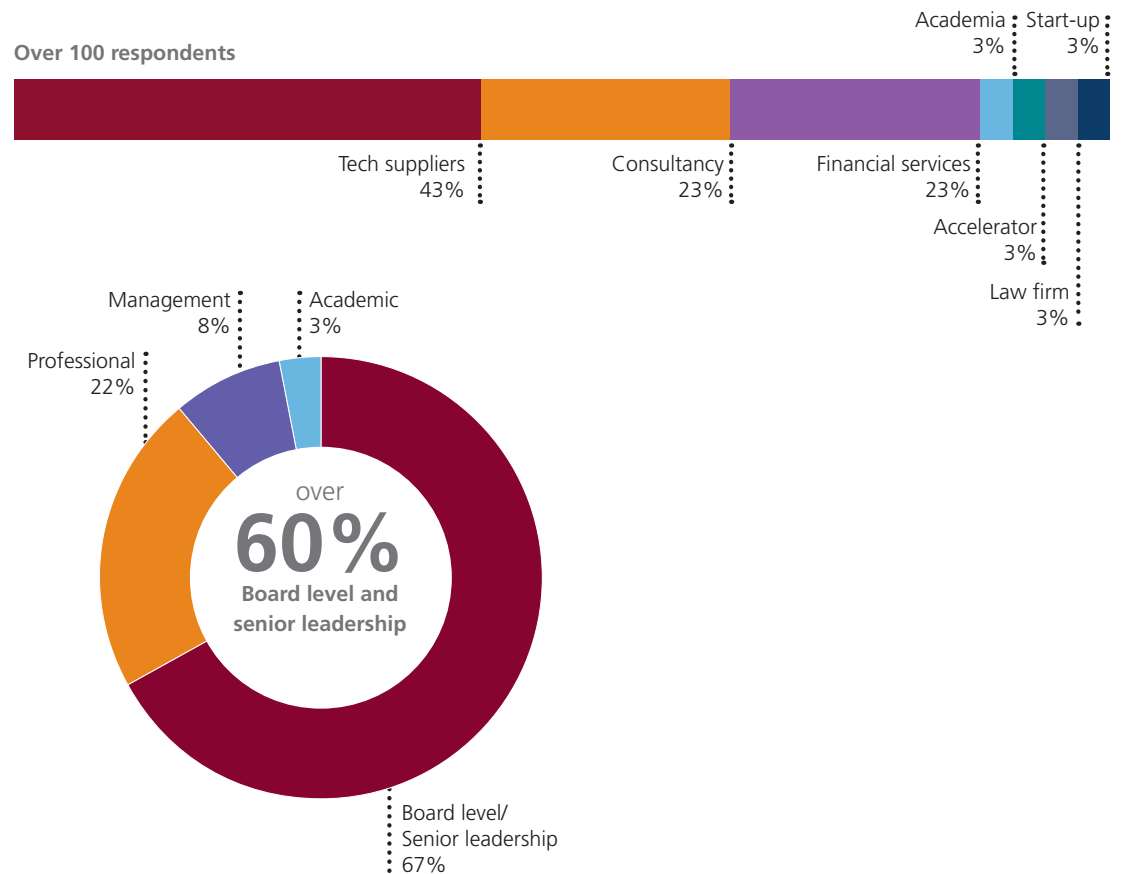
- **Understanding regulatory position**

Understanding the regulatory position could speed up the adoption of RegTech.

### 3. Who responded

- 3.1** We received an outstanding level of interest from across the financial services market, including established financial services firms, technology suppliers and FinTech start-ups.
- 3.2** There were more than 350 responses, of which 43% were from technology suppliers, 23% from financial services organisations (banks, building societies, payment providers, think-tanks and trade bodies) and 23% consultancies.
- 3.3** An indication of how important the industry sees RegTech was shown by the engagement from Board level or senior leadership. This group made up over 60% of those who engaged with us through the call for input, roundtables and bilateral meetings.

*“An indication of how important the industry sees RegTech was shown by the engagement from Board level or senior leadership”*





## 4. RegTech Cfl feedback

### What RegTech could be introduced?

- 4.1** The innovative and diverse ideas generated by the inputs and discussions at the roundtables ranged from the use of online portals and greater use of XBRL (see glossary) for reporting through to the use of more complex and wide reaching technology, such as artificial intelligence, shared utilities and the blockchain.
- 4.2** We have summarised the responses to the questions above into four main themes and provided a high-level view of the technology/concept in each theme and its potential benefits:
- Efficiency and collaboration
  - Integration, standards and understanding
  - Predict, learn and simplify
  - New directions

### Efficiency and collaboration

#### Technology that allows more efficient methods of sharing information



**Alternative reporting methods**  
Technology that allows data to be provided (or taken) in a different way.

- Creating more flexibility for firms to provide their regulatory data would reduce the costs and the burden of regulatory reporting.
- For example, making it easier for firms to use different software to provide data to the regulator may allow them to streamline processes and align internal systems.



**Shared utilities**  
Technology that allows firms to share services (such as a Know Your Customer utility) via the cloud and/or online platforms.

- Shared solutions can reduce the burden and regulatory costs for the industry by increasing scalability and flexibility.



**The cloud/cloud computing**  
On-demand computing services delivered over the Internet.

- Its flexibility allows firms to greatly improve efficiency and reduce costs.
- Access to innovative software and advanced computing allows firms to improve capabilities, deliver better insights and make better decisions.



**Online platforms**  
Technology that helps different parties communicate.

- Greater FCA engagement would help increase the FinTech community's understanding of regulation and compliance, potentially enabling it to develop more effective RegTech.
- It would encourage FinTech to be engaged earlier in policy design.

## Integrate, standardise and understand

### Technology that drives efficiencies by closing the gap between intention and interpretation



#### Semantic tech and data point models Technology that converts regulatory text into a programming language.

- Machine-readable regulation would allow more automation and could significantly reduce the cost of change.
- It could also help ensure greater consistency between the intentions of a regulation and its implementation.



#### Shared data ontology A formal naming and definition of the types, properties, and interrelationships of entities.

- Sharing a common understanding of the structure of regulatory data would improve efficiency, reduce costs, ease interactions and help remove ambiguity.



#### Application Programme Interface (API) Technology that allows systems to interact consistently, in this case over the internet.

- APIs encourage integration and interoperability between systems.
- This can reduce costs, increase efficiency and provide platforms for innovation.



#### Robo-Handbook Technology that allows firms to interact with regulation to understand the impact of this to their systems and processes.

- A more interactive FCA Handbook better tailored to the firm's permissions could make compliance and reporting requirements clearer.

## Predict, learn and simplify

### Technology that simplifies data, allows better decision making and the creation of adaptive automation



#### Big data analytics Advanced analytics solutions that can interpret vast amounts of structured and unstructured data that could be stored in 'data lakes' (storage repositories).

- Using big data analytics across multiple data sets could enable new insights and support more informed decision making.
- Greater FCA use of big data analytics could also reduce the regulatory reporting burden on firms.



#### Risk and compliance monitoring Technology that allows an always-on, non-invasive surveillance of transactions, behaviour and communications.

- Identifying real-time risk/fraud through correlating multiple sources of information and using powerful calculation engines could reduce risk and the number of false positives.



#### Modelling/visualisation technology Technology that allows the simulation of actions and interactions to assess their effects on the system as a whole.

- Modelling technology could allow the impact (and unintended consequences) of regulation to be understood before it is implemented.
- Simulation technology can enhance firms' understanding of its compliance.



#### Machine learning and cognitive technology Technology that learns from data and pattern recognition to refactor / change algorithms (e.g. artificial intelligence).

- As this allows systems to automatically reassess and refine processes in reaction to input from users, it could replace firms' slightly more complex high-volume and repeatable regulatory tasks.

## New directions

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### Technology that allows regulation and compliance processes to be looked at differently (please note that this is not an exhaustive list)



#### Blockchain/distributed ledger

This securely records and encrypts verified data that can be safely shared across a network held in a distributed database.

- Distributed ledgers could improve system integrity and increase transparency.
- They could transform processes, reduce costs and potentially redefine how data is shared.



#### Inbuilt compliance

Regulatory requirements can be coded into automated rules applied when relevant.

- A system that can automatically apply the regulatory 'programme code' would improve compliance, reducing regulatory and staff costs.



#### Biometrics

Technology that measures and analyses people's physical and behavioural characteristics.

- Biometric technology could allow more efficient and/or robust ways to verify identity.



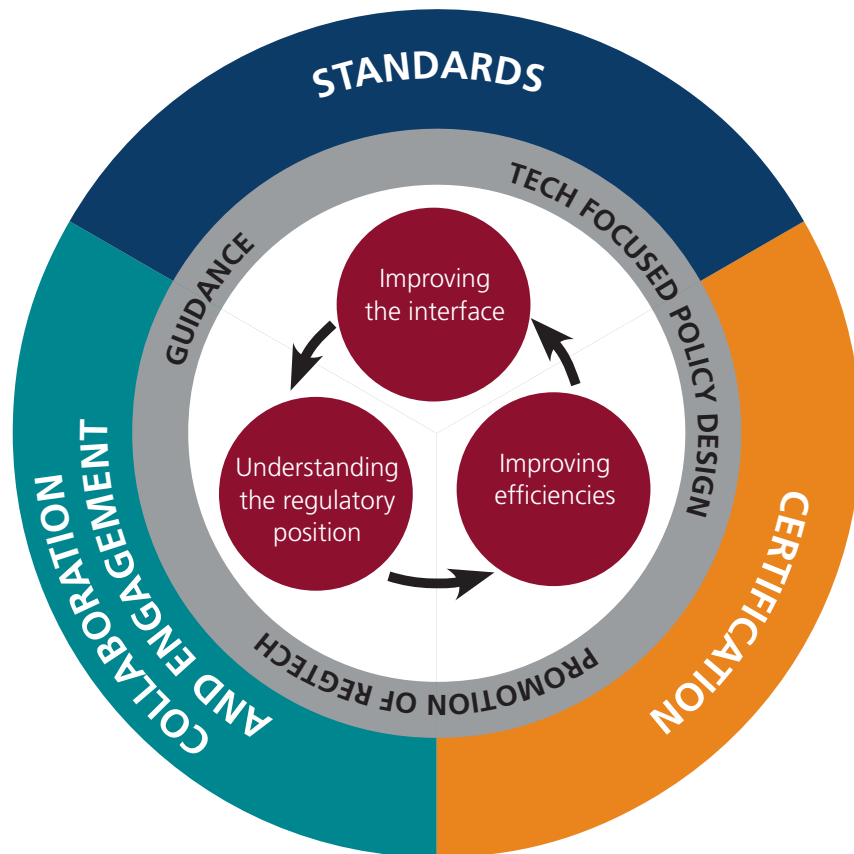
#### System monitoring and visualisation

Technology that captures and traces all messages created by systems and their interactions.

- Technology that creates a visual representation of how a firm's technology is working. It looks at the 'flow of systems' by monitoring and capturing events such as mouse clicks, key presses, or messages from other programmes. This allows firms to visualise their entire technology estate and could help inefficiencies to be identified.

**What role should we play?**

- 4.3 Respondents thought that by clarifying our expectations and helping to **drive industry standards** and guidance, it would be possible for firms to better integrate their internal data and processes. Which in turn can reduce costs, increase quality and help drive improved effectiveness and efficiencies for us and the firms we regulate.
- 4.4 **Improved collaboration and engagement** could encourage the development of RegTech to address existing as well as forward looking challenges and improve the overall relationship and interface between the regulator and the regulated firms. For example, improved collaboration and engagement to share priorities and future direction could help guide and influence RegTech product roadmaps.
- 4.5 Finally, FCA **certification** of RegTech that meet relevant criteria could build credibility. This could increase the acceptance of, and therefore investment in, new regulatory tools. In turn, this could make guidance and standards easier to understand, reducing costs while improving compliance.



**What are the blockers to innovation?**

**Respondents provided their views on why RegTech had not been more widely adopted to date.**

Respondents thought that uncertainty over regulations, the stance of the regulator and credibility of unproven technology was making firms cautious.

'Because of regulatory uncertainty, financial firms are cautious about innovation by developing new products and using new technologies.'

They thought that support from the regulator to assist in 'proving' technology through tools such as a 'virtual sandbox' and encouraging innovation by providing assurances and support for RegTech, may help to overcome some of these barriers.

'For their development, RegTech solutions need inputs from two, usually separated, groups: technology developers and regulatory experts. When these communities are unaware of each other's insights, RegTech solutions are unlikely to be developed.'

It may also help to encourage interest from firms who understandably choose not to be early adopters, preferring to stay in the pack.

'A further fundamental issue is that banks will need some assurances that the regulatory, supervisory, and law enforcement authorities approve of the use of any such utility. Without such approval, much of the incentive to invest in and use them would be lost.'

That said, some firms will continue to choose to invest in maintaining legacy systems and not engage in new technologies. These are matters for their leadership not the regulator.

'...combined with the aforementioned legacy systems, which make new tech more difficult to integrate, there is a strong imperative to avoid adopting an innovative process that is perceived to be unproven.'

**Respondents also outlined general barriers to RegTech adoption.**

Legislation has placed restrictions on accessing, processing and storage of data. Respondents felt that this combined with a lack of accompanying standards, especially regarding data storage and processing, is impeding the development and adoption of new technologies.

'Legal restrictions on the sharing, storing, processing of and access to data and the use of new technologies impede effective data aggregation.'

'A lack of data standardisation, lack of sufficiently clear definitions of reporting concepts, and inconsistencies in data repositories inhibit data aggregation and analysis on a consolidated, automated basis.'

The FCA provides fair notice of regulatory changes, publishing consultation papers on proposed regulations ahead of their implementation, and takes notice of the feedback provided. The feedback suggested that accessibility for system and technology professionals and those who assess operational impacts appears difficult, raising a call for the regulator to investigate alternative ways of engaging with these groups.

'Regulatory deadlines for implementing new IT solutions are short and focused on incremental improvement, complicating large-scale overhauls of IT systems.'

'Understanding all the impacts of the huge number of complex regulations is too much for any one individual.'

'Lack of time to respond proactively to regulations has restricted actors to being reactive.'

Some felt that the technology was still very much in development stage, with no dominant widely used solutions having emerged.

'The preliminary stage of the RegTech market means that no dominant, widely used solutions have yet emerged, impeding efficient uptake for real-life usage.'

### Which rules or policies would help?

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- 4.6** Respondents' suggestions included defining new regulations in a machine readable format, greater consistency and compatibility of regulations internationally and establishing a common global regulatory taxonomy.
- 4.7** They thought that:
- A machine-readable version of new regulation should be made so that rules could be applied automatically. Improving the speed, efficiency and effectiveness of implementation
  - Financial services organisations could benefit from an industry wide regulatory taxonomy that applies across countries and legislations. It should cover multiple regulation and help ensure compliance by matching the implementation with relevant laws, regulations or rules
  - The industry would benefit from a rule that ensured international peers were consulted to make sure as much international consistency and compatibility as possible is built in from the beginning. Removing burdensome differences that are hard to correct in the future

### Are there any specific examples?

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- 4.8** The diverse range of responses to this section covered a wide variety of global regulations, including those already in place and future requirements. Specific examples where RegTech could help covered MiFID2, BASEL3/BCBS239, Capital assessment / Stress testing (CCAR, AQR), BRRD (UK, EU) and Dodd-Frank (US) to name a few.
- 4.9** The types of FinTech respondents identified that could be used to help address the operational impacts of the regulatory examples are on pages 6-8 (in the responses to Question 1: What RegTech could be introduced?).

## 5. Our approach for 2016/17

- 5.1** The purpose of the RegTech Call for Input (CFI) was to engage with individuals and firms in order to inform our RegTech activities and approach.
- 5.2** We received over 100 written submissions, reached 120 representatives through roundtable discussions and a further 120 through bilateral meetings. Respondents expressed a variety of views about different types of RegTech and their uses; what our role could be; and what the blockers to innovation and adoption are.
- 5.3** The high level of interest in RegTech and importance to the market has been demonstrated by the volume and quality of responses to this CFI.
- 5.4** As the following examples demonstrate, we are using the information provided to inform our approach and our engagement as we build a credible place for the FCA in the RegTech community, while remaining cognisant of the confines of our role as a regulator.

### The FCA's role

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- 5.5** It was evident early on from the CFI responses that there is a desire for the regulator to play an active role in RegTech. Respondents thought that improved collaboration and engagement across the ecosystem would not only encourage the development of RegTech to address challenges, but would also and improve the interface between the regulator and the firms it regulates.
- 5.6** Our ambition is to be a regulator that is fully engaged with the FinTech community and keen to improve the interface between the regulator and the regulated. To do this we intend to actively encourage and support the development and use of innovative technology, acting as a catalyst for further innovation within the FinTech sector, while remaining cognisant of the restrictions of our role as the regulator.
- 5.7** Our April 2016 TechSprint was a two day innovation event (also known as a 'hackathon') that provided an environment where we could test this hypothesis. We convened a cross-section of financial services providers and technology companies with a known interest in finding solutions to issues affecting Access to Financial Services, a topic we are interested in as a regulator.
- 5.8** The success of the event exceeded our expectations and we intend to continue to use this type of engagement when appropriate.

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## Standards and guidance

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- 5.9** Respondents also thought that by clarifying our expectations and helping to drive industry standards and guidance, we would be helping to encourage improved effectiveness and efficiencies for both ourselves and the firms we regulate. We are investigating how improved technology standards and guidance can be developed, by proactively engaging with established financial services firms and standard setting bodies.

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## What we will do

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- 5.10** The FCA's work to promote innovation is strongly tied to our objective of promoting effective competition in the interests of consumers. Creating a competitive marketplace is a priority for us and our approach to RegTech is a core part of delivering our Innovation and Technology priority theme for 2016/2017.
- 5.11** Listening to the industry has been a key tenet in developing our approach to RegTech. The responses to this Call for Input have helped to inform our approach to RegTech and the topics we prioritise.
- 5.12** We agree with the sentiment that the FCA has an active role to play in RegTech. We intend to concentrate our efforts on increasing our engagement and collaboration with the RegTech community, using our convening authority to help bring together market participants to work on shared challenges; and to act as a catalyst for change that helps to unlock the potential benefits of technology innovation.
- 5.13** As mentioned above, there is also a potential, but limited, role for the regulator to play in supporting the industry to define standards and guidelines in order to provide more certainty for firms purchasing new technology capabilities.
- 5.14** There are limitations to the role the FCA can play. The complexity, scale and diversity of legacy infrastructure and existing systems within some financial services firms, makes the implementation of new technologies challenging. That some firms will continue to choose to invest in legacy systems rather than new technologies is a matter for their leadership not the regulator.

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## The outcomes we are looking for:

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- 5.15** To improve compliance and reducing the cost of regulation for both firms and the regulator by:
- Encouraging innovation development and helping to identify opportunities for the adoption of new technologies that support the improvement of regulatory compliance and the interface between the regulator and regulated firms.
  - Engaging internationally to assist FinTech organisation gain access to other markets and vice versa, helping to ensure firms in the UK and globally have access to the best technologies.
  - To promote an industry where consumers have the appropriate level of protection and suitable access to the benefits of RegTech and FinTech.



# Glossary of terms

**Artificial Intelligence**

Systems able to perform tasks normally requiring human intelligence. Such as visual perception, speech recognition and decision-making.

**API (Application programming interface)**

The programming that enables computer programmes and software to directly communicate with one another.

**Big data**

Refers to both the information that companies hold, as well as the activity logs that take place on their systems.

**Big data analytics**

The analysis of big data (also includes solving problems associated with analysing the data, much of which can be unstructured).

**Blockchain/Distributed Ledger**

A distributed database that maintains a continuously growing list of data hardened against tampering and revision. It consists of data structured in blocks that are linked.

**The cloud/cloud computing**

Remote servers and software networks that allow centralised data storage and online access to computer services and resources.

**Data lakes**

Data storage systems that contain data stored in its 'native' format until it is required for use.

**Distributed systems**

A type of computer network that allows linked autonomous computers to share the resources of the system hardware, software and data.

**Ecosystem**

The community of interacting firms and the financial services environment.

**FinTech/financial technologies**

Used to describe 'innovation in 'financial services', covering new products from start-ups, or the adoption of new approaches by existing players where technology is the key enabler.

**Legacy systems**

In computing, refers to outdated computer systems, programming languages or software.

**Machine learning/cognitive computing**

Computer systems that can learn from algorithms as opposed to simply being programmed to do certain tasks.

**Project Innovate**

A project run by the Financial Conduct Authority to help support industry innovation.

**Risk monitoring technology**

Technology that allows an always-on, non-invasive surveillance of transactions, behaviour and communications in financial services firms.

**Shared data ontology**

A formal naming and definition of the types, properties, and interrelationships of entities.

**Shared utilities**

Technology that allows services to be provided to multiple firms across the industry (such as a KYC utility) via the cloud and/or online platforms.

**TechSprint**

An event, typically lasting several days, in which a large number of people meet to engage in collaborative computer programming to solve an issue.

**XBRL**

A type of XML (extensible mark-up language) used for organizing and defining data. It uses tags to identify each piece of financial data.

Financial Conduct Authority



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