



BANKING AND FINANCE

Public consultation on FinTech: a more competitive and innovative European financial sector

Fields marked with * are mandatory.

Introduction

Thank you for taking the time to respond to this consultation on technology-enabled innovation in financial services (FinTech). Our goal is to create an enabling environment where innovative financial service solutions take off at a brisk pace all over the EU, while ensuring financial stability, financial integrity and safety for consumers, firms and investors alike.

Please note: In order to ensure a fair and transparent consultation process **only responses received through our online questionnaire will be taken into account** and included in the report summarising the responses. Should you have a problem completing this questionnaire or if you require particular assistance, please contact fisma-fintech@ec.europa.eu.

More information:

- [on this consultation](#)
- [on the protection of personal data regime for this consultation](#) 

1. Information about you

*Are you replying as:

- a private individual
- an organisation or a company
- a public authority or an international organisation

*Name of your organisation:

Deutsche Börse Group

Contact email address:

The information you provide here is for administrative purposes only and will not be published

laurence.trillig@deutsche-boerse.com

*Is your organisation included in the Transparency Register?

(If your organisation is not registered, [we invite you to register here](#), although it is not compulsory to be registered to reply to this consultation. [Why a transparency register?](#))

- Yes
- No

*If so, please indicate your Register ID number:

20884001341-42

*Type of organisation:

- Academic institution
- Consultancy, law firm
- Industry association
- Non-governmental organisation
- Trade union
- Company, SME, micro-enterprise, sole trader
- Consumer organisation
- Media
- Think tank
- Other

*Please indicate the size of your organisation:

- less than 10 employees
- 10 to 50 employees
- 50 to 500 employees
- 500 to 5000 employees
- more than 5000 employees

*Where are you based and/or where do you carry out your activity?

Germany

*Field of activity or sector (*if applicable*):

at least 1 choice(s)

- Accounting
- Asset management
- Auditing
- Banking
- Brokerage
- Credit rating agency
- Crowdfunding
- Financial market infrastructure (e.g. CCP, CSD, stock exchange)
- Insurance
- Investment advice
- Payment service
- Pension provision
- Regulator
- Social entrepreneurship
- Social media
- Supervisor
- Technology provider
- Trading platform
- Other
- Not applicable



Important notice on the publication of responses

*Contributions received are intended for publication on the Commission's website. Do you agree to your contribution being published?

([see specific privacy statement](#) )

- Yes, I agree to my response being published under the name I indicate (*name of your organisation /company/public authority or your name if your reply as an individual*)
- No, I do not want my response to be published

2. Your opinion

1. Fostering access to financial services for consumers and businesses

FinTech can be an important driver to expand access to financial services for consumers, investors and companies, bringing greater choice and more user-friendly services, often at lower prices. Current limitations in traditional financial service markets (e.g. opacity, lack of use of big data, insufficient competition), such as financial advice, consumer credit or insurance, may foreclose access to some categories of individuals and firms. New financial technologies can thus help individuals as well as small and medium-sized enterprises (SMEs), including start-up and scale-up companies, to access alternative funding sources for supporting their cash flow and risk capital needs.

At the same time, potential redundancy of specific back-office functions or even of entire market players due to automation via FinTech solutions might have adverse implications in terms of employment in the financial industry, even though new jobs would also be created as part of the FinTech solutions. The latter, however, might require a different skill mix.

Question 1.1: What type of FinTech applications do you use, how often and why? In which area of financial services would you like to see more FinTech solutions and why?

As a genuine IT company and pioneer in the digitalization of trading, Deutsche Börse Group embraces the development of FinTech and the business opportunities it brings about. As with the change from floor trading to electronic trading, we believe the accelerating digitalization of financial services is one of the key factors that will determine the structure of the financial industry going forward.

When it comes to FinTech applications, Deutsche Börse Group has two different roles to play. On the one hand, we are conducting internal research and development activities with a view to shaping the FMI landscape through innovation and offering state of the art services for our customers. On the other hand, we are using our position and expertise as a platform provider with our Deutsche Börse Venture Network and the FinTech Hub in Frankfurt to foster a start-up ecosystem and enable the financing of growth and innovation (also beyond FinTech).

In terms of the type of FinTech applications used and/or explored by Deutsche Börse Group, they can be broadly categorized in five groups:

1. Big Data and Machine Learning

- DBAG is already using big data solutions in some areas. Trading data of the exchanges Xetra and Eurex as well as the daily index data are available for internal and external analyses.
- We see further business opportunities for providing analytics and insight services from the index level data collected throughout the securities value chain. A content lab has been established at Deutsche Börse Group level to explore this area further.

2. Robotics and AI

- DBAG is assessing opportunities to streamline its services through use of

robotic automation and AI, which could provide strong efficiencies and reductions in manual processes in a number of key internal processes.

3. Cloud Technology

- Deutsche Börse is assessing opportunities both to leverage Cloud Technology for the development of new FinTech infrastructure solutions, as well as using it as a new environment for current infrastructure.
- Using cloud services also allows deploying software based infrastructure without having to directly establish proprietary data centers and processing power.
- In addition to that, we use the cloud as an on-demand simulation environment providing clients access to virtual instances of Eurex Exchange's upcoming T7 trading architecture for testing and software development purposes.

4. APIs

- Via its Corporate Venture Capital arm, DB1 Ventures, Deutsche Börse has a significant minority stake in the start-up figo. Figo bridges the gap between new and innovative financial services and 3.100 sources of finance with over 55 million users. Banking functions provided by figo are based on APIs in the context of the EU Payment Services Directive 2.

5. Blockchain

Since mid-2016, Deutsche Börse Group has announced three distinct blockchain based Proofs of Concept (PoCs) - either finalised or currently underway - which are outlined in more detail below. As a provider of financial markets infrastructure covering the whole value chain through trading, clearing and settlement, Deutsche Börse Group is in the position to investigate possible applications across all of these stages while combining the advantages offered by the blockchain technology with the tested, trusted and supervised entities of the group.

Recent activities of Deutsche Börse Group in the blockchain area include:

1. Collateralized Coin ("CollCo"):

a concept for riskless transfer of commercial bank money via an infrastructure based on blockchain technology combined with the proven post-trade infrastructure - and the existing regulatory framework - of our CCP Eurex Clearing. This includes an existing rulebook, existing processes, established interaction between market participants and a central market infrastructure.

2. LA Ledger (Liquidity Alliance Ledger):

a functional prototype for efficient cross-border collateral transfer based on blockchain technology, in cooperation with four other CSDs, members of the so called "Liquidity Alliance", with the goal to counteract collateral scarcity.

3. Joint development of a prototype for the blockchain-based securities settlement with Deutsche Bundesbank:

designed to provide the technical functionality for the settlement of securities in delivery-versus-payment mode for centrally-issued digital

coins, also capable of executing basic corporate actions such as coupon payments on securities and the redemption of maturing securities.

Deutsche Börse Group also takes part in Linux Foundation's Hyperledger Project, where it has become a premium member. Moreover, we have taken a minority stake with a board seat in Digital Asset Holdings, a New York-based company developing blockchain technology software for financial intermediaries foremost.

Artificial intelligence and big data analytics for automated financial advice and execution

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

Question 1.2: Is there evidence that automated financial advice reaches more consumers, firms, investors in the different areas of financial services (investment services, insurance, etc.)?

- Yes
- No
- Don't know / no opinion / not relevant

Question 1.3: Is enhanced oversight of the use of artificial intelligence (and its underpinning algorithmic infrastructure) required? For instance, should a system of initial and ongoing review of the technological architecture, including transparency and reliability of the algorithms, be put in place?

- Yes
- No
- Don't know / no opinion / not relevant

Please elaborate on your answer to whether enhanced oversight of the use of artificial intelligence is required, and explain what could more effective alternatives to such a system be.

Artificial Intelligence (AI) is being generated on the basis of algorithms and data and is constantly trained on that basis. In general, this results in comprehensive auditable trails. Just as any other means of action, AI might produce mistakes, which could lead to issues as regards investor protection or trading errors - while the operating means change, the impact would be the same as in a traditionally run system.

However, more significant damage might result where AI is applied within a closely interconnected automated network, for instance where straight-through processing is applied. Careful oversight would be advisable in such a setting.

In case of RoboAdvise, oversight should focus on investor protection, and instead of telephone and mail audit trails, the audit trail to be considered would be technical specifications, audit trails for testing, audit trails for inclusion on investment products to be offered to customers as well as the audit trail how products have been or are being allocated to Investors.

Question 1.4: What minimum characteristics and amount of information about the service user and the product portfolio (if any) should be included in algorithms used by the service providers (e.g. as regards risk profile)?

Generally, the characteristics would not need to be too different compared to existing today. In case of fully automated portfolio construction it would be sensible to explicitly ask investors for their consent and of course inform about the technical service.

Question 1.5: What consumer protection challenges/risks have you identified with regard to artificial intelligence and big data analytics (e.g. robo-advice)? What measures, do you think, should be taken to address these risks/challenges?

Social media and automated matching platforms: funding from the crowd

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

Question 1.6: Are national regulatory regimes for crowdfunding in Europe impacting on the development of crowdfunding?

- Yes
- No
- Don't know / no opinion / not relevant

Please elaborate on your reply to whether there are national regulatory regimes for crowdfunding in Europe impacting on the development of crowdfunding. Explain in what way, and what are the critical components of those regimes.

Question 1.7: How can the Commission support further development of FinTech solutions in the field of non-bank financing, i.e. peer-to-peer/marketplace lending, crowdfunding, invoice and supply chain finance?

Deutsche Börse Group is following the development of FinTech financing solutions with great interest. While we see the potential in tapping new sources for financing growth companies, we also believe that regulatory requirements applicable to peer-to-peer and marketplace lending should be aligned with the framework applied to financial institutions following the principle "same service - same rules".

Question 1.8: What minimum level of transparency should be imposed on fund-raisers and platforms? Are self-regulatory initiatives (as promoted by some industry associations and individual platforms) sufficient?

Deutsche Börse Group believes that the transparency and reporting requirements for peer-to-peer and marketplace lending should be enhanced successively in line with the growing relevance of such services, with a view to ensuring consumer protection and an effective supervision of market risks. The guiding principle should always be "same service - same rules".

Sensor data analytics and its impact on the insurance sector

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

Question 1.9: Can you give examples of how sensor data analytics and other technologies are changing the provision of insurance and other financial services? What are the challenges to the widespread use of new technologies in insurance services?

Question 1.10: Are there already examples of price discrimination of users through the use of big data?

- Yes
- No
- Don't know / no opinion / not relevant

Please provide examples of what are the criteria used to discriminate on price (e.g. sensor analytics, requests for information, etc.)?

Other technologies that may improve access to financial services

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

Question 1.11: Can you please provide further examples of other technological applications that improve access to existing specific financial services or offer new services and of the related challenges? Are there combinations of existing and new technologies that you consider particularly innovative?

Deutsche Börse Group believes that blockchain based applications are a good example for a technology that will reach its full potential in the financial industry only in combination with existing technology and established market players. Institutional trust plays a vital role in an environment as sensitive and highly regulated as financial markets. Market participants and supervisors are used to a highly secure, stable and regulated infrastructure at the core of a centralized system.

We believe that combining innovative technologies, such as the blockchain, with established, highly regulated market infrastructures, such as Deutsche Börse, would be the natural choice in order to develop blockchain based systems that live up to the industry's and the regulators' standards. Regulatory requirements that ensure the stability and integrity of the financial system can and should not be loosened up.

When it comes to technological applications improving access to financial services, Deutsche Börse sees great potential in the automatisisation and digitalisation of consumer banking services, e.g. loan application or credit scoring, that have the potential to lower prices for consumers while improving the services provided.

2. Bringing down operational costs and increasing efficiency for the industry

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

FinTech has the potential of bringing benefits, including cost reductions and faster provision of financial services, e.g., where it supports the streamlining of business processes. Nonetheless, FinTech applied to operations of financial service providers raises a number of operational challenges, such as cyber security and ability to overcome fragmentation of standards and processes across the industry. Moreover, potential redundancy of specific front, middle and back-office functions or even of entire market players due to automation via FinTech solutions might have adverse implications in terms of employment in the financial industry, even though new jobs would also be created as part of the FinTech solutions. The latter, however, might require a different skill mix, calling for flanking policy measures to cushion their impact, in particular by investing in technology skills and exact science education (e.g. mathematics).

Question 2.1: What are the most promising use cases of FinTech to reduce costs and improve processes at your company? Does this involve collaboration with other market players?

Cost savings can generally be realised through further automating and digitalising processes, reducing manual labour or/and intensive reconciliation processes. Blockchain-based applications can play a key role here, as does the use of cloud services. For the latter, Deutsche Börse Group relies on collaboration with cloud service providers.

However, it is worth noting that the cost saving potential of automatisisation largely depends on the initial conditions within the respective area. Within Deutsche Börse Group's ICSD Clearstream for instance, internal settlement is already a highly automated process with very little human intervention. Automated real-time settlement would thus not necessarily lead to sizable reductions in costs. However, one area within which blockchain technology can lead to significant improvements are markets that operate globally connected to different systems. A good example is cross-border mobilisation of collateral that is still cumbersome today. Significant efficiency boosts could be realised when the established processes are complemented by additional blockchain based solutions, as aimed for with our LA Ledger project. (cp. <http://www.clearstream.com/clearstream-en/newsroom/170118/86346>)

Question 2.2: What measures (if any) should be taken at EU level to facilitate the development and implementation of the most promising use cases? How can the EU play its role in developing the infrastructure underpinning FinTech innovation for the public good in Europe, be it through cloud computing infrastructure, distributed ledger technology, social media, mobile or security technology?

Deutsche Börse Group believes that it is too early for legislative action in this area, given that the market development is still at an early state. European Institutions should continue the dialogue with market participants and actively participate in discussions with regards to the use of new technology.

We believe that the ESAs can play a role in encouraging NCAs to allow for flexibility in using and adapting to new technology, ensuring a harmonious development throughout the European single market and facilitating the provision of cross-border services.

Going forward, standards, interoperability and built-in porting mechanisms should be promoted at EU level. However, it should be ensured that the spirit behind regulation such as EMIR and MiFID is carried through to new technological solutions, even though some adaptations of the letter may be needed.

Question 2.3: What kind of impact on employment do you expect as a result of implementing FinTech solutions? What skills are required to accompany such change?

The effects of automatisisation on employment is a widely discussed topic that affects all sectors. FinTech solutions can have an impact on employment inasmuch as automatisisation potentially leads to fewer back office employees being needed. In addition to that, digitalisation makes a broad network of branch office for serving clients increasingly obsolete. Yet in the past, technology has always ended up creating more jobs than it destroys. Rather than destroying jobs, automation redefines them, and in ways that reduce costs and boost demand.

However, the rapid change we currently see through all sectors requires employees to have a new skill set, eventually making IT literacy a precondition for most employments. Deutsche Börse believes that especially legal and compliance experts with a strong IT understanding will be needed in the area of financial services.

Besides the changing skill set, we believe that a cultural change is also impending, with more flexible working environment, the usage of smart / mobile devices and applications as well as the availability of remote access challenging the current "desk" mentality.

RegTech: bringing down compliance costs

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

Question 2.4: What are the most promising use cases of technologies for compliance purposes (RegTech)? What are the challenges and what (if any) are the measures that could be taken at EU level to facilitate their development and implementation?

Deutsche Börse Group sees great potential in blockchain based use cases that are built up around regulatory reporting, reporting in general, KYC processes including identity management and AML. In addition to that, AI and big data may also generate opportunities in KYC and AML monitoring, new technology and analytics can be leveraged to better manage systematic risk and large amounts of data.

However, this raises questions of liability in case of errors, for instance if an AI solution does not pick up on an AML case that is later discovered. Would it be the company to blame or the AI designer?

Blockchain based services may further raise questions regarding the legal status of smart contracts and tokens, as well as how to identify the applicable jurisdiction or relevant laws in a decentralised system.

Recording, storing and securing data: is cloud computing a cost effective and secure solution?

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

Question 2.5.1: What are the regulatory or supervisory obstacles preventing financial services firms from using cloud computing services?

The growing importance and increased use of cloud solutions by financial institutions prompted the EBA to develop guidelines on outsourcing to cloud services (currently open for public consultation until 18 August 2017). Once entered into force and transposed into binding law financial institutions will have to apply these in addition to general outsourcing requirements. While the general outsourcing rules are in parts not fit for purpose, the EBA guidelines on outsourcing to cloud service providers open up the rules for usage of cloud solutions but post additional requirements to financial institutions. Especially the stipulated right to audit and access to the cloud service provider might be considered as burdensome by respective providers, which offer in general standardized solutions. We regard standardized quality assuring procedures and forms like ISAE 3402, publicly disclosed by the respective provider, as being sufficient to fulfil the requirement. Under due consideration of prudential interests, inspection rights might be an additional element to be considered.

For further details on this, please refer to our response to the EBA guidelines on outsourcing to cloud service providers (EBA/CP/2017/06) once published. In general, we kindly ask you to consider the entirety of responses within the further cause of developing the Commissions policy approach towards technological innovation in financial services.

Question 2.5.2: Does this warrant measures at EU level?

- Yes
- No
- Don't know / no opinion / not relevant

Please elaborate on your reply to whether the regulatory or supervisory obstacles preventing financial services firms from using cloud computing services warrant measures at EU level.

Harmonisation of requirements on the use of cloud services by financial institutions at an EU level would be helpful in harnessing the full potential of cloud services. As of today, NCAs across the EU have to a certain extend established different approaches on how to deal on the use of cloud services, for instance as regards data location. This creates uncertainties with regard to the use of cloud services in general as well as with regard to the provision of cloud services across the EU in particular.

Question 2.6.1: Do commercially available cloud solutions meet the minimum requirements that financial service providers need to comply with?

- Yes
- No
- Don't know / no opinion / not relevant

Please elaborate on your reply to whether commercially available cloud solutions do meet the minimum requirements that financial service providers need to comply with.

Standard contracts provided by cloud services providers are often not suited to the needs of financial infrastructure providers, necessitating renegotiations. Particularly contentious aspects are the contractual right to audit, contractual and technical service resilience, information protection with our key management, administrator access of the cloud provider and change management of services provided by the cloud provider.

Question 2.6.2: Should commercially available cloud solutions include any specific contractual obligations to this end?

- Yes
- No
- Don't know / no opinion / not relevant

Please elaborate on your reply to whether commercially available cloud solutions should include any specific contractual obligations to this end.

Disintermediating financial services: is Distributed Ledger Technology (DLT) the way forward?

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

Question 2.7: Which DLT applications are likely to offer practical and readily applicable opportunities to enhance access to finance for enterprises, notably SMEs?

Deutsche Börse Group believes that it is too early to determine at this point in time which specific blockchain application might enhance access to finance for enterprises, as the impact of blockchain based applications is still becoming apparent.

Question 2.8: What are the main challenges for the implementation of DLT solutions (e.g. technological challenges, data standardisation and interoperability of DLT systems)?

Deutsche Börse Group has identified four main challenges regarding the broad implementation of blockchain-based applications.

1. Scalability:

The scalability of solutions based on blockchain technology is a key requirement for effectively putting it to use in the area of financial services. Systems need to be able to process large volumes on a daily basis and to handle potential peak volumes in times of market stress or volatility. Deutsche Börse Group is fully aware of the importance of scalability. Investigating the performance and scalability of blockchain solutions for post-trade settlement processes is one of the main goals of the collaborative research project between Deutsche Börse Group and the Bundesbank.

2. Interoperability :

As we can expect a gradual deployment of blockchain based application and different co-existing blockchain based networks, interoperability between each other and with legacy systems will be a key requirement for most use cases for the efficiency gains of the technology to materialise. While the development of global technical interoperability standards would facilitate this by providing a base layer of connectivity, experience show that such standards will be hard to establish in time to make a difference. Deutsche Börse Group would thus argue for market-based solutions including a commitment to a general necessity of interoperability.

3. Privacy concerns: (see Q 4.4.)

4. Applicability of the legislative framework (see Q 2.9)

Question 2.9: What are the main regulatory or supervisory obstacles (stemming from EU regulation or national laws) to the deployment of DLT solutions (and the use of smart contracts) in the financial sector?

Generally, Deutsche Börse Group believes that European legislative framework for financial services does not prevent the introduction of blockchain based services. Services based on new technology – be it in the area of blockchain or other FinTechs – need to abide to the same rules as incumbents to ensure investor protection as well as the integrity and stability of the financial system.

However, while it is still too early to determine concrete need for legislative action, it already becomes apparent that there are some areas of legal uncertainty connected to blockchain-based applications that need to be considered in depth, in close dialogue between market participants and regulators. These include:

- The legal nature of a tokenised representation,
- When settlement finality is reached,
- Smart contracts and their legal status as well as liability for coding errors,
- How to identify the applicable jurisdiction or relevant laws in a decentralised system.

In addition to that, the “classical” legal issues in cross-border trading also affect blockchain-based services, for instance unharmonised rules as to security ownership and corporate actions processes as well as company and insolvency laws and differing tax regulation across EU Member States.

When it comes to smart contracts, it is first of all, important to understand that they do not necessarily require a system based on blockchain technology. Business logic codes are currently already used in centralized systems. The discussion is not easy as the term smart contract covers many different potential functionalities.

Some corporate action events that are known in advance could be automated through smart contracts, theoretically reducing errors caused by manual processing. However, smart contracts will struggle to automate unpredictable and complex corporate actions. Whether smart contracts will be helpful in reducing legal disputes depends on their legal nature going forward.

Generally, Deutsche Börse Group takes the view that it is not the smart contract that needs to be enforceable by law, but the result it takes into effect.

Outsourcing and other solutions with the potential to boost efficiency

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

Question 2.10: Is the current regulatory and supervisory framework governing outsourcing an obstacle to taking full advantage of any such opportunities?

- Yes
- No
- Don't know / no opinion / not relevant

Please elaborate on your reply to whether the current regulatory and supervisory framework governing outsourcing is an obstacle to taking full advantage of any such opportunities.

Please refer to our answer to question 2.5

Question 2.11: Are the existing outsourcing requirements in financial services legislation sufficient?

- Yes
- No
- Don't know / no opinion / not relevant

Please elaborate on your reply to whether the existing outsourcing requirements in financial services legislation are sufficient, precising who is responsible for the activity of external providers and how are they supervised. Please specify, in which areas further action is needed and what such action should be.

Existing requirements on outsourcing are being regularly amended based on current supervisory and market practices and under consideration of international and European developments in the field of outsourcing. We consider this framework of rules and guidelines as generally sufficient, while the currently discussed adjustment on outsourcing to cloud computing (once finalized) are being regarded as useful amendments (s. Q 2.5).

In any case, the financial institution outsourcing parts of its activities to external providers of any kind remains ultimately responsible for the performance of its regulated activities towards its clients as well as supervisors. Supervision occurs along the outsourcing chain. A dedicated supervision (including a potentially required authorization) of external service providers in general is not deemed necessary while for specific activities this might be considered.

Other technologies that may increase efficiency for the industry

Question 2.12: Can you provide further examples of financial innovations that have the potential to reduce operational costs for financial service providers and/or increase their efficiency and of the related challenges?

FinTechs are characterized by a leaner and more agile business setup, as they usually apply a Greenfield approach when building their services. They create an own ecosystem that fosters the collection of vast amounts of data and builds trusted client relationships. Incumbent market participants can benefit from cooperating with FinTechs by realising the importance of these ecosystems and attempting to engage with and bring innovation inside their companies.

Partnerships with innovative FinTechs allows incumbents to outsource part of their R&D and product development to some extent and to bring solutions to the market more quickly. FinTechs can thus act as an “extended workbench”. FinTech companies are putting their spotlight on emergent technologies such as biometric security, natural language searches, chatbots, blockchain, AI as well as biometric and identity management: As they cooperate with incumbents, the latter can adopt these solutions where applicable, enhancing client service, improving efficiency, reducing costs, increasing security and making processes more agile.

On the other hand, FinTechs benefit from the existent customer base, the branding, the experience and the reputation of the incumbent. In addition to that, such a partnership allows FinTech to test their new services and models with larger historical data sets incumbents have acquired over time.

3. Making the single market more competitive by lowering barriers to entry

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

A key factor to achieving a thriving and globally competitive European financial sector that brings benefits to the EU economy and its society is ensuring effective competition within the EU single market. Effective competition enables new innovative firms to enter the EU market to serve the needs of customers better or do so at a cheaper price, and this in turn forces incumbents to innovate and increase efficiency themselves. Under the EU Digital Single Market strategy, the EU regulatory framework needs to be geared towards fostering technological development, in general, and supporting the roll-out of digital infrastructure across the EU, in particular. Stakeholder feedback can help the Commission achieve this goal by highlighting specific regulatory requirements or supervisory practices that hinder progress towards the smooth functioning of the Digital Single Market in financial services. Similarly, such feedback would also be important to identify potential loopholes in the regulatory framework that adversely affect the level playing field between market participants as well as the level of consumer protection.

Question 3.1: Which specific pieces of existing EU and/or Member State financial services legislation or supervisory practices (if any), and how (if at all), need to be adapted to facilitate implementation of FinTech solutions?

Full identification and verification of the customers identity (KYC) are the main drivers for customer acquisition costs for FinTech Startups. While Deutsche Börse Group is fully aware of the importance of these measures to ensure the integrity of the financial system, we believe that a full KYC should not be required in a field of low risk, e.g. low value/frequency P-2-P transactions where there is no risk of Money Laundering or the Financing of Terrorism.

Even the Financial Action Task Force (FATF) could not find any cases where low value transactions have been used for laundering money in a noticeable manner. In fact, the fully regulated banking sector applying all KYC standards was the main target for such activities [1].

On a more general note, it would be helpful to harmonise definitions throughout the single rulebook. This could lead to more efficiency in case of technological applications including ontological data bases for the set-up of RegTech solutions.

[1] http://www.ctif-cfi.be/website/images/EN/typo_fatf/tfrisks.pdf

Question 3.2.1: What is the most efficient path for FinTech innovation and uptake in the EU?

Examples like the Californian Silicon Valley highlight the need for a start-up ecosystem to foster the development of innovative new services. Deutsche Börse Group believes that an effective European start-up ecosystem would not only benefit FinTechs, but also start-ups beyond the financial sector to the benefit of European growth and competitiveness.

There are different aspects characterizing a start-up ecosystem, not all of which are within the control of the EU:

- Infrastructure (including affordable office space, availability of broadband networks, network effects with other start-ups and incumbents),
- Access to finance (especially early stage risk financing),
- Tax incentives (a tax regime incentivising investments in research and development and allowing for loss carryback and loss brought forward etc.),
- Skilled labour (application oriented university education, availability of qualified experts),
- A positive attitude toward entrepreneurs and start-ups (reduced red tape for entrepreneurs, one-stop-shops in dealing with supervisors, a second chance mentality etc.),
- Adequate data protection rules.

In terms of more direct steps to be taken, supervisors on national and European level can play an important role in supporting innovative FinTechs by establishing a one-stop-shop contact point, bringing together expertise from different financial services area.

Question 3.2.2: Is active involvement of regulators and/or supervisors desirable to foster competition or collaboration, as appropriate, between different market actors and new entrants?

- Yes
- No
- Don't know / no opinion / not relevant

FinTech has reduced barriers to entry in financial services markets

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

But remaining barriers need to be addressed

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

Question 3.3: What are the existing regulatory barriers that prevent FinTech firms from scaling up and providing services across Europe? What licensing requirements, if any, are subject to divergence across Member States and what are the consequences? Please provide the details.

Question 3.4: Should the EU introduce new licensing categories for FinTech activities with harmonised and proportionate regulatory and supervisory requirements, including passporting of such activities across the EU Single Market?

- Yes
- No
- Don't know / no opinion / not relevant

Question 3.5: Do you consider that further action is required from the Commission to make the regulatory framework more proportionate so that it can support innovation in financial services within the Single Market?

- Yes
- No
- Don't know / no opinion / not relevant

If you do consider that further action is required from the Commission to make the regulatory framework more proportionate so that it can support innovation in financial services within the Single Market, please explain in which areas and how should the Commission intervene.

To the benefit of investor protection and financial integrity, the guiding principle should be that the same rules should apply to the same services, regardless of which entity is providing them. Deutsche Börse Group takes the view that supervisory convergence is a vital element for both established financial markets institutions and FinTechs to fully realize the growth potential of the single market - the EU should thus continue to focus on ensuring market harmonisation, stability and transparency, regardless of the technological underpinnings.

One area within which greater proportionality would be helpful in stimulating FinTech innovation is the full identification and verification of the customers identity (KYC), which are the main drivers for customer acquisition costs for FinTech Startups. While Deutsche Börse Group is fully aware of the importance of these measures to ensure the integrity of the financial system, we believe that a full KYC should not be required in a field of low risk, e. g. low value/frequency P-2-P transactions where there is no risk of Money Laundering or the Financing of Terrorism.

Question 3.6: Are there issues specific to the needs of financial services to be taken into account when implementing free flow of data in the Digital Single Market?

- Yes
- No
- Don't know / no opinion / not relevant

Please elaborate on your reply to whether there are issues specific to the needs of financial services to be taken into account when implementing free flow of data in the Digital Single Market, and explain to what extent regulations on data localisation or restrictions on data movement constitute an obstacle to cross-border financial transactions.

Some Member States currently apply bank secrecy regulations that may result in regulatory reporting service providers being required to host infrastructure in that particular Member State - which is both inefficient and inconsistent with the goals of the Capital Markets Union. A solution to this problem would be to apply Article 9(4) EMIR for all regulatory reporting requirements within the EU.

Question 3.7: Are the three principles of technological neutrality, proportionality and integrity appropriate to guide the regulatory approach to the FinTech activities?

- Yes
- No
- Don't know / no opinion / not relevant

Please elaborate on your reply to whether the three principles of technological neutrality, proportionality and integrity are or not appropriate to guide the regulatory approach to the FinTech activities.

Deutsche Börse Group fully supports the three guiding principles of technological neutrality, proportionality and integrity.

Role of supervisors: enabling innovation

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

Question 3.8.1: How can the Commission or the European Supervisory Authorities best coordinate, complement or combine the various practices and initiatives taken by national authorities in support of FinTech (e.g. innovation hubs, accelerators or sandboxes) and make the EU as a whole a hub for FinTech innovation?

Deutsche Börse Group takes the view that supervisory convergence is a vital element for both established financial markets institutions and FinTechs to fully realize the growth potential of the single market - the EU should thus continue to focus on ensuring market harmonisation, stability and transparency, regardless of the technological underpinnings. In terms of more direct steps to be taken, the ESAs can play an important role in supporting innovative FinTechs by establishing a one-stop-shop contact point, bringing together expertise from different financial services area, and promoting such structures on national level.

Question 3.8.2: Would there be merits in pooling expertise in the ESAs?

- Yes
- No
- Don't know / no opinion / not relevant

Please elaborate on your reply to whether there would be merits in pooling expertise in the European Supervisory Authorities.

Question 3.9: Should the Commission set up or support an "Innovation Academy" gathering industry experts, competent authorities (including data protection and cybersecurity authorities) and consumer organisations to share practices and discuss regulatory and supervisory concerns?

- Yes
- No
- Don't know / no opinion / not relevant

If you think the Commission should set up or support an "Innovation Academy" gathering industry experts, competent authorities (including data protection and cybersecurity authorities) and consumer organisations to share practices and discuss regulatory and supervisory concerns, please specify how these programs should be organised.

Deutsche Börse Group fully supports the idea to establish an "Innovation Academy" bringing together established and new market participants, supervisors, regulators and consumer organisations, with a view to monitoring technological developments, understanding their consequences and discussing whether the existing legislative framework is fit for purpose. Establishing such a forum for a regular dialogue bringing together different perspectives would be especially useful in the FinTech area, given that future applications typically do not only focus on one industry use case or one specific customer type.

Establishing a "Fintech Advisory Board" that represents Fintech perspectives would also be helpful in integrating the FinTechs in the debate.

Question 3.10.1: Are guidelines or regulation needed at the European level to harmonise regulatory sandbox approaches in the MS?

- Yes
- No
- Don't know / no opinion / not relevant

Please elaborate on your reply to whether guidelines or regulation are needed at the European level to harmonise regulatory sandbox approaches in the MS?

Deutsche Börse Group takes the view that Fintech companies should not be treated different than established businesses. This is not only a question of level playing field, but a special treatment could potentially hamper FinTechs in a future stage of development, e.g. if the business model only works with a tailored regulatory framework and would not be viable in a real-world setting.

Generally, every company providing the same services should apply to the same rules no matter by which authority they are supervised to ensure a level playing field. Deutsche Börse thus fully supports the work of the ESAs regarding supervisory convergence to foster a common supervisory culture among national competent authorities.

Question 3.10.2: Would you see merits in developing a European regulatory sandbox targeted specifically at FinTechs wanting to operate cross-border?

- Yes
- No
- Don't know / no opinion / not relevant

Question 3.11: What other measures could the Commission consider to support innovative firms or their supervisors that are not mentioned above?

The Commission could encourage the ECB and national Central Banks to explore and innovate on FinTech solutions. The focus on Central Bank Money currently in place should be replicated with FinTechs as well.

Role of industry: standards and interoperability

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

Question 3.12.1: Is the development of technical standards and interoperability for FinTech in the EU sufficiently addressed as part of the European System of Financial Supervision?

- Yes
- No
- Don't know / no opinion / not relevant

Please elaborate on your reply to whether the development of technical standards and interoperability for FinTech in the EU is sufficiently addressed as part of the European System of Financial Supervision.

Not only in the area of blockchain-based applications, interoperability between each other and with legacy systems will be a key requirement for most use cases for the efficiency gains of the technology to materialise, especially as we can expect a gradual deployment of such application and different co-existing blockchain based networks.

While the development of global technical interoperability standards would facilitate this by providing a base layer of connectivity, experience show that such standards will be hard to establish in time to make a difference (e.g. complicated process to establish a LEI).

Deutsche Börse Group would thus argue for market-based solutions including a commitment to a general necessity of interoperability.

Question 3.12.2: Is the current level of data standardisation and interoperability an obstacle to taking full advantage of outsourcing opportunities?

- Yes
- No
- Don't know / no opinion / not relevant

Please elaborate on your reply to whether the current level of data standardisation and interoperability is an obstacle to taking full advantage of outsourcing opportunities.

Question 3.13: In which areas could EU or global level standards facilitate the efficiency and interoperability of FinTech solutions? What would be the most effective and competition-friendly approach to develop these standards?

Standards in the following areas would be helpful in facilitating the development of FinTech solutions:

- API design,
- Cloud interoperability,
- Interoperability between Blockchain platforms,
- Smart contract coding standards and liability, and the legal quality of smart contracts.

Question 3.14: Should the EU institutions promote an open source model where libraries of open source solutions are available to developers and innovators to develop new products and services under specific open sources licenses?

- Yes
- No
- Don't know / no opinion / not relevant

Please elaborate on your reply to whether the EU institutions should promote an open source model where libraries of open source solutions are available to developers and innovators to develop new products and services under specific open sources licenses, and explain what other specific measures should be taken at EU level.

Deutsche Börse Group supports the idea to establish an open source model, making libraries of open source solutions available to developers and innovators. Such an initiative has the potential to foster greater levels of innovation.

Challenges

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

Question 3.15: How big is the impact of FinTech on the safety and soundness of incumbent firms? What are the efficiencies that FinTech solutions could bring to incumbents? Please explain.

Technology has always been a source of structural change for financial markets, for instance with the rise of electronic trading. FinTech and RegTech has the potential to support the market to overcome certain barriers, while delivering efficiency gains and supporting risk mitigation. It could thus have ramifications throughout the whole lifecycles of securities on capital markets.

There are a number of different technologies having the potential to change the roles of financial markets infrastructures within the financial industry. Examples include cloud computing support, the streamlining of IT architecture and harmonization of applications, as well as robotics, data analytics and Artificial Intelligence (AI) enabling faster capture of the value.

However, using these new technologies should not be seen as an end to itself. It always needs to be carefully assessed whether the equivalent result to current ways of operating - in terms of transparency, stability and regulatory compliance - can rather be achieved with alternative technology, by improving existing technology or possibly through a combination of both. We believe that combining innovative technologies, for instance blockchain based technologies, with established, highly regulated market infrastructures, such as Deutsche Börse, would be the natural choice in order to ensure market stability while making use of the innovative potential brought about through FinTech.

4. Balancing greater data sharing and transparency with data security and protection needs

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

Question 4.1: How important is the free flow of data for the development of a Digital Single Market in financial services? Should service users (i.e. consumers and businesses generating the data) be entitled to fair compensation when their data is processed by service providers for commercial purposes that go beyond their direct relationship?

Free float of data is an important prerequisite for the creation of a single digital EU market.

Free float of data should be understood as:

- non-discriminatory access to data,
- data availability across the EU in line with EU regulations, e.g. as regards data protection,
- no national regulations hindering EU Service Providers to offer services in all EU Member states without the necessity to have technical operations within all / or one respective Member state (e.g. as regards bank secrecy regulations).

As to the entitlement for compensation when data is processed by service providers for commercial purposes, we understand the situation lined out above as follows:

- any service is being provided by the service provider to users,
- any direct relationship refers to the service used by the consumer / business generating the data.

However, there is not a one size fits all answer at all unfortunately.

Usually, single data points (e.g. one purchase) are not worth a lot. The value usually lies within a database of similar data, or in the creation of value on raw data. The value creation as such does not happen on the side of the single consumer but rather on the side of the service provider.

Some business models provide free service/s to users in order to attract data for revenue generation. While a compensation may happen, it could render free of charge services obsolete. Free of charge services may be considered as a compensation already.

Some business models are being funded across various revenue sources, data being one of them. In case of changes to the model, other revenue generating services may have to become higher priced while additional administration cost may apply and be passed on to end users. Therefore, such models should be able to prevail as long as access to such data is being provided at non-discriminatory terms to interested parties and in line with EU regulations. Changing the structure of revenue sources may significantly change the structure of doing business in already established industries with unknown but potentially negative side effects for the industry, while increasing administration along the value chain.

Quality and reliability of data plays a significant role in order to avoid any risk for further use. In this context risk and liabilities play a significant role. Again, no one size fits all model should be applied in this case unless there are more concrete use cases to start with.

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

Question 4.2: To what extent could DLT solutions provide a reliable tool for financial information storing and sharing? Are there alternative technological solutions?

Generally, traceability is a key advantage of DLT systems based on the blockchain concept of interlinked blocks. In theory, blockchain technology could significantly improve supervision, e. g. by giving supervisors access rights or letting them participate as a node in the system and enabling them to supervise the system in real-time.

However, in practice it might be more sensible to grant supervisors access to the data upon request instead of them running a node:

- Where there are multiple blockchain systems potentially running in parallel to legacy systems, there would still be a need for the regulator to consolidate the data based on records received from each infrastructure to the detriment of efficiency. In addition to that, the overall quality of the data would naturally be at the lowest common denominator.
- Providing access to the data upon request would still improve supervision as data is replicated and hence completeness is ensured. The time difference of being a node vs. not being a node would not make a significant difference.
- Regulators being part of the blockchain might also lead to potential reputational risks, for instance a blurred distribution of responsibility between firms and regulators.

Question 4.3: Are digital identity frameworks sufficiently developed to be used with DLT or other technological solutions in financial services?

- Yes
- No
- Don't know / no opinion / not relevant

Please elaborate on your reply to whether digital identity frameworks are sufficiently developed to be used with DLT or other technological solutions in financial services.

Question 4.4: What are the challenges for using DLT with regard to personal data protection and how could they be overcome?

There is a need for privacy and confidentiality in the course of daily business in financial services. The identity of a party to a transaction is usually not public unless legal provisions require the disclosure of this information.

Therefore, it is of utmost importance that blockchain based networks are designed in a way that protects privacy when necessary without hampering the technology's benefits. Deutsche Börse is aware of the privacy needs of its customers and is exploring ways to deal with the problem.

The extent of the privacy issues depends on the type of information that is stored on the blockchain and on the governance of the respective system. Blockchain based systems are capable of defining roles and limiting access to information based on these roles.

The power of big data to lower information barriers for SMEs and other users

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

Question 4.5: How can information systems and technology-based solutions improve the risk profiling of SMEs (including start-up and scale-up companies) and other users?

Question 4.6: How can counterparties that hold credit and financial data on SMEs and other users be incentivised to share information with alternative funding providers ? What kind of policy action could enable this interaction? What are the risks, if any, for SMEs?

Security

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

Question 4.7: What additional (minimum) cybersecurity requirements for financial service providers and market infrastructures should be included as a complement to the existing requirements (if any)? What kind of proportionality should apply to this regime?

Question 4.8: What regulatory barriers or other possible hurdles of different nature impede or prevent cyber threat information sharing among financial services providers and with public authorities? How can they be addressed?

Question 4.9: What cybersecurity penetration and resilience testing in financial services should be implemented? What is the case for coordination at EU level? What specific elements should be addressed (e.g. common minimum requirements, tests, testing scenarios, mutual recognition among regulators across jurisdictions of resilience testing)?

Other potential applications of FinTech going forward

Please [refer to the corresponding section of the consultation document](#)  to read some contextual information before answering the questions.

Question 4.10.1: What other applications of new technologies to financial services, beyond those above mentioned, can improve access to finance, mitigate information barriers and/or improve quality of information channels and sharing?

Question 4.10.2: Are there any regulatory requirements impeding other applications of new technologies to financial services to improve access to finance, mitigate information barriers and/or improve quality of information channels and sharing?

- Yes
- No
- Don't know / no opinion / not relevant

Please elaborate on your reply to whether there are any regulatory requirements impeding other applications of new technologies to financial services to improve access to finance, mitigate information barriers and/or improve quality of information channels and sharing?

3. Additional information

Should you wish to provide additional information (e.g. a position paper, report) or raise specific points not covered by the questionnaire, you can upload your additional document(s) here:

Useful links

[More on the Transparency register \(http://ec.europa.eu/transparencyregister/public/homePage.do?locale=en\)](http://ec.europa.eu/transparencyregister/public/homePage.do?locale=en)

[Consultation details \(http://ec.europa.eu/info/finance-consultations-2017-fintech_en\)](http://ec.europa.eu/info/finance-consultations-2017-fintech_en)

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