association of the luxembourg fund industry

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Response to European Commission Consultation Document

FINTECH : a more competitive and innovative European Financial Sector

Introduction

The Association of the Luxembourg Fund Industry (ALFI) is the representative body of the Luxembourg investment fund community. Created in 1988, the Association today represents over 1300 Luxembourg domiciled investment funds, asset management companies and a wide range of service providers such as custodian banks, fund administrators, transfer agents, distributors, legal firms, consultants, tax experts, auditors and accountants, specialist IT providers and communication companies. The Luxembourg Fund Industry is the largest fund domicile in Europe and a worldwide leader in cross-border distribution of funds. Luxembourg-domiciled investment structures are distributed on a global basis in more than 70 countries with a particular focus on Europe, Asia, Latin America and the Middle East.

We thank the EU Commission for the opportunity to participate in this consultation on FINTECH : a more competitive and innovative European Financial Sector.

We support the submission of the European Fund and Asset Management Association (EFAMA).

Response to the consultation

Questions

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?

Members of ALFI have been for many years and will continue to be highly dependent on Financial Technology such as custody, clearing, investment accounting, transfer agency, compliance, reporting, reconciliation, performance attribution and other front office software for the dealing processing of front, middle and back office asset management processing, as well as custodian services, fund administration, distribution and investor servicing. Newer areas of 'FinTech' such as big data analytics, artificial intelligence, digital investing such as robo-advice or social investments and other potential applications of distributed ledger technology (Blockchain or otherwise) are coming more prevalent in the asset management market, although many are at early stage of adoption or even conceptual only in some cases. Where FinTech solutions benefit the end investor and the wider industry by either reducing cost through efficiency or offering new investment products (ETF or alternative funds) or easing distribution via traditional or digital channels, ALFI members are highly supportive of the adoption.

Luxembourg, being the largest European Fund industry, is active on the domain of Blockchain solutions around the Transfer Agent & Distribution. FundChain, through a consortium of 12 players, is an initiative aiming of exploring the potential of the blockchain to the Fund Industry

Association of the
Luxembourg Fund Industry
a.s.b.l.

12, rue Erasme
L-1468 Luxembourg
B.P. 206
L - 2012 Luxembourg

Tel: +352 22 30 26 - 1
Fax: +352 22 30 93
info@alfi.lu
www.alfi.lu

TVA LU 23710105
R.C.S. F4428

FundsDLT, is a key initiative around the Asset Management aiming of exploring the potential of the blockchain to the Fund Industry, including AML KYC solution. Infrachain is a nationwide initiative for building a blockchain technology infrastructure layer to be used for pan-European initiatives. In addition, many players have already started private initiatives.
Luxembourg is also at the forefront in terms of RegTech, FinTech solutions aiming at gaining efficiency and automation in non-subjective regulatory processes such as KYC or transactions reporting.
In the area of peer-to-peer lending initiatives are relatively new in Luxembourg- Given the limited size of the Luxembourg market, these initiatives focus on pan-European reach both from an origination and distribution perspective-. Those initiatives however have been hampered by the lack of bespoke pan-European legislation on that topic. The peer-to-peer lending and crowdfunding platforms are relatively new, only few cases have been set-up. So the use is limited and concerns mainly in the refinancing area.
We also see first Asset Managers showing interest in creating funds investing in crypto-currencies with disruptive asset servicing target operating models around the Blockchain.

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.) and at what pace? Are these services better adapted to user needs? Please explain.

Today automated financial advice has not reached a significant number of consumers and the pace of growth is slow. Conceptually, easy to use and widely available automated financial advice such as robo-advisors should facilitate a wider array of consumers investing in investment products in an automated way, particularly in light of the RDR in the UK, and MIFID II in Europe impacting the traditional compensation model of advisors such as IFA, RIA and Banks. However today the robo-advice market is still a very small percentage of the wider market. According to analysis by My Private Banking research forecasts that by 2020 the global assets under management of robo-advisers is to grow to an estimated US $255bn compared $71.4Tr (source BSG), or less than 0.5% of the market. So the pace of wide spread adoption is still very low, even though theoretically these typically online services are easy to use. One of the issues identified potential hindering the adoption is the cost of these services – the average consumer cost of robo-Aavisors in the UK is the similar and sometimes even higher than traditional providers.

More recently we have whitnessed a change in strategy of some robo-advisers. Some have partnered with established banks and wealth managers and other have pivoted from B2C to a B2B model.
We also recently saw a Luxembourg based on-line bank offering its own robo-advisory solution.

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? What could be effective alternatives to such a system?

The genuine application of true artificial intelligence is still in its infancy across all industries, and particularly in the asset management industry. Applying machine learning and more sophisticated AI techniques, where it benefits the consumer or the industry, should be encouraged. The possible risk is a specific algorithm resulting in systemic or industry wide impact, which due to the lack of adoption in the industry at this stage seems unlikely. As a result additional oversight may hamper innovation and not be justified at this point in time.

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)?

We believe that enough information should be given on the product portfolio so that investors take well-informed decisions. In this regard, we believe that MiFIDII & GDPR rules are sufficient.

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?

As mentioned above robo-advice is still a small part of the investment market (less than 0.5%) other applications of big data analytics in the asset management is similarly still at the relatively early stages compared to other industries – this is partly due to the fragmented nature of the data across the investment and distribution value chain. As such, the current investor protections and control embodied in industry wide regulations such as UCITS V and MIFID 2, as well as the upcoming European data protection regulatory (GDPR) should be sufficient to protect consumers on the basis they are applied equally to robo-advisor, for example, as they are in the existing parts of the industry.

1.6. Are national regulatory regimes for crowdfunding in Europe impacting on the development of crowdfunding? In what way? What are the critical components of those regimes?

The countries where the national regulatory regimes have been implemented have attracted entrepreneurs as these latter seem to appreciate to have a dedicated regime. The success factors of those regimes are:

- *straight forward legal regime;*
- *specific licence;*
- *creation of a type of recognition;*
- *regulation in proportion to the size of the platforms*

In order to enhance cross-border take-up of crowdfunding in Europe in line with the objectives of the Capital Market Union, the EU would benefit from a European wide legislation.

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?

Crowdfunding and peer-to-peer lending market is fragmented. A recognized and dedicated, legal framework (to avoid the pitfalls linked to the potential risks linked to these activities) is the key element for their development to enhance the trust in the potential investors. Appropriate and proportional regulation would ensure customer protection whilst fostering not hampering innovation.

Therefore to develop these activities it might be an idea that the EU Commission creates an adapted European legal framework including adequate/proportionate supervision by a state authority. This framework should include a cross-border distribution feature as well as a cross-border origination feature.

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?

Where the level of transparency increases the level of trust and comfort increase as well. Transparency should be a cornerstone of a proportionate EU wide regulation.

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?
Not applicable.

1.10. Are there already examples of price discrimination of users through the use of big data? Can you please provide examples of what are the criteria used to discriminate on price (e.g. sensor analytics, requests for information, etc.)?
Not applicable.

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?
In the Investment Management space, we also see "Social Trading" as a new trend. Social Trading works by sharing trades and investment ideas as well as by mirroring the transactions of a star trader or peer investor with similar risk & return appetite.
P2P lending has proven to be useful in the provision of financial capital to SMEs and individuals that otherwise would potentially not have benefitted from a loan through a traditional financial institution.

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?
In general terms Financial Technology or FinTech has already, over the years, applied to automation and thereby reducing costs in the asset management industry. A program of continuous improvement by renovating, simplifying and modernizing often times overly complex 'spaghetti nest' or patch-work of systems should be promoted. In addition, there are two most promising use-cases that ALFI is focused on. Firstly an AML / KYC utilities or shared processing model where the checking of the investor details and documentation is mutualized across the industry avoiding the duplicated efforts currently undertaken. Secondly, the analysis of application of Blockchain or other Distributed Ledger Technology (DLT) in relation to end-to-end shareholder transaction processing.
In addition, we also believe that Asset Managers will be able to interact directly with the end investors via 3.0 fund platforms combining robo-advisory, trading, settlement, aggregated shareholder reporting, social investment, discussions blogs or investment objectives based performance tracking.

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?
At a high level the EU should continue to encourage the investment and development of FinTech solutions to ensure that the EU keeps pace or exceeds other global markets. Mainly FinTech programs, particularly within Banks, are stopped at the early stages due to risks and uncertain business cases. Potentially the EU could consider tax based incentives for FinTech providers and or programs within financial service organizations on the basis of criteria for

improving and reducing costs to financial services for the consumer for example. More specifically an EU support or even driven initiative for a utility of shared service model for AML / KYC would be of benefit as well as a dedicated pan-European peer-to-peer lending and equity crowdfunding legislation.

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?

As with any increased automation in any industry we anticipate a shift from operational profiles to more "engineering" type of profiles that can design, implement and monitor innovation in the value chain.

It is also important to note that the current and future prudential requirements imposed to asset managers constrain the variable remuneration of an employee within asset management.

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?

A promising use case in RegTech could be the creation of an industry wide AML/KYC utility. At this stage of implementation of RegTech, the involvement of local regulators at national level is key. Coordination at EU level should come once some of the use-cases are more advanced. In addition to this, we would also see a strong case for transactions reporting and regulatory screening.

2.5. What are the regulatory or supervisory obstacles preventing financial services firms from using cloud computing services? Does this warrant measures at EU level?

In order to support and facilitate a responsible adoption of cloud computing within the banking industry, the European Commission should focus on efforts that support the creation of a clear and consistent regulatory framework at an EU and Global level, and guarantee a proportionate risk-based approach to due diligence and contracts between the Cloud Servicing Providers (CSPs) and the banking sector in respect of Cloud Computing in Financial Services.

2.6. Do commercially available cloud solutions meet the minimum requirements that financial service providers need to comply with? Should commercially available cloud solutions include any specific contractual obligations to this end?

This varies widely between service providers. Some of the more mature service providers have made progress in offering terms which enable financial services firms to comply with the applicable regulatory / supervisory framework. However, other service providers fail to accommodate these requirements. Overall, the position is that financial services firms have difficulty in finding cloud based solutions that enable them to clearly comply with the applicable regulatory / supervisory framework.

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

The use of DLT to create a secondary market for private debt at an EU level could contribute to addressing the financing gap in the economy.

More generally, scalability and performance of the DLT are clear hurdles. They need to be addressed over the next years through a change of paradigm in the existing or new DLT technologies. New DLT technologies – mostly used in private DLT - are switching their consensus mechanisms from a "proof of work" to a "proof of stake" (or other algorithms). This

is supposed to remove the main scalability, performance and cost obstacles for a larger adoption in the securities markets. Those new technologies will probably be available and ready when the on-going Proof-of-Concepts will deliver their results.

Recent discussions with some central banks seem to support the fact that central banks might be part of some ledgers, hence issuing central bank money into some DLT and allowing a full DVP settlement in central bank money within the DLT.

From a regulatory perspective, the DLT should ideally not be subject to strict regulations that in-hibit the early adoption. Network supervision should not be more complex than the central market infrastructure. The emphasized requirements should be ideally managed by standard policies on the distributed ledger.

On the other side, common regulations across the industry will be a key success factor.

Even if scalability issues will probably be resolved using private DLT or/and different types of consensus mechanisms, some other challenges might be encountered:

- *With an increasing transaction volume and thus more mined blocks, there is a greater possibility that problems of contender chains and hence forks arise*
- *A badly implemented consensus can lead to centralisation when e.g. priority is given to the highest bidder which then becomes a central node*
- *Questions regarding release management/change management need to be addressed properly as operating the DLT over the long run will be difficult for more complex transactions*
- *The overall governance of the smart contracts will also need to be considered*

Governance of the DLT and smart contracts will also be a clear challenge. In that sense, private DLT might help both in terms of compliance with the regulatory framework and in terms of respect of privacy and transparency. It is not clear neither whether a new regulatory framework would be required – especially considering the cross-border nature of the DLT – nor whether the existing framework might be applied.

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

On top of the technical standards, Business Standardisation is crucial to ensure that the overall securities market can work with the new DLT – both in terms of automation but also in terms of interoperability. It was proven that market efficiency was linked to the broad adoption of business standards. A lot of standards have been defined in the Financial Services and the most used one (SWIFT, fpml, fix,…) would need to either be adopted in DLT or translated into DLT (e.g. through smart contracts processing standardisation).

There is also a risk of seeing the multiplicity of smart contracts doing the same action, users of the DLT will therefore face a problem of finding the right smart contract for a specific action, and therefore assessing which one would be the best suited for its business.

And last but not least, questions regarding the treatment of regulations such as the General Data Protection Regulation.

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?

Since the assets booked in DLT solutions are difficult to locate, the law governing the "in rem"

aspects of security rights on such assets might be difficult to determine. Difficulties may also emerge regarding seizures of assets and the determination of the competent national authorities and courts in this respect, again due to the difficulty of locating assets booked in distributed ledger.
Smart contracts also raise issues with regards to consumer protection, parties responsibilities & liabilities within the ledger and the delegation or split of rights and duties.

There should be a regulatory standardization in this context for the smart contracts avoiding potential legal issues.

2.10. Is the current regulatory and supervisory framework governing outsourcing an obstacle to taking full advantage of any such opportunities?
Current regulatory and supervisory framework is an obstacle to take full advantage of cloud computing technology. Regulation imposes a burdensome process for financial outsourcing approval and there is a need to bring efficiency to this process.

2.11. Are the existing outsourcing requirements in financial services legislation sufficient? 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.
The existing outsourcing requirements in financial services legislation appear sufficient at this stage, as a rather extensive regulatory framework already exists in this field.

The responsibility towards customers and regulators for outsourced activities remains in principle with the regulated entity which has outsourced such activity. The regulated entity may, however, contractually stipulate indemnification arrangements with its service providers. Applicable outsourcing requirements provide that the regulated entity must monitor on a regular basis the quality of the activity performed by external providers, appoint a person who is specifically in charge of managing the outsourcing relationship, and must be able to proceed with relevant verifications at the level of external providers (and ensure that verification possibilities are also granted to its internal control functions, auditors and regulators). Certain external providers are directly supervised by regulators due to the nature of their activities.

Areas in which further action may be needed is ensuring that data protection rules do not become an obstacle to outsourcing arrangements and ensuring that outsourcing requirements are compatible with the use of new technologies such as cloud services and distributed ledger technology.

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?
As mentioned above, analysis of application of Blockchain or other Distributed Ledger Technology (DLT) to reduce cost. Also application DLT in the AML / KYC and digital investing areas, this technology could be more widely used applied in payments, and the distribution value chain. There are significant scalability, security, regulation (e.g. right to be forgotten) and adoption issues to overcome to make this usable in the mainstream. Even if the technology is more mature than the other innovations listed above, we should also mention Robotic Process Automation as a major potential operational streamlining solution.
In the long-run, artificial intelligence solutions might support, improve or replace human decision making in a number of internal processes.

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?

The GDPR Directive and the obligation for financial services in Luxembourg to host their server/cloud based solutions in Luxembourg to be compliant with the national Law. The Law should allow Financial Services to mutualise their data centre as long as it is located in Europe. Customers' data is essential but the cost implied by preventive measures refrain from using new technologies which are mainly cloud or web-based. PSD2 needs to be more flexible in order to drive technology innovation in financial services.

3.2. What is the most efficient path for FinTech innovation and uptake in the EU? Is active involvement of regulators and/or supervisors desirable to foster competition or collaboration, as appropriate, between different market actors and new entrants. If so, at what level?

Connectivity and collaboration between traditional institutions and FinTech firms, each leveraging the other strengths. Education for both sides in how to work with each other and manage the process of procurement through to implementation and support. Active involvement from regulators/supervisors is desirable for sharing experience and making sure the solutions will be compliant to remove barriers for traditional firms to work with FinTechs.

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 details.

Existing local legislations around peer-to-peer lending and equity crowdfunding show divergence. It would be advisable to work on an EU wide legislation. Novel regulatory frameworks around payments (e.g. PSD 2), data protection (GDPR) and securities infrastructure (e.g. CSDR) will also need to be analysed as to their compatibility with the various innovation types.

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? If yes, please specify in which specific areas you think this should happen and what role the ESAs should play in this. For instance, should the ESAs play a role in pan-EU registration and supervision of FinTech firms?

Existing EU licenses with a passporting feature provide an appropriate toolbox for FinTechs. Implementation requirements of such licences with host regulators should be proportionate to the level and nature of activity of such FinTechs. Collaboration between FinTechs and their host regulators will further foster innovation and help create best practices. Such best practices could then be shared with ESAs for further harmonisation at EU level. Luxembourg has a strong pan-EU passport culture via its investment funds, wealth management and insurance expertise and would certainly play a key role on these aspects.

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? If so, please explain in which areas and how should the Commission intervene.

In general, the EU Commission should encourage local regulators to engage with FinTechs in order to accommodate their development within the existing regulatory framework. Proportionality being a key driver for that collaboration.

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? To what extent regulations on data localisation or restrictions on data movement constitute an obstacle to cross-border financial transactions?
Not applicable

3.7. Are the three principles of technological neutrality, proportionality and integrity appropriate to guide the regulatory approach to the FinTech activities?
Yes, the financial services should remain the only one to choose one technology against another, without being driven by the technology used or the regulation applied to this specific type of technology. These three principles refrain monopolies to form and allow the financial services to have a wider choice of solutions.

3.8. 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? Would there be merits in pooling expertise in the ESAs?
The Commission could summarise all the national initiatives in a database and encourage collaboration. Europe is going towards a more harmonised legal and regulatory framework to maintain its competitiveness. Collaboration in such projects is key to share experiences, form consortium, create economies of scale and benefits from experts in the fields of the subject who might not be located in the initiator's country.
The Commission should strengthen the provision of financial means specific to the Fintech sector through its various funding instruments (e.g. H2020, EIB, EIF, etc.) in order to combine them with national initiatives and funding sources. As an example, the Commission could launch a EU-wide call for applications to establish for-profit Fintech incubators, according to the successful models used in Israel (technology incubator programme) or Singapore.

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? If yes, please specify how these programs should be organised?
Yes because sharing experience is key, especially in the regulatory field. Experts and authorities exchange on a national level most of the time, however, some countries might face difficulties/facilities with some regulatory requirements for which they could share the solution, the market practice in their respective countries. The problems encountered with some regulatory requirements could be detected before the entry into force of the directive and the transposition into national Law could be done in collaboration with various experts. These programs should be organised by directive/project on a regular basis (once every 2 months), a forum could be created for each of them to exchange views on a more informal way.

3.10. Are guidelines or regulation needed at the European level to harmonise regulatory sandbox approaches in the MS? Would you see merits in developing a European regulatory sandbox targeted specifically at FinTechs wanting to operate cross-border? If so, who should run the sandbox and what should be its main objective?
Start-ups need proximity and direct contacts within their host country. Sandboxing by definition is a small test and should not require a pan-European structure, which would be complex to coordinate and manage. Post sand-box, the FinTech is expected to apply for a

license that would then provide passporting access to the EU regardless. A European wide initiative may take too long to implement, the need is immediate and local regulators need autonomy to directly interact with FinTechs.

3.11. What other measures could the Commission consider to support innovative firms or their supervisors that are not mentioned above? If yes, please specify which measures and why.

More research on the various new technologies and business models covered by FinTech to help educate regulators and drive standards.

- *Encourage investments in the FinTech area, improve process and transparency for grants for promising projects. Funding is essential for start-ups.*
- *Consider a pan-European equity incentive scheme for early stage investments in FinTech firms/start-ups to help boost activity.*
- *Launch a EU-wide programme for for-profit Fintech incubators according to the models used in Israel (technology incubator programme) or Singapore.*
- *Encourage engagement by traditional licensed institutions such as banks, with Fintech firms by being responsive at a pan-European level in issuing regulatory advice on new business models and technologies, such as blockchain.*
- *Lead by example by publishing points of view about how these innovations represent a major opportunity for the EU.*

3.12. Is the development of technical standards and interoperability for FinTech in the EU sufficiently addressed as part of the European System of Financial Supervision? Is the current level of data standardisation and interoperability an obstacle to taking full advantage of outsourcing opportunities?

No. There is a need for more standardisation and interoperability in all areas of the FinTech field and more broadly, regulatory reporting data management.

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?

Increase collaboration between the European regulators, standardisation in approach, particularly in areas such as lending and invoice finance, would add significant value to growth potential and access to markets.

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? What other specific measures should be taken at EU level?

This would mean regulators accept this practice. This is not currently clarified with some regulators as it has been required by some financial services actors to use solutions with proprietary code.This initiative would benefit everybody, from the financial services to the service providers and startups.

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.

No specific comments on safety and soundness of incumbent firms.

- *FinTech automation could significantly enhance efficiency and minimise operational risk, by reducing the risk of human error.*
- *KYC process could be improved and cost shares amongst the industry participants*
- *Lower customer acquisition cost and help to enhance ROE*

- *Enhance compliance and reporting, creating high standards and reducing manual Administration*
- *Enhancing customer experiences and lowering costs for the customer*

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?
Today there isn't a true Digital Single Market. Should one emerge, the data flow, ownership, control and remuneration would be essential.

4.2. To what extent could DLT solutions provide a reliable tool for financial information storing and sharing? Are there alternative technological solutions?
DLT solutions provide a reliable tool for financial information storing and sharing if the characteristics are met like the needs to share information, the volume of transactions … DLT is sometimes not the solution and a traditional database / utility could be used.
The adoption of the technology is also a determinant in the choice of the technology.

4.3. Are digital identity frameworks sufficiently developed to be used with DLT or other technological solutions in financial services?
Digital identities and Digital Identification and DLT are still at an early stage of development, but viable solutions seem to emerge.

4.4. What are the challenges for using DLT with regard to personal data protection and how could they be overcome?
Some of the key challenges for using DLT with regard to personal data protection are the following:

Data protection rules provide for a series of obligations incumbent on the data controller and a series of rights of the data subjects towards the data controller. In a decentralized and distributed system such as DLT, it may be difficult to identify the data controller who is responsible for the processing of personal data. This creates also issues with the determination of the applicable law, especially where participants in a DLT system are located in different jurisdictions.
Where DLT systems are public and transparent, issues regarding the confidentiality of personal data arise.

Given that DLT systems are generally immutable in the sense that information contained therein may not be edited or deleted, issues with the so-called "right to be forgotten" may arise.

A series of solutions may be explored in relation to the above issues:
- *participants in a DLT model could be viewed as data controllers (which is, however, difficult in a model with several participants), or else participants with specific / additional privileges;*
- *to ensure confidentiality of data, various anonymization and encryption techniques could be used;*
- *as regards the right to be forgotten, the possibility to develop techniques to edit, delete or redact data in DLT systems could be explored (e.g. by a designated user/authority) whilst using techniques allowing to identify that changes have been made.*

In order to enhance legal certainty of the aforementioned solutions, guidance/confirmations by competent authorities would be helpful.

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?
Not applicable

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?
Not applicable

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?
The implementation of GDPR combined with NISD regulations should be completed and reviewed as a first step. Industry wide cybersecurity awareness, education and monitoring is a key area review on an on-going basis, so regulation could encourage that awareness.

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?
We see no particular barriers or hurdles in this respect other than the practical hurdle that there is no specific forum to exchange information with other financial service providers and that the sharing of information needs to occur carefully in order to ensure that the IT security arrangements of the financial service providers are not threatened further due to the exchange of information. A more formal framework for the exchange of cyber threat information with regulators which could pass on relevant information to other supervised entities could be considered.

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)?
Ongoing penetration and resilience testing should be a key element of any financial services system infrastructure, to reduce the threat of breaches. Defining minimum standards would be beneficial to the industry but are not easy to define and monitor.

4.10. 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? Are there any regulatory requirements impeding them?
Connecting the value chain of credit from non-bank financial institutions, through banks/credit institutions, into capital markets. Capital for lending activities should flow freely and with liquidity up and down the chain - this would enable more agility in lending activities for SMEs and consumers. Fintech can help connect the liquidity across the different segments of the value chain.

Appendix: Identification of the stakeholder

- Name and address of the respondent, relevant contact details (including e-mail address for contact):

  Association of the Luxembourg Fund Industry
  12, rue Erasme
  L-1468 Luxembourg
  Contact person for this consultation: François Drazdik (francois.drazdik@alfi.lu)

- If you are registered with the Commission as an "interest representative" your identification number:

  6182372280-83

- Are you a recognised European social partner organisation or a representative of a European (sectoral) social dialogue committee?

  No.

- Field of activity of the respondent. Please specify your field of activity. Please indicate if you are directly affected by any of the measures and if so, which one and to what extent:

  ALFI is the official representative body for the Luxembourg investment fund industry. Being a non-profit organisation, ALFI is not directly affected by any of the measures.

- If the respondent is an association of stakeholders, how many members do you represent and what is your membership structure?

  ALFI represents 1300 investment funds, 247 service provider and 19 associate members.

- Do you object to publication of personal data on the grounds that such publication would harm your legitimate interests?

  No.

- Do you agree to having your response to the consultation published along with other responses?

  Yes.