

Leveraging the benefits of DLT in securities markets

1. Opportunities and challenges associated with the use of DLT in securities markets

1.1 Use cases of DLT in securities markets and lessons learned

An industry representative explained that considerable effort is being made by the financial industry and the public authorities to implement distributed ledger technology (DLT) in the securities market, particularly in post-trading. €30 billion was spent worldwide on DLT projects in 2021 and investments are also significant in Europe. There is a strong belief that DLT can help the post-trade market address many of the remaining inefficiencies in securities markets. DLT can also help the EU securities industry to propose new services. Finally, these technologies could lead to a complete reshaping of the structure and functioning of financial markets that needs to be anticipated. The industry representative described an experiment that was recently conducted by the Banque de France around issuing French sovereign debt on a single permissioned blockchain, which involved the French Treasury, Euroclear, primary and secondary dealers and custodians. This was a way for market players to evaluate the impact of DLT in securities markets in terms of efficiency and safety and to test how this technology could help to manage certain processes such as corporate actions. This experiment also allowed an evaluation of the extent to which the existing market ecosystem would need to be reorganised to make use of DLT and whether this could lead to simplification in the relationship between players, since they were all accessing the same blockchain.

An industry speaker agreed that DLT has the potential to reshape financial markets. Projects should focus on what is most valuable for investors rather than on what is technically feasible. While discussions on cryptocurrencies and the tokenisation of real assets are worthwhile, the main application of DLT will be in the securities markets, because the main needs of investors have not evolved that much. The European Central Bank (ECB) estimates that there are €20 trillion of euro denominated securities that are not shares. If some of these were transformed into digital securities tradable on a blockchain, this could be much more significant than the tokenisation of real assets such as real estate.

An industry representative emphasized that in the US considerable efforts are also being made to further evaluate the potential impacts of DLT and to build

expertise and skills around DLT. Beyond this, a key objective of DTCC in particular, over the last 5 years has been to start operationalising DLT. This started with the work to re-platform the Trade Information Warehouse for credit derivatives on Axoni's blockchain. More recently, two proven and industry-validated innovation proofs-of-concept have been promoted to minimum viable product (MVP¹) status. The first of these is Project Ion, which is built on R3's Corda, a private permissioned DLT platform. This solution will run alongside DTCC's traditional clearing and settlement processes for a subset of clients and cash equities and is a way for the industry to start experimenting in a live production environment with the clearing and settlement of securities on DLT, including the use of different settlement cycles, tokenised assets and application programming interfaces (APIs). This will allow the assessment of client confidence in DLT-based infrastructure and of the added value provided.

The second initiative is the Digital Securities Management Platform, which is an industry-wide regulation-compliant solution focused on the private market space. These markets are hampered by many inefficiencies including manual processes, market fragmentation, a lack of reference-data standards and insufficient compliance enforcement. Some initiatives led in this area by fintechs such as initial coin offerings (ICOs) and security token offerings have faced many regulatory and adoption challenges. After assessing these issues DTCC sought to experiment how blockchain might deliver a solution that would better support US private-market assets from issuance through to secondary trading. This prototype showed that a common infrastructure and further standardisation could bring efficiencies in this market and that a centralised stock record database could bring value to the broker-dealer community, allowing them to hold securities on an investor's behalf in traditional or tokenised form.

The industry representative concluded that the objective of these use cases is not to promote DLT but to create client value. DLT will not solve every problem in the securities market, but it can enable more efficiency. In addition, DLT-based solutions can help the tokenisation ecosystem to take off and provide clients with a regulatory-compliant solution for these assets.

A regulator agreed that the most compelling use cases for DLT are in the securities space, and this is where most projects are happening. However, there is a wide heterogeneity of business models at present and strong uncertainty around which models will succeed. Different technological choices co-exist, leading potentially to

1. A proof of concept is a test of the real-world potential of an incomplete idea. It is not about delivering the idea but demonstrating its feasibility. An MVP aims to accelerate learning about a possible solution with real users, whilst testing only the essential core of the concept, rather than the full solution, in order to use a minimum amount of resources. The objective is to learn early on whether there is an actual need or demand for the solution, to understand what is working and what is not and to make adjustments accordingly.

quite different outcomes: for instance, some blockchains are permissioned, others are non permissioned and involve a recourse to trusted third parties to different degrees. There are also differences in the extent of activities conducted on the blockchain: in some cases all activities are conducted on the blockchain with the objective of eliminating traditional intermediation and maximise productivity gains, in other cases there is only a partial use of DLT and recourse to more traditional players for part of the activities. Regulators should not choose between these different models and should adopt a technology-neutral approach, because there is currently too much uncertainty around the right technological choices. The market should be left to converge towards the best solutions and outcomes.

1.2 Main benefits and efficiencies associated with the use of DLT in securities markets

An industry representative suggested that the implementation of DLT in securities post trading could have a positive impact in four main areas: a reduction or even a removal of reconciliations; easier investor identification; improved cross border settlement; and a reduction in transaction settlement time. The latter impact is often presented as a key benefit of DLT, but the speaker believed that some of the former aspects are more significant. There are also five key benefits for customers and securities markets more generally from the use of DLT. First, the blockchain could create benefits around anti-money laundering (AML) and know your customer (KYC) verifications, particularly for investment funds. Secondly, DLT could facilitate real time and cross-border corporate actions. Thirdly, there could be a benefit for small and medium-sized enterprise (SME) financing from DLT providing easier access to listing and public markets. Fourthly, smart contracts operating on DLT could allow the implementation of conditional sales or purchases e.g. according to predefined ESG criteria. Fifthly, there could be a benefit in terms of tax management, by using DLT to create a system for real-time and automated reporting to fiscal authorities.

Another industry speaker explained that DLT is not about having a digital rather than a physical ownership certificate of securities, but about issuing, trading and settling digital securities on a blockchain. It is also important to understand the benefits of DLT for investors. First, a DLT may allow a significant reduction of transaction costs with settlement costs decreasing by more than 50%. Secondly, DLT may also allow investors to visualise the holdings in their portfolio immediately after the transaction, which could increase market efficiency. Thirdly, DLT may facilitate a further integration of market infrastructure in Europe, which is currently fragmented along national lines. A DLT network with a common standard for modelling financial instruments could be used to exchange digital assets and simplify cross-border transactions, which would be handled on the chain in the same way as domestic trades. This is an important objective, because if European securities markets were unified, the European market could play a much greater role in the global capital markets landscape than today.

A regulator agreed that there is an opportunity with DLT to increase the efficiency of financial market

infrastructures (FMI) in addition to the AML and KYC testing benefits previously mentioned. As a shared data record, DLT can modernise, streamline and automate FMI trading and settlement processes. Additionally, DLT can increase settlement efficiency for securities and reduce settlement times and failures. Lastly, the use of smart contracts, which are an important component of DLT systems, can be very beneficial for the efficiency of securities markets, for example supporting the automation of outdated middle and back office settlement processes.

1.3 Challenges and risks posed by the use of DLT in securities markets

While the use of DLT could significantly facilitate the issuance and settlement of traditional securities, an industry representative considered that managing this transition will be difficult and expensive. It is not yet clear at which stage the benefits of DLT may outweigh the challenges and justify an implementation of DLT at scale in securities post-trading activities.

A regulator highlighted several key risks posed by the use of DLT. First, the implementation of DLT could lead to significant changes in the organisation, structure and functioning of FMI arrangements, which could cause, at least in the short term, further market and liquidity fragmentation or reductions in liquidity and settlement efficiency. There are also questions about the ability to scale up DLT systems sufficiently to be able to use them in an efficient way in core securities markets. Additionally, DLT could lead to disintermediation if investors are able to directly participate in FMI arrangements without having to use firms. While this could increase efficiency, it could remove some of the existing investor protections in the market. It is therefore important to understand what investor protections will be provided under these new arrangements.

An industry speaker emphasized that there will be no opportunities for customers and the financial industry with the use of DLT if the risks are not appropriately mitigated, because there needs to be trust in the functioning of the market and the new securities issued on blockchains. In addition to questions about how investor protection will be handled on DLT platforms, one key area of concern is around the custody of digital financial instruments, which is where most fraud and IT security issues happen. Establishing proper standards on custody in terms of knowledge, system requirements and the ability to handle losses from operational risks is essential to build trust in these systems.

2. Regulatory and supervisory challenges raised by the use of DLT in securities markets

A regulator emphasized the challenges of supervising certain DLT-based systems. An important issue is being able to identify which entity to supervise. DLT was invented with decentralisation in mind, but most of the platforms implemented so far function in a centralised

way. However decentralised finance platforms (DeFi) are starting to appear and are gaining traction in the market. In some cases, it can be difficult to evaluate the level of decentralisation of a DLT platform, but a truly decentralised platform, if regulated, would be a 'game-changer', because it would be an upheaval for existing supervisory processes.

A second regulator concurred that securities market regulators and supervisors will be facing new challenges with the development of DLT. Some challenges such as cyber-risk are already well identified, but there are also new areas of concern. One is decentralised finance (DeFi) mentioned by the previous speaker. At present most business models are not really decentralized but in the longer term this may evolve, potentially necessitating a rethink of the architecture of European supervision. Another issue is that EU policy-making is perhaps not agile enough to address growing technological change, as shown by the time that was needed to agree on the DLT pilot regime proposal. An obvious solution would be to empower the European supervisory institutions with more direct supervision powers, in order to be able to adapt their approach more easily to changes in the market. In the long term, other topics such as securities law will need to be reopened, probably at level 1, because DLT raises new questions in terms of security ownership. Finally, the regulator noted that in March 2020 the International Monetary Fund (IMF) had produced a paper which listed the regulations that could create an impediment to experimenting with DLT for securities and which concluded that most of the impediments were in the trading space. The first regulator noted that the securities used in a tokenised form on DLT systems are still securities, i.e. financial instruments regulated under the MiFID II Directive.

An industry speaker reiterated the importance of not being technology specific in the policy approach. For example, IT security issues or KYC issues can happen in a central infrastructure or a DLT environment. The extent of those issues might be different, but the type of risk is not different. In the same way a digital security is still a security or a financial instrument for KYC purposes or for the application of MiFID rules.

A second industry representative emphasised the importance of the challenge around securities law. There are still many discussions happening domestically about what form a security token should take in a blockchain and the outcome of this debate is uncertain. Secondly, there is indeed an issue around the supervision of blockchains, whether they are centralised or decentralised. The distributed nature of platforms will complicate supervision in any case, with a key question about who is accountable e.g. in case of an incident. Additionally, there is a question around Central Bank Digital Currencies (CBDC) and how they may be used in the context of DLT. The speaker felt that a safe settlement coin regulated as a CBDC would be useful for post-trading activities, waiting for a decision to be taken more broadly about the provision of CBDCs.

A third industry representative agreed with previous speakers that it is activities that need to be regulated rather than specific technologies and that it is essential

to have adequate governance and accountability in place in DLT platforms for managing the network and the code, dealing with potential problems and ensuring data standardisation and quality. This should include DeFi platforms, which also have centralised players running the network, at the current stage of their development at least. The speaker also agreed that the rules around the ownership of digital securities remain to be clarified. Finally concerning CBDC and settlement coins, this is an area where experiments are being conducted by Central Banks and also private companies and where there are many opportunities. The speaker did not want to advocate for any particular solution but supported the underlying goal of speeding up payment rails and moving towards real-time settlement.

3. Regulatory approaches to DLT in securities markets

3.1 EU DLT pilot regime

The Chair invited the panellists to consider the extent to which the existing regulatory framework is fit for purpose and can accommodate the innovation created by DLT. It is important to determine whether the proposals made in the context of the EU Digital Finance Package, which include the innovative DLT pilot regime proposal, will support the uptake of DLT in the securities market. While the text of the DLT pilot regime is not yet finalised, a political agreement between the Parliament and the Council was reached on 24 November 2021 and the regime is likely to apply from 2023.

A regulator considered the DLT pilot regime a positive proposal. As the name indicates, this pilot will help market participants and supervisors to gain experience with DLT. ESMA issued a call for evidence in January 2022 on the proposed DLT pilot regime, which will help to fine-tune rules applying to DLT. The DLT pilot regime indeed requires ESMA to assess, based on feedback from stakeholders, whether the regulatory technical standards (RTS) developed under MiFIR relative to certain pre and post-trade transparency and data reporting requirements need to be amended in order to be effectively applied to securities issued, traded and recorded on DLT.

The regulator mentioned five additional issues that need addressing with regard to DLT. First, because entities participating in the pilot regime will be exempted from some requirements of MiFIR and CSDR, regulators across the EU must grant these exemptions in a consistent manner to avoid divergence and regulatory arbitrage. Secondly, the approach to transaction reporting may need to be adapted in order to allow regulators to retrieve the records that exist on blockchains. Thirdly, while the call for evidence concerning the DLT pilot regime concentrates on venue trading, it is important to also tackle over-the-counter (OTC) transactions and to assess interoperability. Fourthly, investor protection implications need to be clarified. While retail participation is envisaged by the DLT pilot regime, further safeguards need to be implemented, as retail orders will not be executed via intermediaries. Finally, the DLT pilot regime is a project,

which means it should have an end, but what comes after it needs to be defined. One aspect that will need to be evaluated at the end of the pilot regime is whether any changes are needed in MiFIR and CSDR for allowing the use of DLT-based systems. The success of the DLT pilot regime will ultimately be measured by the number of applications that national competent authorities (NCAs) receive, the types of projects that emerge and whether they bring sufficient value to customers.

A second regulator considered that the DLT pilot regime will help to create an appropriate regulatory and supervisory environment for DLT. A number of amendments are needed, however. In particular, the definition of a financial instrument requires further harmonisation at the EU level. This is a concern, because it is hard to know what 'universe' some real-life projects are in. From a supervisory perspective, it is also important to observe that the EU DLT pilot regime is not a sandbox, but a regime, which provides the entities concerned with an EU passport.

An industry speaker was supportive of the DLT pilot regime which would allow market stakeholders to learn from experience, and considered that it should be extended at the end of the experimentation and become a full regime, taking out the notion of a 'pilot'. In this context rules around the custody of digital assets should be an area of focus. Another industry representative agreed that the DLT pilot regime, together with the Regulation on Markets in Crypto Assets (MiCA), offer many useful possibilities to test and innovate with DLT.

3.2 The UK regulatory sandbox approach

A regulator outlined the ongoing initiatives being conducted by UK regulators concerning DLT. One of the most prominent ways the FCA supports innovation is through its regulatory sandbox, which allows firms to experiment and test innovative solutions in the market with retail consumers in a safe environment. In total, more than 700 firms have used the sandbox so far in terms of regulatory guidance. Last year alone, the FCA supported 43 firms with crypto-asset or DLT-based innovations in its sandbox. The FCA is also considering a Financial Market Infrastructure (FMI) Sandbox, jointly with HM Treasury and the Bank of England. The aim would be to promote innovation in FMI and experiment with changes to legislative requirements that could facilitate the use of DLT in this area, while remaining technology neutral. The FMI sandbox will focus on enabling multilateral trading facilities (MTFs) to develop and test DLT settlement arrangements against temporary changes to legislative requirements that they identify as obstacles preventing them from using DLT for settlement. This will also allow the verification of how different objectives such as the appropriate segregation and protection of client assets can be ensured in this new environment. Possible changes needed to the regulatory framework² will then be addressed by the UK authorities, however MTFs in the sandbox are requested to continue to meet all existing requirements that are not obstacles to DLT arrangements.

Regulators will also need to consider the risks arising from activities performed through DLT, the regulator stressed, in particular those related to automated smart contracts and to the safekeeping of client assets using private keys and wallets. Moreover, cyber resilience is also a highly relevant risk in this context, with considerable challenges in terms of ensuring the integrity, security and confidentiality of data, the resilience of DLT platforms, and protection against cybercrime in the future. International cooperation will also be essential for sharing experience and expertise on DLT with the counterparties of other jurisdictions.

2. Such as updating technical definitions, outsourcing requirements, communication protocols, reconciliation requirements and arrangements for recording and segregating participant and client assets