Keynote Speech by Daniela Russo[1] at the European Central Securities Depositories Association (ECSDA) conference

Technology, Tokenisation, and Capital Market Union
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In this rapidly evolving era, the world of payments and more broadly, the world of finance, are undergoing profound transformations fuelled by technological progress, organisational innovation and new social patterns. Financial market infrastructures (FMIs) and central securities depositories (CSDs) in particular, can play an important role in the transition from the electronic to the digital payment ecosystem, especially in the field of tokenisation of securities. That's why it is important to have fora where CSDs and regulators discuss these issues together. In my brief remarks today, I would like to elaborate on four points:

1. the role of technology;
2. the need to address risks stemming from the adoption of new technologies;
3. what is needed for securities tokenisation;
4. the role of an ETHOS in achieving EU capital market integration.

And following the words attributed to Socrates, the Greek philosopher, "I cannot (nor do I want to) teach you anything, I would just like to make you think."

1. Technology should not be the sole driver for change

Let me start with the role of technology. While acknowledging that technology is a critical component in the design and implementation of new solutions and infrastructure, **technology should not be the sole nor even the main driver for change**. Decision-making must also consider regulatory, economic, policy, business and social factors, as well as operational feasibility, in order to avoid undesirable outcomes.

Let me provide a few examples, starting with some potential paradoxes of artificial intelligence.

An article recently published by the Harvard Business Review[2] describes how in a futuristic world dominated by artificial intelligence, there will be electric vehicles with an embedded digital wallet – linked to the bank account of the owner – with which they can trigger payments, e.g. payment of parking fees. Moreover, if the car owner participates in a ride-sharing arrangement, the digital wallet would also allow the vehicle to collect payments. And I would add that if the vehicle collects more money than it spends, it could then invest the money and buy securities, thereby becoming an investor. In the same futuristic world, fridges can also have an embedded digital wallet that allows them to trigger payments (e.g. to buy food). In the same wallet, the fridge could receive payments from selling either excess food or excess ice cubes to other fridges. Within this framework, in times of global warming, each fridge may wish to diversify its business and risks and – like cars – decide to invest the surplus money and become an investor … provided the hot wallet doesn't send the fridge into a tailspin!

[1] I would like to thank Piero Cipollone, Fiona van Echelpoel, George Kalogeropoulos and Ivan Keller and Mattias Levin for the helpful comments. A special thank to Jochen Metzger for the inspiring discussion we had on the topics addressed in the speech.

[2] See Falorsi, P. and Russo, D. (2024), "Una giornata nel futuro", *Harvard Business Review Italia*, September.

Can you imagine a world where cars and fridges sell and buy securities? Would they then also apply for membership of a CSD? Would we need a new MiFiD, where MiFID stands for Markets in Fridges' Investments Directive? And a new MiCAR, where MiCAR stands for Markets in Cars' Assets Regulation?

While these two examples may seem too futuristic, they underscore the potential for technology to create undesired consequences if not managed properly.

Another less futuristic example is provided by the current debate on reducing the settlement cycle to T+1. While technology could make it possible to move to settlement cycles even shorter than T+0, we know that even the move to T+1 could present challenges. For instance, it would entail the need to revise the Central Securities Depository Regulation[3] and improve settlement discipline as pointed out by the European Securities and Markets Authority (ESMA). And it would entail the need for implementation, taking into account the liquidity and operational risks associated with reducing the settlement cycle, current business practices involving long chains of custodians and the need for global coordination. This last example shows that technology alone would not be sufficient to ensure effective improvements through the modernisation process.

Technology should follow the business and policy objectives and not vice versa.

2. The need to address the risks stemming from new technologies

Now, a few words on the risks. Everyone would agree that new technologies do not eliminate the risks and the vulnerabilities associated with traditional finance and platforms but do have the potential to create new risks. Just to be clear, new technologies would not necessarily create new risks but could introduce new risk sources or enable existing risks to materialise, and these issues need to be addressed.

In a paper released in August 2024, Euroclear, Clearstream and the Depository Trust and Clearing Corporation highlighted the need to address risks stemming from DLT and tokenisation, such as the potential lack of legal certainty, custody risks, connectivity and interoperability, and operational scalability.

In a report published in 2022, the Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO) provided guidance on how to use existing global standards to address the peculiarities of stablecoin arrangements. This guidance – covering issues concerning governance, interdependencies, settlement finality and settlement assets – is likely to be relevant not only for stablecoins, but also for other types of digital assets, including tokenised securities. In the case of tokenised securities, additional guidance is likely to be needed irrespective of whether tokenised securities will be used by traditional or "new" types of CSDs, to address the risks related to the notary function, delivery versus payment (DVP), collateral, links and interoperability, as well as operational and custody risks.

Last but not least, it is important to look at the appropriate oversight and supervisory regime for traditional or new types of FMIs processing digital assets. How should decentralised entities be overseen? Would the traditional definition of home and host authorities need further qualification? Who would be the lead overseer? Could we still have a single lead overseer? Do we need new forms of oversight, e.g. consolidated oversight?

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[2] Regulation (EU) No 909/2014 of the European Parliament and of the Council of 23 July 2014 on improving securities settlement in the European Union and on central securities depositories and amending Directives 98/26/EC and 2014/65/EU and Regulation (EU) No 236/2012 (OJ L 257, 28.8.2014, p. 1).

These are just some of the questions that will need further analysis.

3. What do we need to move to securities tokenisation in the EU?

Let me now move to my third topic, securities tokenisation.

Today, there is no generally accepted definition of tokenisation. In the recently published CPMI Report on tokenisation, it is defined as "the process of generating and recording a digital representation of traditional assets on a programmable platform".[4]

Most of the discussion on tokenisation so far has focused on the DLT platforms and on the technological solutions that allow participants to develop and execute applications that update a common ledger. This is creating some confusion between DLT and tokenisation. And that's why I would like to stress that tokenisation would involve the need to address or clarify some additional – not necessarily technical – issues, for example:

- the definition of token (including the definition of the rights or interests on the token);
- the definition of the assets that could be tokenised;
- creation and destruction of the token;
- issuance, custody, trading, transfer and (final) settlement of the token (including definition of the applicable law(s) and the creation of the relevant legal rights that are generated on securities after the completion of such a process);
- the fungibility of tokenised assets, as well as between tokenised and non-tokenised assets;
- the liabilities and insolvency regime for tokenised assets;
- the oversight/supervisory regime (including prudential standards);
- the definition of the relevant market/business practices.

To address these issues and create a comprehensive, integrated framework for securities tokenisation, central banks, regulators, financial market infrastructures and all relevant stakeholders must work together from the outset. This work is hard, costly and time-consuming, but it is important to have sound and integrated financial markets, especially in the EU.

4. Would ETHOS pave the way for the capital markets union (CMU)?

This leads me to my last point; could ETHOS be instrumental for the achievement of the CMU? Let me first reassure you that I'm not going to discuss philosophical issues. ETHOS[5] stands for European Tokenised assets Harmonised and Organised Space and is the name I am giving to an EU framework where tokenised assets and related platforms can operate in a safe, efficient, integrated and competitive environment.

Since the time of the two Giovannini Reports[6], the heterogeneous legislative and regulatory frameworks and business practices across the EU have been preventing the sector from reaping the benefits and synergies that an integrated European financial market could bring. The debate on how to achieve the capital markets union is today bringing up the same issues that we were discussing

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[4] Bank for International Settlements (2024) "Tokenisation in the context of money and other assets: concepts and implications for central banks", *CPMI Papers*, 21 October.

[5] The Greek word "Ethos" indicates the set of moral values that an individual or a common culture, community or civilisation lives by.

[6] The Giovannini Group reports on cross-border clearing and settlement arrangements of November 2001 and April 2003.

around 20 years ago. I see two possible approaches to fostering integration, which are not mutually exclusive[7].

The first approach is the bottom-up approach that has been used in the past. It involves starting from the current situation, identifying barriers to integration and trying to outline actions to remove them.

Even if we can improve the approach, leveraging the lessons from the past[8], we need to acknowledge that this bottom-up approach has not been completely successful and some of the barriers identified have not yet been completely removed. In some respects, achieving full harmonisation could be a "mission impossible" in the EU, given the different approaches and the extremely detailed legal and regulatory frameworks across Member States.

That's why a second, top-down approach, consisting in creating the EU framework for digital securities from the outset, would help. It is intuitive that creating a new harmonised framework for digital assets should be easier than continuing to try to harmonise current, crystallised regulatory and business practices. Following Socrates, this time Dan Millman's character, "The secret of change is to focus all your energy, not on fighting the old, but on building the new".

This top-down approach would enable common EU rules for tokenisation to be established before any new national rules are established, allowing the common EU ledger to be created before or at the same time as national ledgers. This would help create the new digital EU ecosystem without the problems of fragmentation that we still face in relation to the current EU digital ecosystem. This would also help to implement solutions that would better cope with the needs of the new digitalised "Generation Z" investors and clients.

The features of the integrated tokenised securities market could take inspiration from the features of the integrated payment money market. This would include:

a) The use of central bank money as a settlement asset whenever available and practicable, together with tokenised commercial bank money in addition or instead of stablecoins. Let me spend a few words on it. Settlement in central bank money from a financial stability perspective is a must. Today in the EU, we have DVP model 1 settlement in central bank money for securities transactions in TARGET2-Securities (T2S). We cannot go one step backwards! Moreover, tokenisation has the potential to increase the number of transactions settled in central bank money, by creating a secondary market for less liquid assets. It is therefore of utmost importance that there is no shift from settlement in central bank money to settlement in commercial bank or other forms of commercial money simply because digital central bank money for wholesale transactions is either not available or not practicable.

b) The creation of an ETHOS including:
    - a single legal/regulatory framework that would vary according to the way tokenised assets are defined – this framework should be clear, proportionate, simple and agile;
    - an appropriate governance framework;

[7] T2S is an example of where the bottom-up and top-down approaches meet. The introduction of T2S ten years ago accelerated the harmonisation of certain aspects of the post-trade flow identified in the Giovannini reports.

[8] Examples of the lessons: (i) It is easier to identify barriers than to remove them – new problems emerge at the time of the barriers' removal and looking at details could be key to achieving successful harmonisation, as the T2S experience has shown. (ii) There is a need to coordinate all the different components of the process and ensure the right sequencing of different initiatives. (iii) There is a great need for effective solutions for cross-border securities transactions (i.e. interoperability and links). (iv) Harmonisation of business practices remains crucial.

- a single financial stability and oversight framework, including regulation (consistent with global standards) that ensures appropriate governance and risk management;
- a single European ledger or a set of fully interoperable ledgers;
- a single set of common market and business practices;
- no single point of failure.

These different features would need to be implemented by different stakeholders. The European Commission and ESMA (in cooperation with the ECB) should establish the legal foundations and, more generally, the regulatory environment. The Eurosystem could act as catalyst and contribute as an operator and as overseer together with ESMA (acting as supervisor), the CSD community and other relevant market stakeholders, including not only established market participants, like FMIs and banks, but also regulated fintechs. These market participants should be allowed to use and connect to the tokenisation or DLT infrastructure of tomorrow and should develop the commercial, business and technical framework. While acknowledging that tokenisation would be more complex than previous European projects, the Single Euro Payments Area (SEPA) experience can be the starting point for defining the appropriate coordination and organisational framework to conduct the work. For those who are not familiar with SEPA, this framework has been characterised by a driving role, not only for the authorities, but also for the industry. It has been an inclusive framework that has taken into account legitimate interests of different categories of stakeholders.

Conclusions

The transition to a digital financial ecosystem presents both challenges and opportunities. By working together from the outset, central banks, regulators, FMIs, financial institutions and technology providers should be able to create an ETHOS; a set of conditions that would allow for an efficient, sound, integrated and competitive market for digital assets.

This joint work does require coordination, since any individual platforms that start operating and any rules or market practices established before the common “rules of the game” are defined will introduce segmentation: change is a process not an event! We can leverage the SEPA experience to set up the appropriate organisation. Three of the main actors are already known, these being the European Commission, ESMA and the ECB/Eurosystem/ESCB. It remains to be seen how the industry will organise itself. What do you think should be the role of the ECSDA?

Thank you for your attention.