THE DIGITISATION OF FINANCIAL MARKETS: OPPORTUNITIES FOR ISSUERS AND INVESTORS

PARIS EUROPLACE

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PREAMBLE

Issuers face a number of issues in their search for financing and during the life of their issues:

- The size of many companies limits their access to financial markets or they have insufficient equity capital to allow banks to finance them adequately.
- Companies only have partial knowledge of their financial security holders, which makes it difficult to trace them, whether to optimise the processing of corporate actions, the organisation of general meetings or to ensure more regular and targeted communication with their shareholders or creditors.
- More generally, current post-trade operations still require a lot of reconciliation between counterparties, generating costs and operational risk.

With the emergence of blockchain (or distributed ledger technology - DLT), the digitisation of the financial markets has led to productivity gains and increased capacity for sharing information and knowledge about investors and the characteristics of the securities issued.

This document, drafted participants of the Paris Europlace's "Use cases for digital finance" Work Group, aims to detail how issuers and investors could take advantage of these innovations in their activities of issuing and investing in digital financial securities, i.e. shares, bonds (or fund units) issued, traded and settled/delivered in infrastructures using blockchain technology.

CONTENTS

1. BLOCKCHAIN AND FINANCIAL SERVICES

- 1.1. Blockchain operating principles and opportunities for use
- 1.2. Adoption in financial services
- 1.3. Advantages of issuing securities via blockchain (from the point of view of issuers and investors)
- 1.4. Status of financial instruments issued on a blockchain compared with traditional securities

2. MAIN USE CASES IDENTIFIED

- 2.1. Examples of bond use cases
- 2.2. example of an action use case

3. PRACTICAL ARRANGEMENTS FOR SECURITIES ISSUES ON BLOCKCHAIN

- 3.1. Main issues to be addressed when issuing on blockchain
- 3.2 Tips for going further

1- BLOCKCHAIN AND FINANCIAL SERVICES

1.1. BLOCKCHAIN OPERATING PRINCIPLES AND OPPORTUNITIES FOR USE

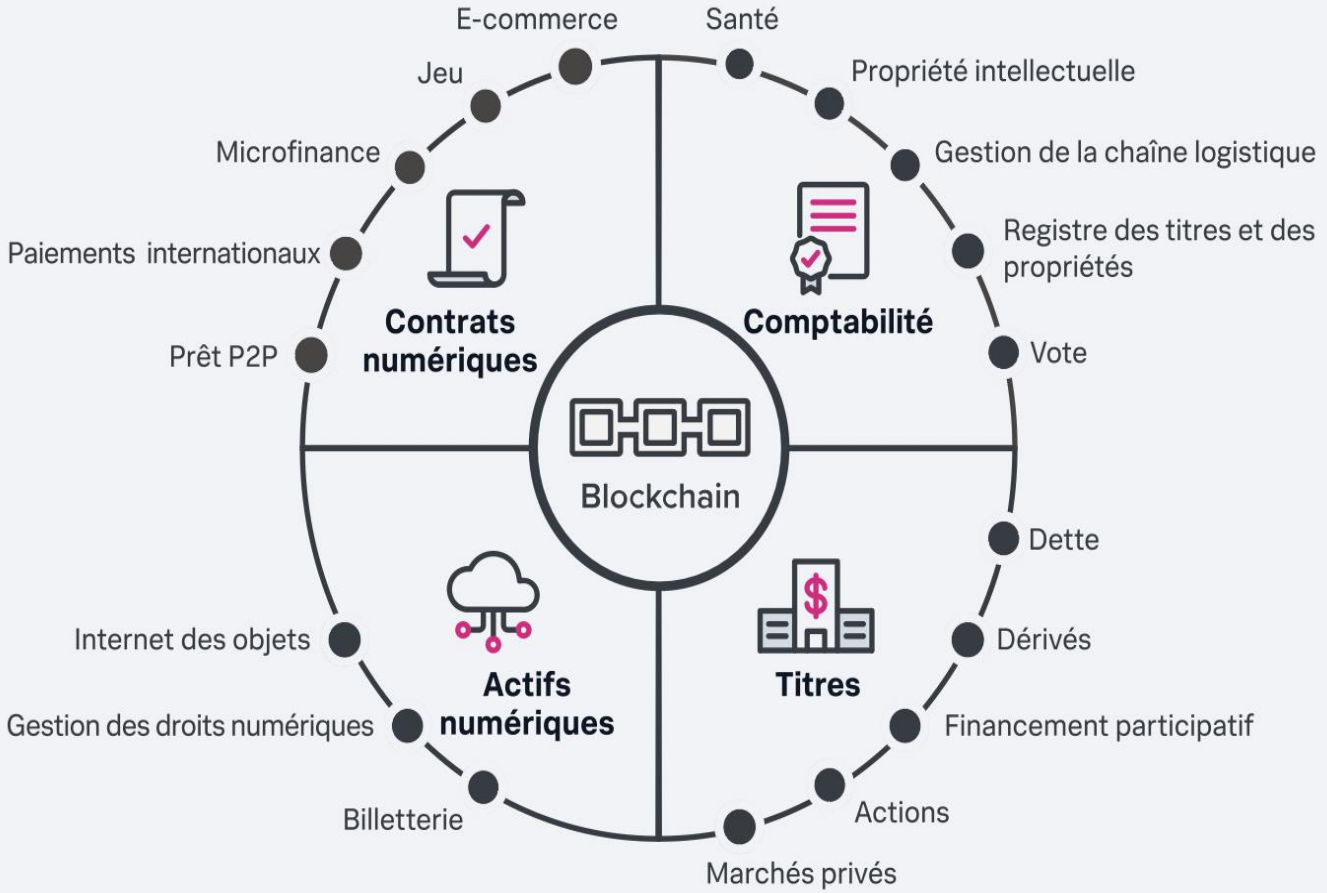
BLOCKCHAIN IN A NUTSHELL

An infrastructure for recording transactions in a distributed ledger with unique characteristics:

- **Validation of transactions:** via a public or private consensus protocol, depending on the blockchain.
- **Transparency:** each new transaction is added to the chain of previous transactions (audit trail of recorded transactions).
- **Resilience / Decentralisation**: validated transactions are automatically distributed across all network nodes
- **Immutability:** Impossibility of modifying or deleting the digital fingerprint of a recorded transaction without the knowledge of networks participants.
- **Security:** encryption of all recorded transactions to secure information transfers
- **Programmable:** smart contracts allow programmed rules to be executed automatically under certain conditions.
- **Global accessibility / network effect**: access to the blockchain is not subject to any constraints such as geographical borders.

These principles give blockchain the qualities of a trusted third party

OPPORTUNITIES FOR USE



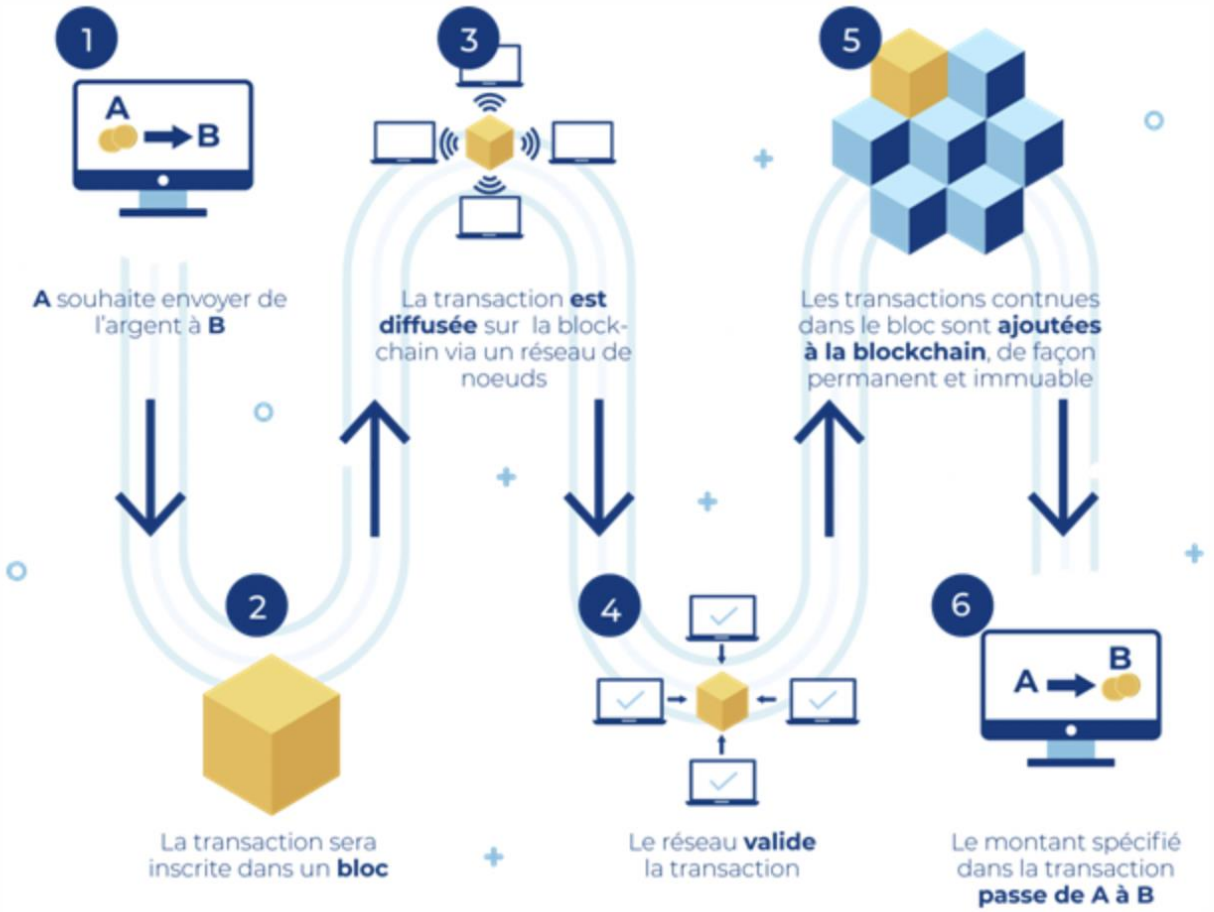
Source: Splunk

Blockchain: how does it work?

A blockchain is a new distributed and shared database technology that enables information and data to be stored and transferred securely and without trusted intermediaries.

As money and value (financial assets, loyalty points, art, etc.) cannot be duplicated, we now rely on intermediaries (banks, notaries, central banks, CSDs, etc.) to certify ownership and the transfer of value.

With blockchain, this transfer of value is made possible by cryptography and consensus mechanisms that allow the transfer of ownership to be certified.



Source: Digiposte

Blockchain creates digital property and is becoming the reference technology for the transfer of value, just as the Internet is for the transfer of information.

1.2. ADOPTION IN FINANCIAL SERVICES

WE ARE LEAVING THE DISCOVERY PHASE AND ENTERING THE ALLIANCE PHASE AROUND THE PRIMARY AND SECONDARY MARKETS

DISCOVERY

2008

- Creation of the Bitcoin blockchain, creating bitcoin for the transfer of cash assets between individuals without banking intermediation

2012-17

- First legislative and regulatory frameworks (2017 ordinance in France, eWPG, Lux law) for the use of blockchain to issue (unlisted) financial securities
- Development of crypto-currency transactions and projects
- Multiplication of blockchain protocols (Ripple 2012, Ethereum & Hyperledger in 2015, Corda in 2016)

INSTITUTIONALISATION & PRIMARY MARKET

2020-22

Institutionalization of thinking on blockchain :

- Work by central banks on the digitisation of major currencies (12 Banque de France experiments in 2021-2022)
- First bond issues by major names (EIB, EDF, Siemens, etc.) with SG, D7 Clearstream, BNP Paribas
- Definition of a European regulatory framework (Pilot Regime for listed digital financial instruments and MICA for crypto-assets)
- Increased work under the aegis of Paris Europlace to define best practice guides, promote the standardisation of practices and disseminate knowledge to their members.

ADOPTION, INDUSTRIALISATION AND THE SECONDARY MARKET

2023-26

The challenges of industrialisation :

- Competition between European and global financial centres to become hubs for the digitisation of financial assets
- ECB initiatives (from May to November 2024) to test the various options for making a digital version of the euro available for wholesale payments in order to support the digitisation of the economy
- **Launch of an initiative led by Paris Europlace (in line with that of the ECB), to encourage tokenised bond issuances under the pilot scheme.**
- Development of a secondary market for digital securities

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1.3. ADVANTAGES OF ISSUING DIGITAL SECURITIES (ISSUERS' POINT OF VIEW)

As well as being a market innovation, digital securities offer several advantages for issuers over traditional securities in terms of raising capital

- **Potentially global accessibility:** securities issued on a blockchain can be bought and sold around the world, enabling issuers to reach a wider and more diverse audience of investors.

- **The opportunity to automatically disseminate** (via a smart contract for the creation of securities) **a wealth of information on the sustainability characteristics of the proposed investment, enabling us to meet the growing demand from investors in terms of ESG.**

- **Ability to permanently identify the holders of the security issued:** the blockchain makes it possible to automate the monitoring of transactions on the security and to identify the custodians and investors concerned at any time.

- **Lower transaction processing costs thanks to :**
  - the elimination of charges linked to reconciliation operations between counterparties
  - the ability to schedule the most common securities transactions (payment of issue proceeds, distribution of coupons/dividends, repayment of principal)
  - more efficient management of default triggering and resolution operations (reduction in error accounts)

1.3. ADVANTAGES OF AN ISSUE OF DIGITAL SECURITIES (INVESTORS' POINT OF VIEW)

For investors, the purchase of digital shares allows them to benefit from :

- **Trading facilities :**
  - Possibly 24/7 regardless of MTF opening hours
  - Intraday transactions and settlements
  - Improved treatment of collateral, whether in emerging markets or for less liquid collateral or, conversely, for securities financing and repo settlement (HQLA).
  - Improved refinancing thanks to better asset traceability and immediate settlement, particularly intraday.

- **Transparency :**
  Transactions on a blockchain are recorded transparently and securely, enabling investors to track the movements of digital securities and verify the accuracy of financial information.

- **Efficiency gains in** information sharing in pre- and post-trade processing (FO-MO-BO exchanges, reconciliations), eliminating the need for reconciliation and reducing the cost of processing investment transactions

- **Reduction in the cost of acquiring data, particularly extra-financial data,** if the issuer includes it directly in the smart contracts creating the securities.

1.4. STATUS OF FINANCIAL INSTRUMENTS ISSUED IN A BLOCKCHAIN COMPARED WITH TRADITIONAL SECURITIES

- A digital or tokenised financial instrument (share, bond or fund unit) **gives its holder the same rights over the issuer** as holding a share, bond (or fund unit) in its traditional form. **The two forms of security are therefore perfectly fungible and have the same ISIN code.**

- Subject to prior mention in the security documentation authorising a "conversion" from a traditional security - circulating in a central depository - to a digitised security - circulating in a blockchain, the **digitisation of securities can apply to new issues as well as to securities already issued.**
  - **D-FMI, Euroclear's regulated platform** for the issuance and settlement of digital financial securities, is already interoperable with the traditional infrastructure for secondary trading and enables institutional investors to hold digital financial securities in a transparent manner.
  - Dealing with bond issues and structured products**, Societe Generale's FORGE platform** is one of the world leaders in terms of the number of transactions**,** with a choice of clearing in cash or digital currency, including central bank clearing.
- **The European pilot scheme allows digital financial securities to be listed and traded under the same conditions as traditional bearer securities.**

- Ownership of securities held by investors is evidenced in the issue registers by entries either in the name of the holders or under omnibus or segregated nominee accounts for each investor.

2- MAIN USE CASES IDENTIFIED
2.1. EXAMPLES OF BOND USE CASES

- **ISSUANCE OF SUSTAINABILITY LINKED BONDS, THE COUPON ON WHICH IS DEPENDENT ON THE ACHIEVEMENT OF INDICATORS LINKED TO THE ISSUER'S SUSTAINABLE DEVELOPMENT EFFORTS.**
  - Issue: at present, managing the monitoring of indicators or KPIs and adjusting the coupon in line with their achievement is a manual and costly process for the banks in charge of financing.
  - Solution: the smart contract used to create the security is programmed to check that the issuer has achieved the sustainable development KPIs and to adjust the coupon automatically on payment.

  Example: in 2019, Enel issued a €1.5 billion sustainability linked bond in the form of tokens on the Ethereum blockchain. The bond was linked to the company's sustainability goals, such as reducing carbon emissions, increasing renewable energy production and promoting gender equality.

- **POSSIBILITY OF ADDRESSING INDIVIDUAL INVESTORS DIRECTLY**
  - The characteristics of blockchain (accessibility and the absence of the need for securities accounts to evidence ownership of the securities subscribed to) mean that retail investors can be interested directly in specific themes at extremely low cost.
  - Possible uses: financing local projects, alternative to participative financing, research loans or transition financing.

2.1. EXAMPLES OF BOND USE CASES

- **REDUCING THE COST OF DISSEMINATING OR ACQUIRING ESG DATA**
  - Issue: Issuers and investors are required to report on the sustainability of their activities, and incur high costs in acquiring and disseminating extra-financial data.
  - Solution: disseminate this information via the smart contract creating the security on the blockchain, enabling investors to find out about it directly when they trade in the security.

Here are some examples:

- *On 7 July 2022, **BNP Paribas** tokenised and distributed a bond to refinance a solar energy project sponsored by **EDF ENR**. BNP Paribas used its AssetFoundry tokenisation platform and BNPP Securities Services managed the custody aspects of the tokenised security. BNPP Asset Management acted as investor. **This project, corresponding to the financing of a photovoltaic roof in the amount of €100k** (i.e. the issue of 10 bonds at €10k each), made it possible to retain **150 ESG data points in the token** (tokenised security). The private key contains the terms of the financing (duration, interest rates, maturity dates, etc.) and the public key contains all the information relating to the project (legal entity, location, etc.). This digital bond, which has a very low carbon footprint, was issued in less than 10 minutes and paid for in 2 hours. The 10-month trial ended on 12 July 2022, with the digital bond being reversed to a traditional bond within 48 hours, and the digital version then deleted.*

- *On 30 November 2023, **Société Générale,** via its subsidiary Société Générale **FORGE,** issued **a €10m green bond structured** in CSR and incorporating the "carbon footprint onchain", which is the carbon cost of the issue. This information is available openly and transparently on the Ethereum public blockchain.*

2.1. EXAMPLES OF THE USE OF SHORT-TERM BOND ISSUES

- **DIGITAL COMMERCIAL PAPER ISSUES**

- **All the players in this market are concerned:**
  - Issuers (corporate or financial, private or public)
  - Investors (management companies or institutional investors)
  - Financial intermediaries and institutions (broker-dealers, TCCs, custodians, CSDs, etc.)

- **The ability to use blockchain to :**
  - share all information relating to a paper's characteristics (including ESG) in real time
  - simplify post-trade by establishing an automated link between trading platforms and settlement, resulting in a drastic reduction in the 'friction' that generates delays, costs and risks: massive reduction or even elimination of reconciliation processes, both vertically (front, middle and back office) and horizontally (between counterparties or between issuers, investors and their respective agents).

2.2. EXAMPLES OF USE CASES ACTIONS

- **FOR UNLISTED COMPANIES**
  - Less costly access to the market for issues benefiting from the simplified prospectus and less complex with a digitised IPO process
  - Infrastructure dedicated to SMEs: simplified prospectus and growth trading platforms
  - SME listing to facilitate secondary trading
  - Simplified management of shares and shareholder relations: share transactions, general meetings, publications, etc.

➔ **Objective: facilitate the mobilisation of savings towards SMEs-ETIs**

- **FOR LISTED COMPANIES**
  - Optimisation of the traditional management of pure registered share registers by issuers or administered registered share registers via issuer services providers
  - Better identification of shareholders (in terms of voting rights and percentage of capital held) on an ongoing basis
  - Optimising the management of general meetings (voting on resolutions)
  - More frequent shareholder communication, not just limited to major shareholders

3- PRACTICALITIES

3.1. MAIN ISSUES TO BE ADDRESSED WHEN ISSUING ON BLOCKCHAIN

CASE OF A BOND ISSUE

1. **Criteria for choosing the issuing blockchain**
    1. Public or private: potential impact on functional benefits (transparency, security) and on capital or liquidity requirements
    2. Jurisdiction of the platform
    3. The target investors may depend on the custodians connected to the platform,
    4. Current or future interoperability with other platforms using DLT or with traditional infrastructures
    5. Interest in participating in a "sand box" type European pilot scheme and in a central bank experiment

2. **Options for managing the 'cash leg' of the issue**
    1. Instant settlement with wholesale Central Bank Digital Currency (not currently possible), deposit tokens, stable coins, etc.
    2. Payment outside the blockchain using traditional channels
    3. Use of smart contracts

3.1. MAIN ISSUES TO BE ADDRESSED WHEN ISSUING ON BLOCKCHAIN

3 Choice of jurisdiction for obligations

1. Depends on the choice of platform
2. Perceived advantages/disadvantages of different legislative regimes
3. Taking into account the location of the target investor base

4. Programme structure

1. Amount, maturity (often short-term)
2. Reversibility options (digital bonds to traditional bonds), redemption or sale options
3. Inclusion of ESG data, for example
4. Automation of smart contracts for securities transactions or voting at general meetings
5. Rating agency opinion (credit or ESG)

3.2. TIPS FOR GOING FURTHER

- Statutory Auditors
- Specialist law firms
- Investment bank origination centres
- Trading infrastructures (MTFs) or structures approved as DLT MTFs under the pilot scheme
- Settlement infrastructures (central securities depository) or structures approved as DLT SS or DLT TSS under the pilot scheme
- Main custodians
- Professional associations

Participants

Participants in the Paris Europlace "Digital Finance and Use Cases" Working Group, which includes the French finance ecosystem, contributed to the drafting of this document: business associations, insurers, auditors, lawyers, banks, corporates, traditional and digital market infrastructures.

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