Putting Luxembourg on the Blockchain map – Where does the ecosystem stand?

6/10/2022

# Agenda

■ Welcome by SMC

■ Presentation of report by Infrachain

■ Q&A

■ Closing remarks by SMC

■ End of meeting

# Report Summary

- Mapping of the Luxembourg blockchain ecosystem
- Study demographics
- Responses
  - Respondents' views on blockchain
  - The use of blockchain by responding organisations
  - Luxembourg, a good place for blockchain?
  - What to improve?
  - The role of government in Blockchain
  - National policy initiatives
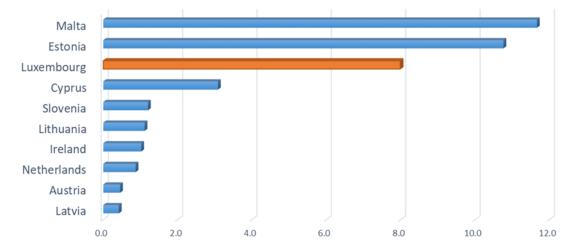- Recommendations: The way ahead

# Preliminary note

The interviews were made between December 2021 and January 2022 and the report was written in February and March 2022. This presentation is based on the report and does not take into account any subsequent events.

Luxembourg Blockchain Ecosystem

# The Luxembourg Blockchain Ecosystem: International Comparison



**EU Top10: Blockchain companies per 100k population**

Data source: EU Blockchain Observatory and Forum, 2020)
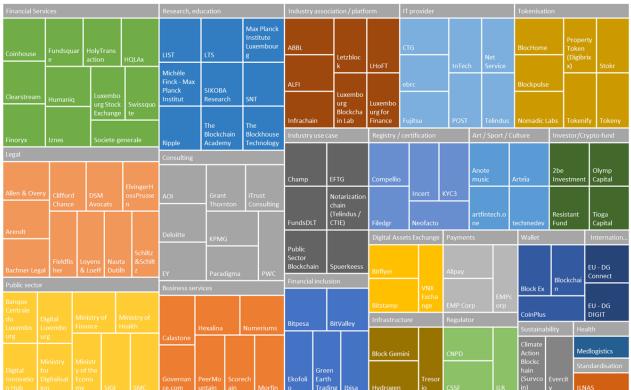
# The Luxembourg Blockchain Ecosystem: Categories



Luxembourg Blockchain Ecosystem

| Category | Count |
|---|---|
| Financial Services | 11 |
| Legal | 10 |
| Research, education | 9 |
| Public sector | 9 |
| Consulting | 8 |
| Tokenisation | 7 |
| IT provider | 7 |
| Business services | 7 |
| Industry use case | 6 |
| Industry association / platform | 6 |
| Registry / certification | 5 |
| Financial inclusion | 5 |
| Investor/Crypto-fund | 4 |
| Art / Sport / Culture | 4 |
| Wallet | 3 |
| Regulator | 3 |
| Payments | 3 |
| Infrastructure | 3 |
| Digital Assets Exchange | 3 |
| Sustainability | 2 |
| International institution | 2 |
| Standardisation | 1 |
| Health | 1 |

# The Luxembourg Blockchain Ecosystem Map

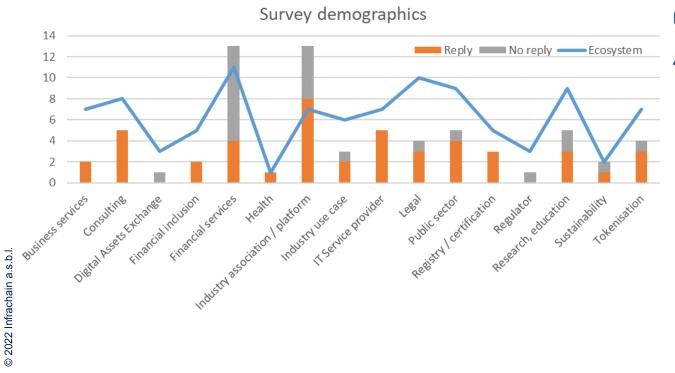Luxembourg Blockchain Ecosystem

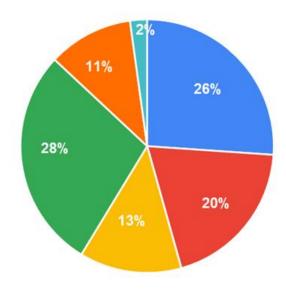# Study Demographics

# Study demographics



Survey demographics

69 organisations contacted

46 organisations replied (67%)

▷ 58 individuals

▷ 41 organisations from Luxembourg Blockchain ecosystem = 34% of Luxembourg Blockchain ecosystem

# Study demographics: type



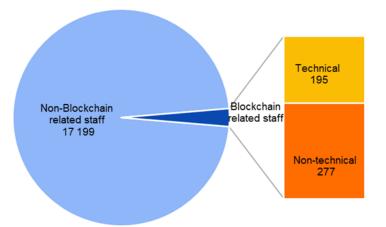Which of the following best qualifies your organisation?

- Large company — 26%
- Private institution — 20%
- Public institution, administration, authority,... — 13%
- SME — 28%
- Start-up (less than 2 years of existence) — 11%
- Independent — 2%

# Study demographics: employment
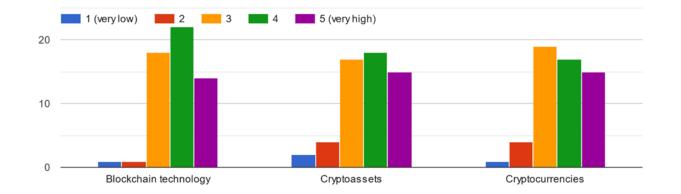


Number of employees of interviewed organisations

Non-Blockchain related staff 17 199

Blockchain related staff

Technical 195

Non-technical 277
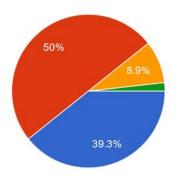
Respondents' views on blockchain

# Respondent's level of knowledge

How do you rate your personal level of knowledge of:

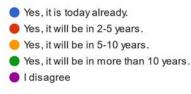# Blockchain: a disruption?

"Blockchain is a game-changing technology"



- Yes, it is today already.
- Yes, it will be in 2-5 years.
- Yes, it will be in 5-10 years.
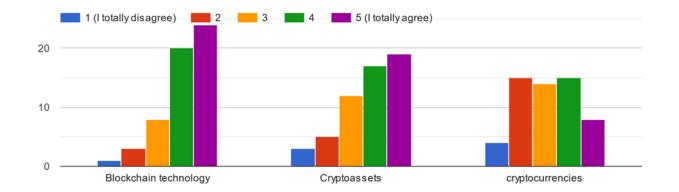- Yes, it will be in more than 10 years.
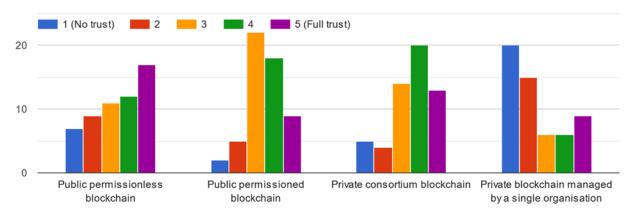- I disagree

# Blockchain provides a competitive advantage?

"The use of blockchain technology, cryptoassets and/or cryptocurrencies provides or will provide a competitive advantage to my organization."

# In blockchain we trust?

Your level of trust :



Legend: 1 (No trust), 2, 3, 4, 5 (Full trust)

Categories: Public permissionless blockchain, Public permissioned blockchain, Private consortium blockchain, Private blockchain managed by a single organisation
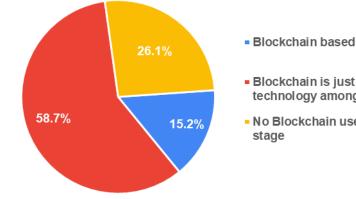
▷ "Depends on use case"

▷ "A public permissionless blockchain is not an option in a highly regulated environment"

▷ Importance of perception

# The use of blockchain by responding organisations

# Organisation's services



Organisation's services

- 58.7%
- 26.1%
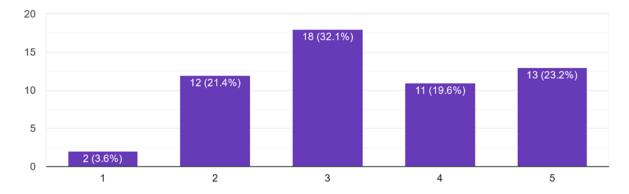- 15.2%

- Blockchain based
- Blockchain is just one technology among others
- No Blockchain used at this stage

# C-level blockchain knowledge

How do you rate the knowledge of Blockchain technology, cryptoassets and/or cryptocurrencies within the management of your company?

(1 = very low; 5 = very high)

# Blockchain strategies



"My organisation has a clear strategy with regard to the use of blockchain technology, crypto-assets and/or cryptocurrencies."
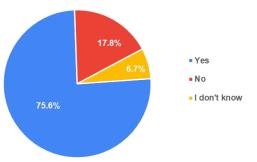(1 = strongly disagree; 5 = strongly agree)
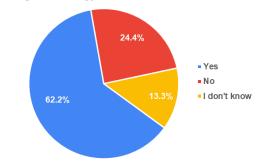
# Technology and digital assets
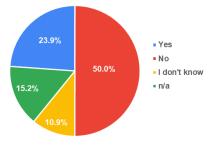


Is *blockchain technology* part of your corporate digital strategy?

- Yes — 75.6%
- No — 17.8%
- I don't know — 6.7%
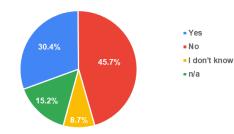
Are *cryptoassets* part of your corporate digital strategy?

- Yes — 62.2%
- No — 24.4%
- I don't know — 13.3%

If cryptoassets are part of your corporate digital strategy, does you organization plan on issuing bonds or shares on blockchain?

- Yes — 23.9%
- No — 50.0%
- I don't know — 10.9%
- n/a — 15.2%

If cryptoassets are part of your corporate digital strategy, does you organization have an NFT strategy?

- Yes — 30.4%
- No — 45.7%
- I don't know — 8.7%
- n/a — 15.2%
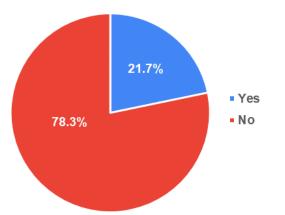
# Cryptocurrencies
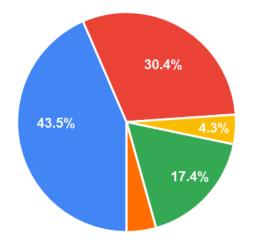
Are *cryptocurrencies* part of your organisation's *financial strategy* (e.g. accept payments in cryptocurrencies,...)?



21.7%

78.3%

- Yes
- No

# Use of blockchain

Does your organisation work on a blockchain (blockchain technology, digital assets, cryptocurrencies) project?



- Yes, now
- We already implemented a blockchain project
- Planned within the next 6 months
- No
- I don't know

43.5%
30.4%
4.3%
17.4%
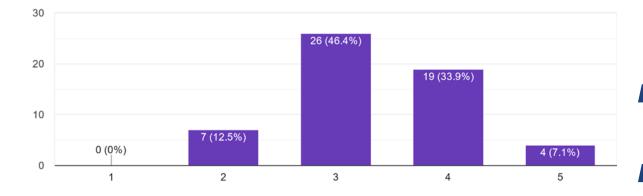
Luxembourg, a good place for blockchain?

# Luxembourg: a good place for blockchain?

Is Luxembourg attractive for Blockchain (blockchain technology, digital assets, cryptocurrencies) projects?

(1 = strongly disagree; 5 = strongly agree)



- Timely adoption of the blockchain laws
- General business-friendly environment (ease of access)
- A small but solid blockchain ecosystem
- BUT: Lagging behind other countries

# Luxembourg's legal framework

How do you evaluate the current legal and regulatory framework in Luxembourg in relation to blockchain technology, digital assets and cryptocurrencies?



- Insufficient
- Neutral
- Good

28.6%
46.4%
25%

# Selected quotes

■ "*It's attractive but **not more than other countries**.*"

■ "*My perception of Luxembourg's approach is that its financial sector is very much divided between the fear of missing out and more conservative and skeptical views about the technology, which comes as no surprise given the scams which abound in the crypto-universe and 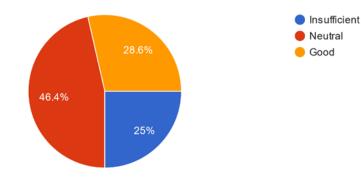the reputational risks associated with them. As a result, based on the strong influence this sector has on the relevant ministries/administrations, the country has ended up adopting a **half-hearted, middle-of-the-road strategy** which may hamper some hard-core blockchain-related fintech projects, but is definitely open to other projects (…), in which the blockchain technology, while required, does not play a central role.*"

■ "*Luxembourg is **on the right track but the momentum must be used** to further push blockchain in a well-defined frame that does not neglect inherent risks.*"
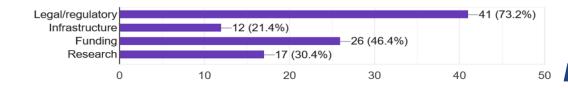
What to improve?

# What to improve?

In which field are measures needed to make Luxembourg more attractive for blockchain technology, digital assets and cryptocurrencies? (multiple choices possible)



Legal/regulatory — 41 (73.2%)
Infrastructure — 12 (21.4%)
Funding — 26 (46.4%)
Research — 17 (30.4%)

Clear political commitment and a coherent strategy that provides certainty and puts the ecosystem at ease.

Stronger promotion for blockchain activities

# Regulation

Regulation

- Regulatory clarity and guidance for the financial sector

  - Quick processes

  - Training

- Extend existing blockchain laws to include more asset classes and more types of instruments

# Funding

Funding

- Increase seed financing opportunities

- Funding targeted at blockchain projects, especially if aligned with national strategies

- Lack of VCs ready to invest in blockchain projects

# Research

Research

- A mean to provide more training opportunities

  - Uni.lu does not offer a dedicated course dealing with blockchain, AI and data

  - Blockchain is not on the curriculum of the Master in supply chain

- Strenghten interdisciplinary research, especially at the crossroads of IT and finance

- Push collaboration with industry experts

# Other

- More training

- Stronger collaboration between stakeholders "to make it happen": public and private, academia and business, technology and finance, regulators and industry experts, etc.

# Critical niches

- Very differing answers

- Role of the public sector: accept cryptocurrencies for payment (of taxes, for example); support the creation of a credible (and compliant) stablecoin; become a user of public blockchains; open up the Public Sector Blockchain to all economic players and interactions among these players; make available a wallet to store digital credentials (a kind of "MyGuichet wallet") to create trust among citizens and companies in the technology and thereby promote its use; create a link between identities and the blockchain in order to digitize the trust of regulated entities and to make it executable onchain.

- Provide adequate blockchain-related education and training, build expertise related to smart contracts (coding, security, auditing,...)

- Position Luxembourg as a trusted validator and explore opportunities related to hosting oracles.

- Push large scale projects that bring together several players from different ecosystems.

- Develop a framework for wealth and asset management on DLTs.

# National blockchain
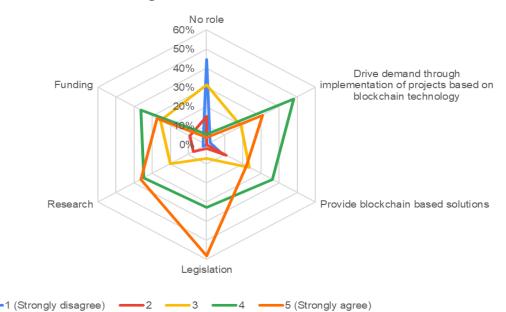
- Most respondents had a nuanced view.

- A national initiative can be a valuable marketing tool, create trust and thus support adoption

- The public sector could make a strong push by providing digital IDs that can be used in conjunction with selected use cases on blockchain.

- Public Sector Blockchain

  - Open-up

  - Deploy more use cases

- Benefit from Luxembourg's reputation (trust, stability and reliability) to host validator nodes for international use cases.

# The role of government in blockchain

# The role of government



The role of government in blockchain

Chart axes: No role, Drive demand through implementation of projects based on blockchain technology, Provide blockchain based solutions, Legislation, Research, Funding

Scale: 0% to 60%

Legend:
— 1 (Strongly disagree)
— 2
— 3
— 4
— 5 (Strongly agree)

Spontaneous answers:

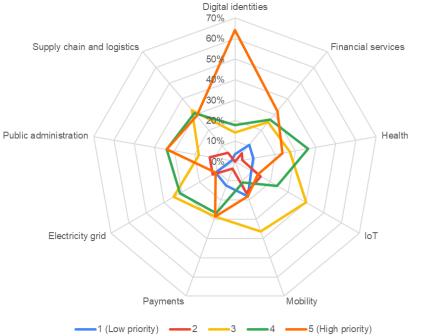- Provide education and training in the field of blockchain.

- Largest potential of blockchain in the public sector:

  ▷ Automation and integration of processes, including among the public and the private sector

  ▷ Provision of digital credentials (digital certificates).

# Blockchain based public services

In which field and/or for which applications, should Blockchain-based public services be provided?

# How can the public sector support the sustainable use of blockchain technology?

- Focus on the use of consensus protocols that are more energy-efficient than proof-of-work (PoS was mentioned a few times).

- Only develop and support projects that fulfill certain sustainability criteria.

- Encourage the use of renewable energy sources.

- Provide tax incentives for the use of technologies that the public sector wants to push.

National Blockchain Initiatives

# Belgium

- **Federal**: DIGI4FED – *Digital Revolution in Belgian Federal Government: An Open Governance Ecosystem for Big Data, Artificial Intelligence, and Blockchain*

  - ➤ understand how big data can be used in the Belgian federal administration system to enable better public service provision through new technologies such as artificial intelligence and blockchain.

  - ➤ PoC of a governance design in two specific federal areas: social security infringements and tax fraud

- **Wallonia**: Intelligent Specialisation Strategy

  - ➤ Sees blockchain's main potential in Belgian priority economic sectors: pharmaceuticals, logistics and agriculture and in the creation of an ecosystem including research, blockchain start-ups and selected companies.

  - ➤ Operational tool = WalChain. Mission: promote blockchain technology towards public and private players in Wallonia and to implement concrete actions to support blockchain usage.

# France

National blockchain strategy (2019)

- Step 1: create a clear legal, accounting and fiscal framework to allow the use of blockchain for the transfer of financial instruments and the issuance of digital assets in a secure framework.

- Step 2: focus on non-financial sectors, structured around 4 dimensions:

  - Industrial sectors

  - Technological challenges. Now: strengthen interdisciplinary collaborations between teams of researchers; develop partnerships between research and start-ups.

  - Encourage innovative projects (Future Investments Programme)

  - Provide support with regard to legal and regulatory questions

- Permanent task force to implement strategy

# France

- Digital Asset Service Providers – DASP (2019)

  - Change to the Monetary and Financial Code

  - Registration with the Financial Markets Authority AMF is mandatory for service providers that provide the following services in France:

    - digital asset custody; and/or

    - buying or selling digital assets in a currency that is legal tender; and/or

    - exchanging digital assets for other digital assets; and/or

    - operation of a trading platform for digital assets.

# Germany

National blockchain strategy (2019): "Blockchain Strategy of the Federal Government – We Set Out the Course for the Token Economy"

- Main objectives:
    - reinforce Germany's position as a leading technology hub;
    - protect consumers and state sovereignty.
- 5 areas of action
    - Securing stability and stimulating innovations: blockchain in the finance sector.
    - Bringing innovations to maturity: advancing projects and regulatory sandboxes.
    - Making investments possible: clear, reliable framework conditions.
    - Applying technology: digitised public-administration services.
    - Distributing information: knowledge, networking and cooperation.

# USA

▰ Presidential Executive Order: "Ensuring Responsible Development of Digital Assets" (9/3/2022)

  ▷ Lays out a national policy for digital assets across six key priorities:

      ▷ consumer and investor protection;

      ▷ financial stability;

      ▷ illicit finance;

      ▷ U.S. leadership in the global financial system and economic competitiveness;

      ▷ financial inclusion;

      ▷ and responsible innovation.

  ▷ Agencies targeted by the Order are given 180 days to release a report on their subject that should include any recommendations on regulatory or legislative actions.

# Luxembourg

- No global and coherent blockchain strategy has been announced by the government as it has been done by France or Germany.

# The Way Ahead

# Critical niches

■ Build expertise through training and education

▷ Include blockchain in university curricula

▷ Develop training related to smart contracts

▷ Develop training on Decentralised Finance (DeFi)

▷ Include blockchain in non-academic training

■ Support ecosystem collaboration

■ Identify opportunities in key economic sectors and initiate large-scale projects that facilitate ecosystem collaboration.

■ Create a secure environment

▷ Open-up the Public Sector blockchain to the private sector

▷ Provide testbeds

# Blockchain opportunities for the public sector

- Foster blockchain training for civil servants

- Provide a digital identity that is usable with blockchain-based services

- Streamline processes

- Push large scale interdisciplinary projects and POCs for the use of data, AI & blockchain

# Policy recommendations

- Provide clear political support

- Constantly monitor legislation and regulation

- Provide clear guidance on relevant regulatory and fiscal questions

- Define support measures

- Favour sustainability

- Prepare for cryptocurrencies

- Support the transition to DeFi, i.e. support the transformation of Luxembourg's asset servicing sector

- Understand and welcome DAO

# Questions?

# Thank you

@infrachain

https://www.linkedin.com/company/infrachain

http://youtube.Infrachain.com