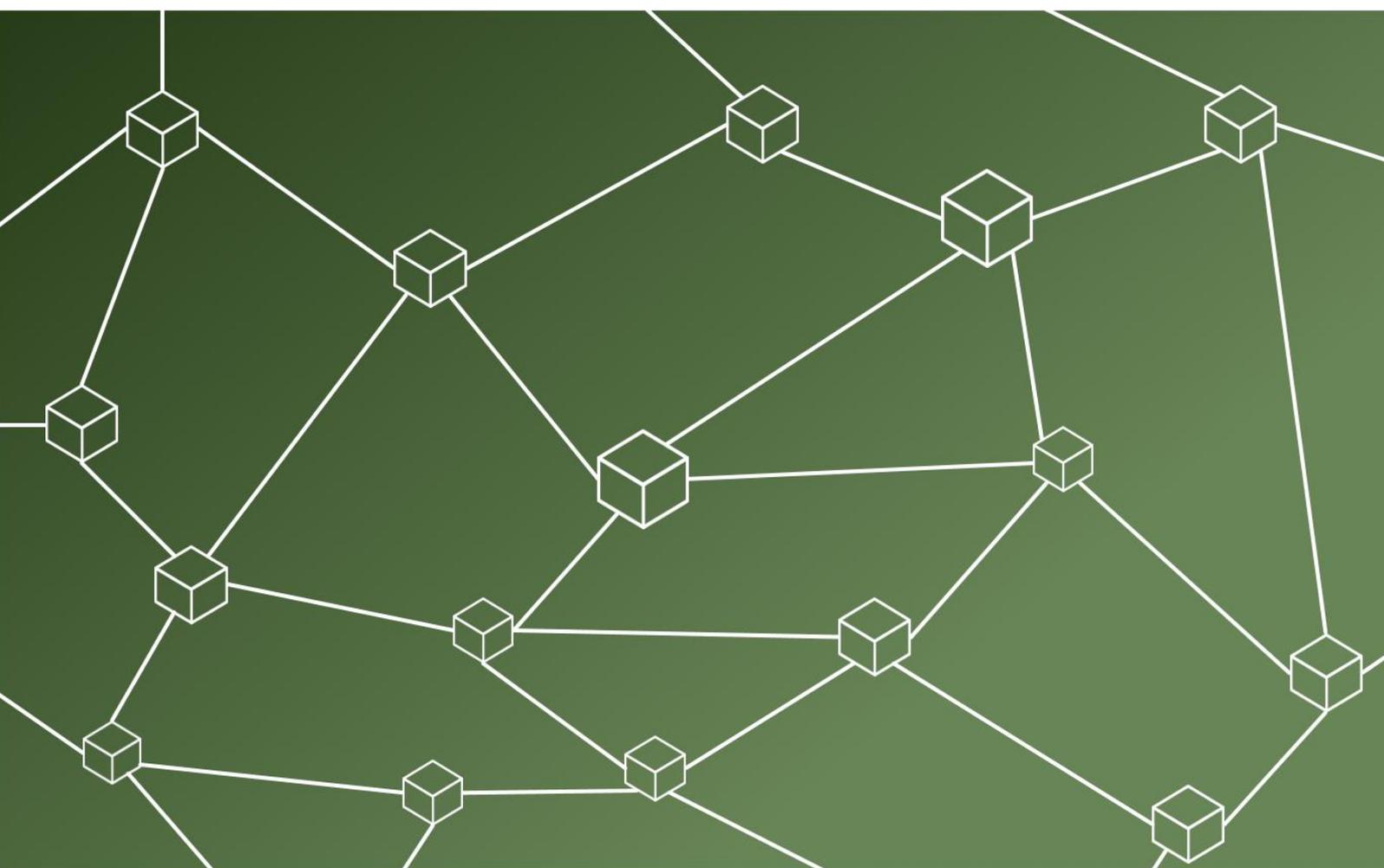


WEBINAR PROCEEDINGS

18 December 2020 | Virtual Webinar

Blockchain in the agri-food supply chain

How can DLTs impact current international practices?



Permanent Mission of Italy
International Organisations - Paris



Background

Distributed Ledger Technologies (DLT) and blockchain are opening tremendous market opportunities across the economy. Although the technology was first developed for financial applications, it has rapidly been applied to a growing number of industries, as its application can open-up entirely new business models but might also have a lasting effect on well-developed supply chains, such as in the agri-food sector. DLTs provide alternative ways to enhance security, traceability and accountability of goods in their path from producers to consumers – an important issue involving multiple actors in most OECD countries.

Many Small and Medium Enterprises (SMEs) are bringing innovative DLT solutions to the market, to enhance trust and accountability across multiple actors with conflicting interests and uphold international standards. Some of the supply chains in the agri-food sectors, extending across borders and regulatory systems all around the world, offer interesting areas of application for the technology – for example the supply chains for seeds, for wine, for the security of animal health, among others. The possibility to store a significant volume of important – and valuable - data in a secure, distributed infrastructure, without any single central point of failure, might offer important opportunities to fight counterfeiting and enhance transparency.

The webinar, which gathered more than 100 participants across 25 countries and diverse policy and business communities, aimed to discuss the opportunities and challenges of the application of DLTs and blockchain in the agri-food supply chain, with some concrete examples and a focus on SMEs that are providing these advanced services.

The webinar was jointly organised by the Italian Permanent Delegation to the OECD, the OECD Centre for Entrepreneurship, SMEs, Regions and Cities (CFE) and the OECD Agricultural Codes and Schemes, in cooperation with the International Organisation of Vine and Wine (OIV), the World Organisation for Animal Health (OIE) and the International Centre for Advanced Mediterranean Agronomic studies (CIHEAM). It was moderated by **Mr Marco Bianchini**, Economist from the OECD CFE.

Introductory Remarks

Ambassador Antonio Bernardini, Permanent Representative of Italy to the OII in Paris, opened the event by highlighting the value of bringing together different expertise from diverse international organisations (OECD, OIE, OIV, CIHEAM) to discuss the use of blockchain in a key sector as agri-food. The Ambassador pointed out that having also representatives from the private sector to discuss international practices in the application of this technology would provide even more interesting insights. He also delivered a message by **Hon. Mirella Liuzzi**, Undersecretary of the Ministry of Economic Development of Italy, who underlined the rapid growth of the blockchain industry in Italy, as observed in a recent OECD study¹ requested

¹ Bianchini, M. and I. Kwon (2020), “Blockchain for SMEs and entrepreneurs in Italy”, OECD SME and Entrepreneurship Papers, No. 20, OECD Publishing, Paris, <https://dx.doi.org/10.1787/f241e9cc-en>.

and supported by the Ministry. She also highlighted the opportunity to support the development of applications from this technology, which can boost innovation across the economy. An ongoing Italy's pilot project on agri-food sector traceability, involving various stakeholders in the ecosystem, represents a case in point of a broader effort to unlock the potential of this technology. **Hon. Manlio Di Stefano**, Undersecretary of Ministry of Foreign Affairs of Italy, pointed at the timeliness of the discussion, as digitalisation has become an indispensable tool for the post-pandemic recovery, and underlined how the webinar marks a step forward, as it embraces a multi-stakeholder approach to bring together international organisations and the private sector. **Mr Nadim Ahmad**, Deputy Director of the OECD Centre for Entrepreneurship, SMEs, Regions and Cities, highlighted that the DLT industry is moving beyond financial services, and that the opportunities blockchain-based software presents to SMEs and start-ups across sectors are quite interesting, particularly in agri-food. He further commented that blockchain-related policy initiatives that are being implemented around OECD countries can provide use cases and send positive signals to SMEs seeking or considering blockchain adoption, while addressing some of the main challenges they are facing.

Panelist Key Takeaways



Karen Bucher
Project Manager
OIE Observatory

Blockchain can be a game changer in the near future. As an international standard setting organisation for live animals and animal products, OIE has identified blockchain as one of the new technologies that can disrupt the way the organisation operates in the upcoming years. The foreseeable benefits of using blockchain along the food chain “from farm to fork” are in particular the immutability of data and the facilitation of data exchange. However, legal, regulatory and policy challenges need to be resolved, for example by introducing an institutional network of harmonized rules to guarantee accuracy of information. OIE is currently considering two aspects of blockchain usage, which are 1) creating a public-private partnership to provide a secure and predictable regulatory environment that can be deployed on a large scale, and 2) direct monitoring of OIE international standards implementation, which can help generate strategic insight on implementation of the standards.



Giorgio Delgrosso
Chief Digital
Transformation Officer
OIV

The vine and wine sector presents some characteristics that make it particularly suitable for the application of blockchain solutions. For example, the relatively high rate of fraud and counterfeits, the importance of provenance and authenticity, and the highly fragmented market with myriads of SMEs with outdated record keeping. OIV's main objective is to contribute to the international harmonisation of existing practices and standards in the vine and wine sector. Facilitating digital transition of the sector is one of the organisation's strategic plans, which led to creation of the Digital Transformation Observatory Hub. OIV has identified supply chain management as a key area of blockchain application in the sector. Despite the expected benefits, the lack of standardisation and interoperability between networks, issue of governance and scalability are challenges to the adoption of distributed ledger technologies. In addition, the fact that the technology requires high investment, new skills and new business models could scare SMEs and limit adoption. To support the transition, governments and international organisations can 1) improve understanding of blockchain 2) contribute to technical dialogue on research and development and 3) develop regulations, protocols and standards



Csaba Gaspar
OECD Seed Schemes
Programme Manager
OECD

Seeds play an important role in global agri-food value chains, as most food production starts with seeds (e.g. Italy is one of the largest seed producers/exporters in the world). Farmers' access to high quality certified seed is crucial in enabling production of food and other products. Blockchain-enabled digital value chains can help seed companies comply with international standards and prevent fraud, which is a major concern in the seed industry. It can also provide consumers with greater assurance over their purchases. The OECD Seed Schemes is an international varietal certification programme for seeds that aims to promote the use of high-quality seeds and facilitate international trade. The Schemes programme is starting a digitalisation process that will involve a comprehensive review and feasibility study of digital tools, such as blockchain.



Doug Miller
Partner
Adosi Consulting
(supporting the OECD
Seed Schemes)

Digital tools can be incorporated in the OECD Seed Schemes to increase integrity, reduce fraud and administrative burden to industry and managers of the programme. The current project's goal is to get the sense of how the programme is currently being administered, looking for small deviations between countries and how tools such as blockchain can be incorporated to gather data from the Schemes. There are important opportunities for SMEs and entrepreneurs in leveraging the technology. For example, when someone wants to bring end-to-end traceability to their product, by using OECD certified seed, they can tap into this new digital quality assurance programme, bringing next level traceability into their systems. However, data portability issue and cross-border data concerns need to be overcome. The OECD Seed Schemes are well positioned to incorporate digital tools like blockchain, because they have established standards and a framework to build consensus, as well as sufficient level of digitalisation.



Eleonora Ciciriello
Information Management
Officer
CIHEAM

Blockchain is one of the strategic approaches implemented by CIHEAM to promote innovation in the fields of sustainable agriculture and fisheries, food systems, coastal and rural development. The blockchain certification of CIHEAM-awarded diplomas has already been successfully carried out within this organisation, defining an integrated operating model, which guarantees to the CIHEAM graduates - the agri-food professionals of the future - the further benefit of gaining knowledge about this technology, challenging themselves to create experimental applications. Moreover, CIHEAM currently has been working on applying blockchain in agri-food sector with special focus on the organic supply chain. Blockchain is important for the sector as it can enhance supply chain management and process traceability, branding and process monitoring. In addition, CIHEAM is conducting dissemination and outreach activities (e.g. technical workshops).



Oliver Oram
CEO/Founder
Chainvine

Paperwork is the biggest problem most SMEs are experiencing today. It is difficult to move goods around without paperwork, and this constrains their system and resources. The conversation should focus on the solutions to these problems, rather than on blockchain technology *per se*. The benefits of using digital system is that producers and importers can save a good deal of money spent on paperwork. In a recent study by Chainvine on their proprietary platform, the cost saved when moving wine from Australia to the U.K amounted to 50-60%. The technology can sometimes be fuzzy and hard to understand, but it does not have to be complicated. The audiences need to understand the costs savings and benefits when it comes to blockchain solution. The suggestion to wine SMEs is to test new platforms, experiment and see what they can do to open up areas of trade that have previously been blocked due to the cost of doing business.



Francesco Fiore
Business Development
Manager
EZLab

Blockchain is still at its beginning, but it already has a broad range of uses in various sectors, including clothing, medicine, healthcare, and of course agri-food. Blockchain platform is a layer upon which we can build smarter agri-food industry - as it is the necessary layer used to communicate with other technology such as Internet of Things (IoT). For instance, when a pumpkin is connected to a blockchain platform, it becomes a pumpkin with data, with each pumpkin having a unique data that can show its proper value. In a global market with problems of counterfeits, trust becomes the new currency. Data stored on blockchain can be used to build trust between manufacturers and consumers. Environmental data, as well as data on social aspects such as compliance with labour standard, can make customers trust products. In addition, as blockchain distribute data along the value chain, there is no need to rely on a single dominant player that owns and controls the data. Looking beyond supply chain, blockchain can also be used for precision farming, which is more sustainable.

Conclusion

Ms Sophia Gnych, Senior Programme Officer from the OECD Seed Schemes, summarised the key messages from the panel discussion. COVID-19 has highlighted how many of the international standards still rely on paper based systems and has demonstrated the importance of digital tools in keeping supply chains operational. International organisations have established initiatives to better understand the potential benefits of technologies, including blockchain, in terms of making the lifecycle of certified products more transparent. Cross-border agri-food supply chains offer a particularly interesting application of blockchain, which could reduce the administrative costs (i.e. paper work) of adhering to national and international standards and regulations. Secure and distributed infrastructure offered by DLTs can offer important opportunities in the fight against counterfeiting. As the technology is still at an early stage of development, a number of challenges, such as interoperability, establishing a regulatory framework surrounding the technology and ensuring the input of accurate data needs to be addressed, which calls for multi-stakeholder and public-private partnerships, as suggested by the panelists. In addition, providing businesses with education and training on the implementation and potential applications of blockchain technology is critical for its uptake and success.

OECD Contacts

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