I

(Resolutions, recommendations and opinions)

OPINIONS

EUROPEAN ECONOMIC AND SOCIAL COMMITTEE

545TH EESC PLENARY SESSION, 17.7.2019-18.7.2019

Opinion of the European Economic and Social Committee on 'Blockchain and distributed ledger technology
as an ideal infrastructure for the social economy'

(own-initiative opinion)

(2019/C 353/01)

Rapporteur: **Giuseppe GUERINI**

Plenary assembly decision	13.12.2018
Legal basis	Rule 32(2) of the Rules of Procedure
Section responsible	Single Market, Production and Consumption
Adopted in section	4.7.2019
Adopted in plenary	17.7.2019
Plenary session No	545
Outcome of vote (for/against/abstentions)	179/1/2

1.   **Conclusions and recommendations**

1.1.   The EESC supports the activities proposed by the European Commission to develop a European Blockchain Partnership, starting with the EU Blockchain Observatory and Forum.

1.2.   The EESC would encourage the institutions to facilitate the involvement of civil society organisations in the Observatory and European Blockchain Partnership, as, clearly, the successful development of blockchain and the new digital infrastructures does not only come down to IT, but involves a fully-fledged process of disruptive social innovation.

1.3.   The EESC believes that social economy organisations can help to promote greater and informed awareness of the potential of blockchain, specifically with regard to identifying cultural and methodological values built around forms of open and participatory governance, with the aim of maintaining a high level of transparency and involving all Europeans in the development that these new technologies may bring about.

1.4.   The practical applications of blockchain technologies can significantly improve the performance of social economy organisations, benefiting them, their members and, above all, their end-users.

1.5.   Business ventures based on 'distributed ledger' technologies (DLT) need sound governance structures that provide clarity as regards roles and responsibilities and underpin cooperation between the various stakeholders.

1.6.   The EESC calls on public authorities to ensure that blockchain technology develops in compliance with the rules on the processing of personal data and on cybersecurity, and to guard against the risks of individuals' or businesses' data being hoarded or misused.

1.7.   With regard to the profound changes that these new technologies are set to bring about, the EESC recommends that individuals and workers be duly protected, including through proper involvement of the social partners, particularly as regards their working conditions and in relation to putting in place proper plans for training and updating skills.

1.8.   The EESC believes that real involvement of social economy and civil society organisations is imperative to ensure that the huge opportunities offered by the new technologies are geared towards delivering benefits, access, transparency and participation for all, and not just for a new 'digital economy elite'.

2.   Background and subject of the initiative

2.1.   This own-initiative opinion can be traced back to the conclusions of the Luxembourg presidency, which contained a call for the innovative potential of new technologies in the social economy to be explored.

2.2.   Emerging among these new technologies is the disruptive innovative potential of the various forms of distributed ledger technology (DLT), known as blockchain, which are set to enable the development of very attractive applications across a range of economic and social sectors.

2.3.   Some features of these technologies make blockchain a digital infrastructure, which could be successfully used by social economy organisations to improve how they achieve their goals, increasing their capacity to have a positive social impact and foster social innovation.

2.4.   The EESC would encourage the institutions to facilitate the involvement of civil society organisations in the European Blockchain Observatory, as the successful development of blockchain and the new digital infrastructures cannot depend only on IT solutions, or even on engineering alone, but will come to fruition only if we can make these devices drivers of disruptive social innovation.

2.5.   It is worth pointing out that DLT ensures trust between partners that are inclined to cooperate, and primarily certifies transactions, not the content or quality of what is contained in the block chains. Therefore, although some optimistic assessments of this technology see it as a new means of generating trust, it should be made clear that the technology cannot be a substitute for honesty and trust between the parties.

3.   A brief description of blockchain and distributed ledger technologies

3.1.   Blockchain technology is an IT protocol that dates back to the 1990s. However, its large-scale use and success are linked to the spread of cryptocurrencies, the best known of which is Bitcoin. However, it would be a mistake to consider blockchain as simply being cryptocurrencies. Indeed, as a result of harnessing blockchain to IT systems' increasing computing power and capacity for data analysis, and given the strengthening of connectivity in Europe and the ongoing development of artificial intelligence systems, the potential to use DLT for a range of purposes is growing exponentially.

3.2.   Blockchain is both a code, i.e. a communication protocol, and a public register, in which all transactions between network participants are recorded one after the other, with a high degree of transparency and in a way that cannot be altered.

3.3.   This order of records comprises a set of 'blocks' (parts of code) that are linked together cryptographically, making each part of the block that forms the chain traceable and unchangeable. These 'chain-linked blocks' are simultaneously recorded on each of the devices through which the blockchain participants connect. Each participant is a link in the chain, helping to validate and store the data that is being exchanged.

3.4.   In this way, the transactions take place horizontally and are validated by a number of participants, making it impossible for a single operator to alter or destroy the records. This should make the data processing secure and help build mutual trust between the blockchain participants involved in the distributed and decentralised validation process. Blockchain is therefore an attractive tool for redefining the concept of security when it comes to digital transactions.

3.5.   This is why blockchain technology has mainly been used as infrastructure for virtual currencies; but for the same reasons it can also have a social, cultural, political and economic value. However, any other use in physical and non-virtual economic contexts requires awareness that DLT does not guarantee the quality of the content it refers to. In other words, it is possible to certify that a given product has passed securely through a traceable supply chain in a DLT, but it is not possible to say that the product is inherently of good quality.

3.6.   As each participant in a blockchain has direct control over one part of the whole chain, blockchain becomes a decentralised system, that cannot easily be 'dominated' by a single operator. This increases security vis-à-vis attacks or sabotage, as if one of the nodes in the chain is attacked or damaged, the other nodes of the 'distributed ledger' continue to function.

3.7.   The transactions carried out in the distributed ledger via blockchain can be tracked by and are visible to all participants, thus ensuring transparency and not requiring the involvement of a 'central authority' or 'third party' to act as a mandatory middleman or intermediary. However, the development of quantum computers, as well as the theoretical possibility of 'controlling' a significant number of nodes in the network, does not completely negate the risks of concentration or control of DLT, nor of data hoarding and concentration.

3.8.   These features enable blockchain technology to also develop fully-fledged self-executing contracts, known as smart contracts, which enable transactions to be customised and detailed in a fast and horizontal manner. In this way, certified basic information is transformed into an enforceable right, which could have an impact on many social, economic and political practices.

3.9.   Examples include developments in eGovernment in the areas of elections and voting systems, welfare and health benefits and the management of public procurement.

3.10.   The key words of blockchain technology: decentralisation, transparency, peer-to-peer participation, reliability and trust, are echoed to a large extent in the main forms of organisation through which social economy enterprises and organisations operate. This will be all the more true if DLT networks are developed with a high degree of interoperability enabling users to make use of these technologies on the basis of cooperation, and access them from different devices and tools.

4.   **The European Union and blockchain**

4.1.   The EESC endorses and supports the activities that have been undertaken by the European Commission and many of the Member States to develop a European blockchain partnership. It is a matter of strategic importance that Europe does not lose ground in the ongoing international competition that surrounds the development of all digital technologies, and that it encourages and promotes cooperation between the various public and private stakeholders aimed at creating a European blockchain infrastructure.

4.2.   The European Parliament has also expressed its views on these issues in its Resolutions 2017/2772 (RSP) and 2018/2085 (INI), and called for the Commission to assess the social impact of DLT.

4.3.   Equally important was the European Commission's launch, on 1 February 2018, of the EU Blockchain Observatory and Forum, which has already published a number of thematic reports ([1]).

4.4.   The EESC firmly believes that, in order to ensure that the benefits of blockchain technologies are properly developed, an appropriate framework of rules will need to be promoted that encourages and fosters cooperation between the public and private sector and organised civil society. This is required in order to achieve the positive social, cultural and regulatory convergence that is needed to open up all of the opportunities to improve services and processes in both the public and private sectors.

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[1]   *Blockchain Innovation in Europe*, July 2018, *Blockchain and the GDPR* (General Data Protection Regulation), October 2018, *Blockchain for Government and Public Services*, December 2018, *Scalability, interoperability and sustainability of blockchains*, March 2019, *Blockchain and Digital Identity*, May 2019.

5.   **Could blockchain and decentralised distributed ledgers be appropriate infrastructure for the social economy?**

5.1.   While blockchain technology is a useful tool for redefining trust in a global digital economy, by using these technologies, social economy organisations can help democratise the economy by fostering the emergence of a digital social economy.

5.2.   The financial crises have weakened people's confidence in financial institutions. Trust has now become a social resource that is in short supply, and which is further dwindling as a result of the growing concerns about the security of data collected and stored by certain large economic operators.

5.3.   Social economy enterprises, which tend to be very widespread, and rooted in local areas and communities, can play an important role in supporting the widest possible dissemination of opportunities among Europeans. To this end, they can make a positive contribution to promoting convergence in terms of ethics and values between the social economy and technological innovation, moving towards a development model that reflects shared interests.

5.4.   There are many conceivable practical ways in which blockchain technologies can be used in social economy organisations.

5.5.   To start with, a technology that increases transparency and trust can easily be used to make donations and fundraising secure and traceable, for example by enabling a donor that gives funds to an NGO to follow the flow and destination of the money donated. From a different angle, the same NGO could equip itself with a system that makes it possible to report in detail on each expenditure stream, ensuring that money invested is actually used for the intended purposes.

5.6.   By adopting blockchain technology, many social economy organisations could significantly improve how they manage their governance, making it more secure and traceable (consultation of members and voting procedures), facilitating participation and involvement even where members are spread out geographically, or are so numerous that it is difficult to hold traditional general meetings.

5.7.   Many cultural activities, from training to the arts, are run by social economy organisations. Associations and cooperatives in the fields of education and training, as well as those involved in entertainment and artistic and intellectual productions, will be able to use blockchain technology to both authenticate activities carried out at a distance, and to tailor them to users' needs. However, in particular, it can be used to make intellectual property rights and copyright clearer and more certain, establishing 'smart contracts' for the transfer of content.

5.8.   In the area of training and education, blockchain could be used for the certification of skills, ensuring the security of qualifications and diplomas in digital format, and issuing digital certificates that automatically update the CV of workers and students.

5.9.   We can anticipate very significant uses for this technology in the area of health, personal care and social assistance, both for the secure storage of data and information, and for access for and identification of the people concerned. In this area, a huge number of social economy organisations are involved in work at close proximity to those in need, including in decentralised areas, where the possibility of deploying secure telemedicine and e-care systems could have a considerable impact on people's quality of life.

5.10.   These technologies often require skills and resources that are not available to everyone. This is particularly the case with the most vulnerable people such as older people, the poor, people with disabilities, children and marginalised families. For these sections of the population, which we all have a duty to think about, social economy organisations can be a fundamental access point.

5.11.   Many cooperatives in the agricultural sector are looking at how the new technologies might be used to make their products traceable and identifiable with complete certainty, preventing fraud and counterfeiting which harm producers and consumers. Furthermore, blockchain technology could make the relationship between an agricultural cooperative and its grower members more certain and transparent, and reduce the cost of services such as insurance against risks linked to natural disasters.

5.12.   As we know, blockchain's initial applications were in developing cryptocurrencies and peer-to-peer payment systems. This could be useful in the social economy sector for managing both crowdfunding and complementary payment schemes useful for micro-credit transactions for people without access to a bank account; it could also be useful for managing ethical micro-investment networks geared towards community economy circuits.

5.13.   Environmental associations and social enterprises are also key players in the field of waste reduction, and the collection and differentiated treatment of waste. In these areas too, the potential of decentralised distributed ledgers can be used to improve the services provided to the public.

5.14.   Renewable energy cooperatives, of which there are already more than 1 500 in Europe, involving more than one million people active in the energy transition, could optimise their distribution network and transitions by using blockchain technology.

5.15.   The energy issue is a very important aspect of blockchain, as currently, the simultaneous recording of data and block chains carried out across a number of decentralised servers and devices generates a very high energy use. This means that we still need to optimise the use of energy to make blockchain technology more sustainable.

5.16.   Given that blockchain technology has the potential to bring about major positive developments, attention should be drawn here to the fact that it is impossible to alter the data recorded through the blockchain. Public regulation of this technology must therefore guarantee that it develops in compliance with the rules governing the processing of personal data (the GDPR), with particular reference to the so-called right to be forgotten.

5.17.   The current rules on these issues must be continuously adapted, either directly or in interpretation, to the very rapid technological change taking place. This is the only way to ensure that the positive developments expected from blockchain technology do not go hand in hand with adverse developments and problematic implications.

5.18.   Blockchain technology will have notable effects on the labour market; some jobs will disappear, other jobs will change profoundly, and other occupations will emerge and develop. The EESC considers it important that workers be adequately protected, in particular by setting up appropriate training plans and active employment policy instruments, with the involvement of the social partners.

5.19.   The huge potential of the new digital technologies and the high cost of the investment required also expose blockchain technology to the risk of concentration as regards the devices capable of making it work. As a result, alongside the potential to democratise the network, there is also the risk of the data and technological networks being subject to speculation and hoarding in the hands of the few players or countries able to make large investments. It is therefore important that there are public interventions to support the development of these technologies in a participatory and accessible way.

Brussels, 17 July 2019.

The President
of the European Economic and Social Committee
Luca JAHIER