

# A blockchain-driven e-participation for substantial democracy\*

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**Abstract.** Bearing in mind the underlying opportunities and risks of the Internet as well as the European stance on “Better Regulation” – according to which consultations and impact assessment are an intertwined essential feature for more democratic legitimacy (i.e. input and output legitimacy) – this essay tries to reshape the approach to e-participation. In this regard, it enters the matter of the deployment of a specific technology endowed with capabilities that comply with open and transparent peer participation relying on verified and tamper-resistant information and data stored on it (i.e. blockchain and DLTs). Then, the essay enters the specific domain of the *social* impact assessment where public participation and – specifically – e-participation through blockchain technologies is deemed to assume an added-value. Indeed, in this case (social impact assessment), storage in such a technological tool of civic knowledge, expertise and public spirit becomes even worthier because of its architectural features. In this sense, its deployment may smoothen the transition from a procedural democracy to a more substantial democracy, and recent studies such as recent initiatives have proved the awareness of the EU of the potentiality of blockchains and DLTs for participatory and democratic purposes.

**Keywords:** E-Participation; Blockchain; Social Impact Assessment

## 1 A brief overview

Institutions are getting more and more accustomed to technological developments. A first piece of evidence of this process is the set of regulatory approaches they adopted[1]. A second piece of evidence falls on the use of information and communication technologies (ICT) for transparency, democracy, accountability and openness purposes[2] or the deployment of technology at large as a tool of regulatory management[3].

Indeed, these two pieces of evidence are intertwined, as regulatory techniques often stand on the deployment of technologies to deliver more democratic and effective policy outcomes. In this last regard, it is the EU Better Regulation strategy that comes into play: here, the need of impact assessment for an in-depth analysis of the complexities

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embedded in current reality goes hand in hand with public consultations<sup>[4]</sup>. More specifically, the involvement of technical expertise is integrated by the participation of citizens and civil society due to the fact that the contribution of political and technical expertise is often not enough for fully understanding the issues at stake<sup>[5]</sup>, as new forms of criticalities and fragilities requires the support of civic expertise to the decision making process<sup>[6]</sup>. Against this backdrop, the architectural features of the internet have smoothed and underpinned the creation of communicative channels between public power and civil society, along a bottom-up and top-down way of inter-action<sup>[7]</sup>. Indeed, “The design of the original Internet was biased in favour of decentralization of power and freedom to act. As a result, we benefited from an... extensive participatory activity”<sup>[8]</sup>.

Consequently, as stressed by Stefano Rodotà, deliberative democracy seems to follow the mandatory ways of “technopolitics”, therefore the administrative and political process as a whole is becoming an ongoing democratic process due to the deployment of information and communication technologies<sup>[9]</sup>.

The reverse side of this phenomenon implies different scales of risks. On the one hand, misleading information, manipulation<sup>[10]</sup> and control over data and the behavior of internet users<sup>[11]</sup>. These risks are double-sided, as they involve the relationship between citizens and institutions as well as consumers and market powers. In this regard, the dispute of the US President, Donald Trump and Twitter and his relevant executive order as well as the EC’s legislative initiatives to regulate online platforms are telling. On the other hand, it is the “digital divide” and the implied equality in access to internet that are called into question.

Against this brief overview, our starting point is a well settled question already posed by the current Italian Data Protection Authority: “How much power can a democratic system delegate to technology without denying itself?”<sup>[12]</sup>.

The answer obviously depends on the purposes and ways of technological deployment. In this respect, the essay deals with the capabilities implied in an on-going technology (blockchain) for the sake of participatory democracy in a domain that more than others needs “civic engagement” (i.e. the social impact assessment).

Consistently, recent studies entrusted by the European Commission<sup>[13]</sup>, its initiative for the EU Blockchain Observatory and Forum, as well as the opening (in May 2018) of the European Innovation Council Horizon Prize on blockchain for social goods, highlighted the potentiality of a blockchain system for participation in democratic decision-making.

## **2 E-participation: a premise**

As stressed by doctrine, participatory democracy is different from participation and does not require any specific and explicit constitutional or statutory provision, as it is an essential prerequisite for democracy and popular sovereignty<sup>[14]</sup>.

By means of participatory democracy, people take part in the decision-making process, not as a substitute for representative democracy but to improve its performance<sup>[15]</sup>.

In this regard, doctrine has stressed the added value and the practical benefits of doing consultation by means of electronic tools in respect of different ways of participation<sup>[16]</sup>. As a consequence, electronic participation is not deemed an end in itself, but rather a means to better perform democratic purposes, and as such it entails a new horizontal organizational model between public power and civil society through continuous processes of communication, information sharing and exchange for more aware and coherent public policies<sup>[17]</sup>.

More specifically, e-consultations differs “from other spaces in the informal virtual public sphere. In informal discursive e-spaces such as virtual communities, topical forums, chat rooms or newsgroups, participants interact as equals and may but do not explicitly seek to wield political influence. The *raison d’être* of e-consultations is to affect formal (institutional) political and decision-making processes”; furthermore, “e-consultations are also more formal and structured than discussions in the informal virtual public sphere. They tend to have a set duration, agenda, employ the use of moderators, with topics for discussion pre-defined by the host”<sup>[18]</sup>.

At this point in time, it is crystal clear that electronic tools may integrate and benefit the decision making and its democratic scope, as they may improve openness, transparency and information by means of communicative channels between different governmental levels and society<sup>[19]</sup>.

It is equally clear that this bottom-up and top down flow of communication adequately performs only if it stands on complete, reliable information and data, which – once again – call into question the issue of misinformation. Indeed, civil society builds its opinion on both channels of information, whether fed by public institutions or privates. This is an ongoing and open issue that the European Commission is currently trying to cope with<sup>[20]</sup>. Another implied risk in electronic participation is the digital divide that adds to already existing risks of public consultation at large producing further asymmetry and inequality in participation. As such, it requires a broad and structural intervention to be implemented by various tools (i.e. right to internet as a fundamental social right<sup>[21]</sup>, the definition of standards and guidelines for best practices in public consultations<sup>[22]</sup>). A further risk is the delay in the decision making as well as the efficacy and effectiveness of public consultation in respect of the deliberative outcomes<sup>[23]</sup>.

Bearing this premise in mind, the essay does not intend to underestimate or shadow the multifaceted difficulties that need to be overcome for a well-functioning electronic participation<sup>[24]</sup>; it rather aims at reshaping the approach focusing on a particular technology endowed with potentialities that can comply with open, trusty and transparent peer participation. Moreover, the architectural features of this technology are suitable for the addressed substantial matter, i.e. social impact assessment.

### **3 Re-shaping the technological architecture of e-participation: blockchain technologies**

By means of on-line platforms, different types of electronic participation tools may be deployed, such as question and answer discussion forums, editorial consultations or others<sup>[25]</sup>.

On-line platform for dialogue with the civil society is a practice well known at the European level. In April 2001, the European Commission issued a Communication on Interactive Policy-Making<sup>[26]</sup> for the improvement of the European governance system by using the internet to facilitate open consultations on new initiatives (beyond other purposes). It was an open source application, freely accessible for Member States administrations and privates. Then, the European Commission created a single access point website called “Your voice in Europe” for public consultations, lately replaced by [https://ec.europa.eu/info/consultations\\_en](https://ec.europa.eu/info/consultations_en)<sup>[27]</sup>.

At the national level, Article 9 of the Digital Administration Code (Italian Legislative Decree No. 82/2005), headed “Electronic Democratic participation”, fostered electronic consultations on normative or administrative proposal drafts.

Across different countries, different forms of participation and e-participation have been experienced<sup>[28]</sup> but it is not for the limited purposes of this essay to analyse them; our aim is rather to focus on the features of a particular technological infrastructure that fits the purposes of transparent and reliable information and consultations. The reference is to the blockchain technology and its way of action.

It is a peer-to-peer network, disintermediated and transnational that “enables people to store non-repudiable data, pseudonymously, in a transparent manner”<sup>[29]</sup>; in a few words, it is a distributed ledger technology.

More specifically, a blockchain is supported by a network of computers (called nodes) without any centralized party for maintenance or operation, thus “anyone with an Internet connection can retrieve information stored on a blockchain simply by downloading freely available open source software”<sup>[30]</sup>. Indeed, a blockchain is public and open when everyone can access and read information recorded to it and permissionless when anyone can store, verify and validate information in the blockchain.

Consequently, on the one hand, there is no central point of failure and the system is very difficult to attack; on the other hand “trust between participants is based on the set of rules that everyone follows to verify, validate and add transactions to the blockchain”<sup>[31]</sup>; these rules are steered by an algorithm which defines the way to reach the “consensus”. In this sense, a blockchain is “tamper-resistant”, because information stored is hard to change or delete without the consent of the other nodes. Accordingly, because of the “consensus mechanism”, data in the blockchain is transparent, authenticated (relying on digital signatures and public-private key cryptography), non-repudiable and non-falsifiable<sup>[32]</sup>. “More generally, a blockchain can be regarded as a shared repository of information – an open, low-cost, resilient, secure storage system that nobody owns but many people maintain”<sup>[33]</sup>.

Consequently, even though blockchain and distributed ledger technologies still have flaws due to their recent origins and pose multiple legal challenges, nonetheless they

“could be a far-reaching innovation”<sup>[34]</sup>, and could be deployed for different applications (beyond their original use for cryptocurrencies).

The capabilities of a blockchain may encompass e-government and e-democracy tasks, and may thus improve public services and benefit the society at large<sup>[35]</sup>.

For our specific purposes, it is relevant to highlight the features of blockchain technologies that are suitable for broad, transparent and reliable participation.

In this respect, not only the information stored by the institution that opens the consultation can be verified by the other nodes (according to a peer-to-peer approach), thereby reducing the risk of disinformation, but all the nodes can interact with each other and access and read different opinions or information recorded to the distributed ledger and already verified and validated by the participants (the so called miners). Moreover, its transnational scope allows a broader cross-checking of information and data. This is a fundamental feature that makes the participation process more transparent, democratic and trustworthy.

Consequently, it is worthwhile to recall that information stored in a blockchain “is open to every user, and the information asymmetries between two users are minimized. Thus, it’s not possible for one user to cheat or hide information from another user”<sup>[36]</sup>.

Accordingly, a blockchain technology may improve and foster the relationship among institutions, citizens and civil society by means of enhanced confidence of the latter in the former, as may thus strengthen their participation and increase the performance of public policies<sup>[37]</sup>.

In this regard, it is worth remembering that in May 2018, the European Commission opened the European Innovation Council (EIC) Horizon Prize for Blockchains for Social Good, which was aimed at leveraging decentralized solutions based on DLTs for (among other goals) “participation in democratic decision-making by enabling accountability, rewarding participation and/or anonymity”<sup>[38]</sup>. On 29<sup>th</sup> June 2020, the European Commission announced six prize winners, including projects on participation in democratic decision making<sup>[39]</sup>.

#### **4 Re-shaping the contribution of e-participation to substantial democracy: Social Impact Assessment**

The opening of the decision-making process to citizens and civil society can occur for a double layer of reasons: on the one hand, for democratic legitimacy (input legitimacy); on the other hand, for “better regulation” purposes (output legitimacy)<sup>[40]</sup>. In this last respect, impact assessment and consultation, at the European level, are jointly concerned and considered as mutually improving<sup>[41]</sup>, but beyond the evidenced criticalities on the effectiveness of consultations with respect to the outcomes of the deliberative process<sup>[42]</sup>, there is a preliminary issue to tackle. It deals with the distinction between the procedural contribution of participation in democracy<sup>[43]</sup> and its capability to contribute substantially<sup>[44]</sup>.

On the one hand, the possibility for participants to substantially feed the process is (also) due to the targets of the consultation. When it entails the specific target of the

“social impact” of the provisions in process of adoption, the added-value of a “dialogue” within the civil society at large and between the latter and public institutions becomes more evident because of the relevance of the contribution of “civic knowledge”<sup>[45]</sup>, as the contribution of experts is not enough.

Indeed, in this case (i.e. social impact assessment) the opening of the deliberative procedure to the participation of civil society seems worthier than in other cases, as anybody else than the addressed people may highlight their actual needs and the existing social shortcomings<sup>[46]</sup>. Consequently, the intervention of expert’s advice and their technical viewpoint require to be complemented by the common understanding and knowledge of the matter because of the welfare goals encompassed within the arrangements in process of adoption. This means that when the wellness of society comes into play (through the social impact assessment), a comprehensive evaluation that overcomes the mere technical and economic measurement of well-being in terms of revenues, wealth and domestic product is more functional<sup>[47]</sup>.

On the other hand, the potentiality implied in this sort of consultation may be facilitated by means of a technological system which is able to support a distributed network of peers that store information within censorship-resistant blocks (i.e. the blockchain operative system). Indeed, the architecture of a blockchain, its peer-to-peer structure, fits the equality principle, more specifically the equal, trusty and transparent exchange of information which is visible to all. In addition, “because blockchains help people reach consensus, they may help solve some of the issues traditionally associated with shared common-pool resources”<sup>[48]</sup>.

Consequently, it is the structural feature of the technology itself that smoothen the path towards an effective contribution to the collective dialogue that qualify consultations, and thus it contributes to building the basis for the transition from a procedural to a more substantial output<sup>[49]</sup>.

In this regard, a social impact assessment carried out by means of a blockchain-driven public participation matches with multiple purposes: not only it equally voices broad, different information and data for the sake of a better tailored and comprehensive public policy choice, but also it fosters confidence in people and institutions due to its tamper-resistant, transparent and visible way of action. Moreover, as recent studies have shown, the blockchain operative system allows the use of tokens “as a tool to increase civic engagement by supporting citizens’ extrinsic motivation”, as such finding new forms of democratic commitment because “technological deployment in the last decade has not been accompanied by greater participation or greater resilience of our democracies given the space of uncertainty generated by our complex societies”<sup>[50]</sup>.

Consequently, participation of citizens and civil society in a social impact assessment (ex-ante and ex-post) by means of blockchain technologies, enhances both, procedural democracy and substantial democracy<sup>[51]</sup>.

In this respect, it is worthwhile to recall that one of the 11 topics of well-being included in the OECD’s Better Life Index is “civic engagement”, which takes into consideration not only “voter turnout” (percentage of the registered population that voted during an election) but also “stakeholder engagement for developing regulations” by means of public consultations.

## 5 Conclusive Remarks

The European stance that makes “Better Regulation” perform by means of the mutual involvement of impact assessment and participation (which we still deem valid) may receive improvement by the deployment of a specific technology (i.e. blockchain) in reference to a specific purpose (i.e. social impact assessment). Indeed, the potentiality embedded in a blockchain system in terms of equality – by means of its peer-to-peer architecture –, transparency – since the stored information and data are visible to all the nodes –, reliability – due to its tamper-resistant features – are suitable for broad, open, transparent and trusty consultations. Moreover, this “architectural” added-value for e-participation may receive implementation when deployed for social impact assessment because of the essential support – in this domain more than in others – of civic knowledge, expertise and public spirit. Furthermore, the mentioned possibility of a reward for e-participation may strengthen civic engagement. Consequently, beyond the theoretical e-democracy models one may adopt<sup>[52]</sup>, the described potentiality of a blockchain technology, as well as its deployment for a specific objective (i.e. the social impact assessment) close to citizens’ sensitivity, is deemed to fulfill legal purposes that put into practice fundamental democratic values. Indeed, it carries out a technology-driven procedural path that fits the aim of an improved substantial civic contribution to the decision-making process in terms of equal, reliable, transparent e-participation.

The European Union has proved aware of the capability of blockchain technologies for e-participation and e-democracy at large (as shown by the aforementioned studies and initiatives), in this sense its endeavor is to regulate and standardize this ongoing evolutionary technology without hindering its development and usefulness. In this regard, our concluding remarks intend to underline the relationship between the potentiality of a blockchain technology and a social impact assessment for the (procedural and substantial) improvement of participatory democracy as a whole.

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