Blockchain, DLT, Tokenization, and Digital Government Minitrack (Introduction)

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Blockchain and, more widely, the Distributed Ledger Technologies (DLT) have been successfully applied as promising techniques to achieve decentralized consensus, mainly in the business sphere. Their implementation bring promises of the improvement of security, efficiency, and speed in transactions and processes, which helps explain why so many government leaders are actively exploring its uses in government. Indeed, currently there is a lively debate for implementing blockchain and DLT into the public sector entities to conduct their operations (Government Office for Science, 2016) and research is focusing on topics like smart contracts, protection of intellectual property, identity management, electronic government as a service, land registry and so on (The Law Society, 2017).

Blockchain and DLT could reshape the way public sector entities and citizens interact with each other, providing not only effective and safe transactions, but also enhancing information transparency and accountability. These technologies are called to play an important role for secure decentralization in such emerging fields as Internet of Things, edge computing, social networking, crowdsourcing and next generation wireless communications, among other fields. Also, its advance should be further evolved in terms of scalability, privacy, efficiency, flexibility, tokenization and high dependability. All this could have an impact on organizational changes and on the transformation of processes into the public administrations.

This way, prior research, mainly focused on the business sector, provides strong evidence that blockchain applications could transform existing models and invent new forms of processes in a profound way. Therefore, while ambitious public sector entities are eager to get ahead of the game and adopt its disruptive potential, choosing the correct platform and adopting a clear strategy can be a key element in implementing blockchain and DLT into public sector. Nonetheless, despite the relevance of blockchain, DLT and tokenization into the public sector sphere, literature is not rich in references to these topics. In fact, we are in the infancy of these topics into this new arena.

The three papers included in this minitrack represent different approaches to the relevance of blockchain and DLT systems in public administrations. Together, they offer a platform for discussion of emerging and innovative research in this subject. They explore, on one hand, the factors that affect the implementation of this new technology and, on the other, pay attention to the challenges and opportunities that blockchain and DLT bring for regulatory issues and for digital contracts.

In the first one, "Early Regulations of Distributed Ledger Technology/Blockchain Providers: A Comparative Case Study", Hans Jochen Scholl, Roman Pomeshchikov and Manuel Pedro Rodríguez Bolívar provide an interesting overview of a snapshot situation in legislations on DLT systems, comparing the regulative approaches taken by three early movers in DLT/Blockchain regulation: Liechtenstein, Malta and Gibraltar. The study discusses the prospects of DLT/Blockchain service regulation and concludes that it appears to incorporate predominantly principle-based rather than rule-based regulations, which makes the regulation enforcement a uniquely individual case-based task. In addition, harmonized regulation, at least to some degree, across major jurisdictions would help the token economy.

In the second paper, "New Kid On The Block!. Understanding Blockchain Adoption in the Public Sector", Fay Koster and Hans P. Borgman analyze the factors that influence blockchain adoption in the public sector. They use an extended Technology-Organization-Environment (TOE) framework that includes and conclude that adoption is influenced by the hype around -and resistance to- blockchain technology; by top management support, by (perceptions of) the regulatory environment; as well as by trust between blockchain partners, which is both an antecedent as well as a consequence of blockchain adoption.

Finally, the third paper, "The Intelligible Contract",, written by Luca Cervone, Monica Palmirani and Fabio Vitali, introduces a novel model of legal digital

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contracts automatically executable on blockchain technologies. The paper examines the gap between traditional contracts and digital contracts towards the goal of making them intelligible and legal valid, introducing a new generic specification for legal digital contracts, namely the Intelligible Contract. The use of this new category of smart contract can help to analyze lack o wiliness of parties, to analyze liability in case of torts, and to overcome current limitation derived by the immutability of blockchain.

These three papers contribute to the minitrack's goal by helping to build on our understanding of the foundations of blockchain technologies and its application to the public sector. Through the efforts to better understand the challenges of blockchain and the impact of this new technology, the papers of this minitrack contribute to improve analytical and practical developments and trends on the topic.