PhD Curricula - Blockchain and Distributed Ledger Technology

Curriculum 5: **Law and Governance**

The curriculum on Law and Governance aims to investigate the advanced research questions in three directions:

Theoretical aspects. The blockchain represent a new form of social organization, another type of power, distinct method of decision that indubitable would change the relationships between the institutions, authorities, citizens. That arises relevant questions concerning the legitimacy of the activities conducted in the blockchain, or the validity of the smart legal contracts applied especially in some sectors like the law-making process, justice decisions, and administration services. The autonomy of the decision-maker is fundamental for preserving the normativity of the legal rules and the self-execution of the smart contracts stress some theoretical aspects and pillars of our democracy. The control of the human being in any step of these technologies is another important topic of research investigation in order to avoid manipulation, surveillance, and black-box effect.

Regulation. This track aims to research how to regulate the introduction in the society of the blockchain, distributed ledger technology, smart contract, ICO, NFT and any other connected technologies. It is fundamental to define a stable regulation in its legal foundations (e.g., theory of law) and in the specific domains (e.g., FinTech, Bank, Civil law, Labor Law, Tax Law, etc.) for supporting the emerging market. Furthermore, an international law view is necessary (e.g., UNCITRAL, UNIDROIT, HCCH) for avoiding fragmentation. On the other hand, the European Blockchain Service Infrastructure could be an occasion for regulating at the European supra-national level some principles including the digital identity. The proposal of modifications of regulation eIDAS 910/2014 aims to introduce qualified certifications for the distributed electronic ledger and it is another important example of how the regulation is shaping the emerging sector of the intermediation and disintermediation introduced by the blockchain. Another important topic to investigate is how to protect personal data and how to apply the regulation of GDPR in this context. Finally, the responsibility and liability of the effects of the smart legal contracts is a key issue that needs groundbreaking specific interdisciplinary research. All these topics require an interdisciplinary approach.

Applications. This track aims to research how to apply the constellation of blockchain technologies to the legal domain (e.g., Parliaments, Justice, Administration, Legal Firm, Anti-Money-Laundering, Anti-corruptions, etc.) and to other domains with the goal to guarantee the compliance with the legal framework. All the applications must be law-by-design and it requires legal expertise combined with technological competencies for transforming advanced solutions into market products or services. Some solutions include also legal reasoning and legal argumentation for checking the compliance before the self-execution. Several principles would be included in the applications: transparency, accountability, respect for human rights, privacy, and liability. Human-centered design is fundamental and, in this perspective, also the human-computer interactions devoted to providing usability and explicability are a key goal of this track."

Keywords:

- Smart Legal Contract
- Intelligible Contract
- Self-Sovereign Identity
- Legal reasoning
- Regulation
- Blockchain forensic
- Anti-money laundering, anti-corruption
- Private standards
- Compliance
- Business models