

Executive Summary

A Regulatory Governance Framework for Blockchain



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Wider use of Blockchain technology in recent years has led to increased attention being paid to possible regulatory frameworks that could be applied to the field. Mapping options for a regulatory governance framework regarding Blockchain technology seems an important endeavor, since enhanced legal clarity could benefit potential future applications in e.g. smart contracts, identity management, open government systems. Regulatory efforts aim to create a balance by offering legal certainty for users and investors of this technology while not hindering innovation.

The present report surveys scholarly contributions that discuss specific challenges and opportunities regarding the regulation of Blockchain technology. A few highlights stand out:

- It is suggested that the interaction between Blockchain technology and law could be depicted as being potentially one of (1) hostile evasion, (2) efficient alignment and/or (2) uneasy coexistence (cf. Yeung 2019).
- Another strand of the literature identifies the self-regulation of Blockchain ecosystems as an effective solution, with few interventions required by regulatory authorities. The development of internal rules is portrayed as an evolutionary process akin to the dynamics of setting up constitutional rules (cf. Berg et al. 2020).
- A different strand of research tries to understand technological disruption from a macro-perspective as a disruptive process with long-term effects. The choice of regulatory design has important impact according to this view since it helps defining the innovation path of emerging technologies (cf. Perez 2010).
- Finally, another set of contributions question the viability of traditional regulatory options (top-down command-and-control regulation as well as self-regulation) for the Blockchain technology realm. From this perspective, a creative form of co-regulation would constitute the most promising option for regulating Blockchain technology, but only if a number of conditions are met such as guaranteeing specific control mechanisms (cf. Finck 2018).

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The formulation of a regulatory governance framework would benefit from information reflecting the practical realities of individuals utilizing Blockchain technology in their professional lives. In order to obtain such information on the experience of individuals who utilize Blockchain technology in their work environment, we conducted a survey study which received 58 responses. The survey generated interesting information regarding use patterns and experiences.

- Regarding the type of Blockchain used, where more than one option could be selected, 66.67% of the respondents reported to be active users of a public Blockchain platform, followed by 35.90% reporting using a *hybrid* Blockchain. The least used option was a private Blockchain, selected by 25.64% of respondents. Regarding ecosystem choice, the most popular indications were “ethereum” and “hyperledger”.
- It is important to note that 60% of the participants report that less than 1/4 of their work benefit from Blockchain technology. It is not possible to conclude whether this is due to legal uncertainty and legal risk associated with the Blockchain technology or whether it is due to the novelty of the field or applicability limits.
- The question concerning the functional purpose of Blockchain allowed the users to choose more than one option and the results show that the most popular uses of Blockchain technology was “data integrity” (data privacy, data security, etc.) and the two close follow-ups were the following use areas: “digital identity” and “public services” (such a document registries or voting).
- 75.86% of the respondents reported that they expect that their company’s spending on Blockchain technology will increase in the next financial year.
- It is observed that the respondents indicated their familiarity with GDPR as being significantly higher than with other selected sector relevant standards or regulations.
- Regarding the level satisfaction with the applicable legal framework to the respondent’s use of Blockchain technology, 20% responded “very dissatisfied” and another 15% responded “dissatisfied”. The justifications mentioned in the follow-up question cited as reasons that there is no clear regulatory framework, that GDPR or AML regulations are not clear when it comes to Blockchain technology. This finding points toward a demand for the legislator to provide better information on how existing regulation is applicable to the use of Blockchain technology.
- When asked about the preference for Blockchain regulation via broad standards versus precise rules, 80,95% indicated a preference for broad standards whereas 19,05% of respondents indicated a preference for specific rules.

In the areas of emerging technologies finding the optimal design and level of regulation is not an easy task, for a number of reasons including the following ones:

- The inherent ex ante unpredictability concerning the wider impacts of rolling out new technologies on a large scale.
- Limited information available to public authorities regarding the research frontier of emerging technologies.

These factors contribute to information asymmetries between regulatory authorities and the creators and users of nascent technologies.

The report discusses elements to be considered for designing regulation paying attention to achieving regulatory goals without sacrificing technological advancement, keeping in mind that regulators can be expected to possess incomplete information about the technology's research frontier.

➤ **Potential risks of over-regulating nascent technologies**

- Stifling nascent technologies with an overly stringent regulatory burden could impose costs on the national economy such as failing to attract venture capital and/or causing innovators to choose to (re-)settle under the roof of another jurisdiction.

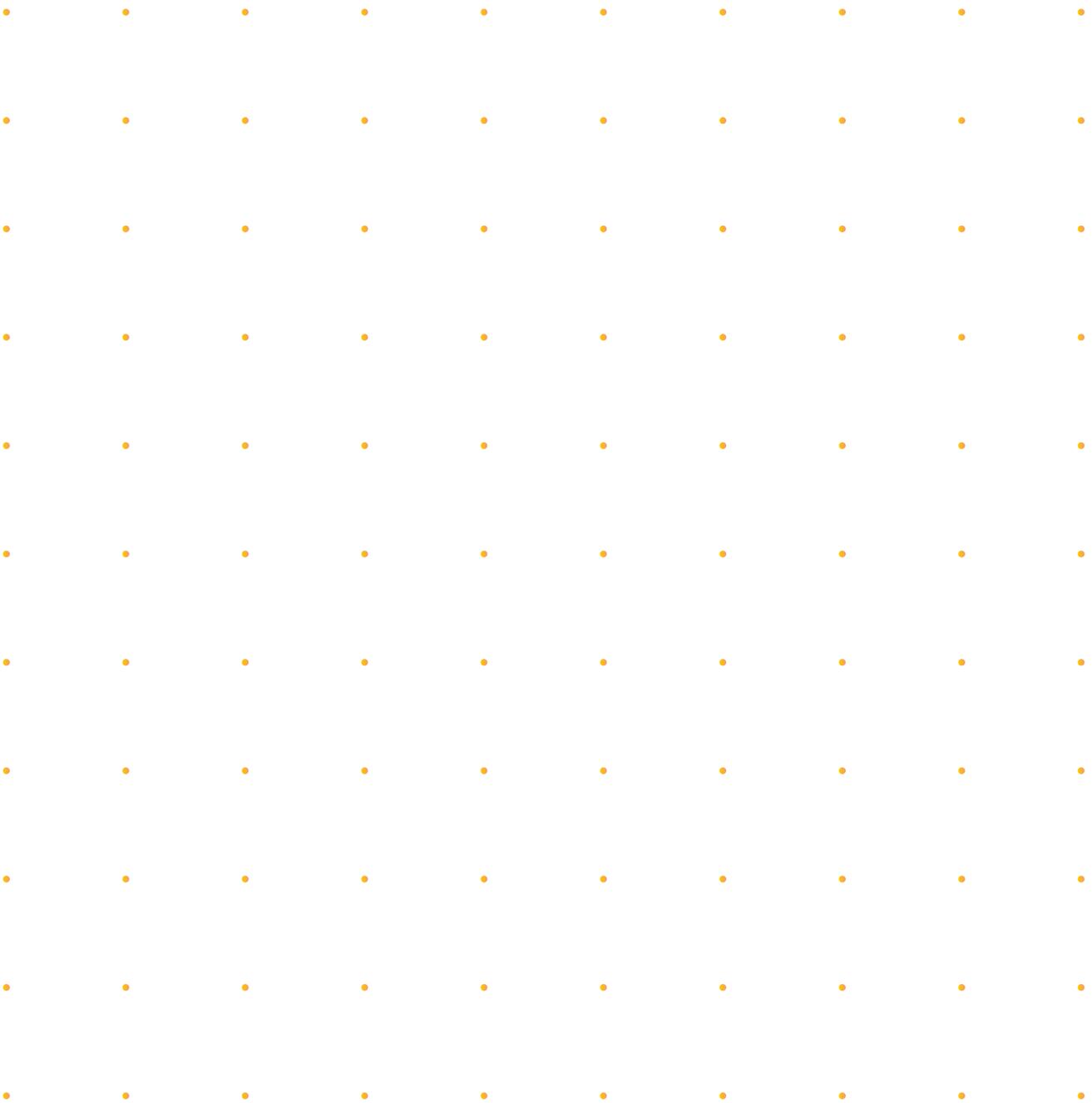
➤ **Potential risks of under-regulating nascent technologies**

- The lack of applicable regulation (not even via broad standards), or postponing any regulation for a long period, can also potentially harm efforts to innovate.
- A regulatory vacuum could lead market players to become hesitant to invest in developing new technologies due to a perceived environment of legal uncertainty. Broad standards defined early by regulatory authorities could facilitate decisions for market players by providing guidance regarding e.g. ethical limits defined in the public decision-making process.

➤ **Implications for regulatory design:**

- Regulators should take into account the risk of unrealized opportunities due to an overly stringent regulatory burden, which could take the form of very specific regulatory rules.
Overly specific rules can act as a constraint on entrepreneurs pursuing technological innovation and curb the IT sector's dynamism. Also, potential problems are difficult to anticipate in fields characterized by a rapid pace of innovation and where overall user behavior is difficult to predict. In such a setting it can be appropriate to regulate via standards, which are defined in broader terms. As new technologies evolve and their impact on society can be more precisely observed, standards can be, if a need is detected, complemented with more specific rules addressing issues of regulatory concern that emerged as the technology in question became more widely adopted. In the field of emerging technologies, the regulators often might not possess sufficient information to draft detailed regulatory rules *ex ante*.
- Broad standards reflecting overarching principles are more likely to find support in more than one country, opening up the possibility of internationally shared standards among a group of countries. This is the case because international agreement on a regulatory issue will rest on a minimum common denominator, by which is meant a core set of regulatory standards that finds support in all participating countries, whereas more precise rules are likely find resistance in at least some of the participating countries.
- Given that different sectors use the technology in different ways, sector-specific standards might be appropriate, however there is an ongoing debate on the desirability of differentiation according to sectors.
- Regulators could pay attention to beneficial effects stemming from "embedded regulation", e.g. governance structures integrated within a Blockchain. Opportunities arise for solving liability issues and decreasing the need for more direct regulatory intervention.

- It is reflected in the survey results that users are concerned that compliance requirements can conflict with business interests. In order to provide a governance system that allows innovation, embedded-regulation solutions should also be explored as an alternative to or as supportive of regulatory frameworks. Such “embedded regulation”-solutions could be discussed and agreed upon in the context of the co-regulation model that refers to multistakeholder involvement. These solutions also have the potential to resolve issues around applicable jurisdiction to a technology that transcends borders.
- As observed in the survey results as well as in the expert meeting, sometimes the legal uncertainty in public opinion is only a perception due to misunderstandings regarding the applicability of existing regulation. Therefore, there should be also efforts made to create user-oriented guidelines explaining which current legal frameworks are applicable (or might be applicable) to Blockchain platforms.



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