

## **AGENDA: ETHICAL CONSIDERATIONS – MICHELE NEITZ**

### **Why is Ethics Important to the Development of Blockchain Technology?**

We are living in a revolutionary age. The concept of decentralized and distributed ledgers operating on a global scale would be unimaginable to the average consumer only ten years ago. As a new tool, blockchain technology can be used for beneficial or malicious ends.[1] The success of Bitcoin and other blockchain projects must be weighed against numerous scandals related to violations of privacy and illegal uses of blockchain technology.[2]

How can we ensure that blockchain technology serves as a force for good in California?[3] How can we protect our most vulnerable citizens from unintended consequences related to this technology? With an ethical framework guiding collective decision-making, we can realize the benefits of this technology while avoiding unanticipated ethical pitfalls.

California legislators could create “binding legal requirements” to impose ethical regulations.[4] However, there are risks to imposing a set of ethical top-down rules on blockchain technologists in California. Designers and developers may choose to leave the state in order to avoid such rules. In addition, California should refrain from creating a “culture of compliance” rather than a “culture of genuine responsibility.” [5]

Accordingly, considering a set of ethical guiding principles, instead of hard and fast rules, is a more useful approach. It is appropriate for California legislators to ask blockchain users, developers, and designers to consider the impact of our actions on others beside ourselves: on our communities, vulnerable populations, and the environment.

### **Who is Responsible for Ethics in Blockchain Technology?**

Designers, consumers, legislators and law enforcement will eventually share responsibility. Designers should consider the ethical principles described below, while making any ethical concerns or issues accessible to everyday consumers. Consumers should not “stick their heads in the sand” and use technology mindlessly without consideration of the consequences.

Legislators bear the responsibility of ensuring this balance in a particular jurisdiction. For example, legislators can incentivize the ethical use of technology on the part of designers. Legislators can also lead the discussion around new technologies, identifying concerns early and fostering a culture of ethical innovation.

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Law enforcement serves as the backstop, as we have seen with the SEC's recent enforcement of securities laws against companies issuing digital asset tokens.[6] Law enforcement can act reactively, such as identifying violators of the law and imposing consequences. Law enforcement can also act proactively, by announcing increased enforcement of specific laws and thereby sending a message to other potential violators.

### **How Does the Development of Blockchain Technology Raise Ethical Concerns?**

Blockchain technology will touch various aspects of the everyday lives of Californians. Like other new technologies, it remains unclear what blockchain technology's positive and negative impacts will be. However, some ethical issues are already apparent.[7] Three specific ethics issues related to the social impact of blockchain are equity, accessibility, and sustainability.

#### **Equity**

More Californians will ultimately be users of this technology rather than designers or developers. It is therefore incumbent upon designers and developers to consider whether their designs are inclusive and further the goal of equity among all California residents.

There is already a debate underway about facilitating an easier user experience for blockchains, and companies are launching to work specifically toward that goal. However, for the purpose of California legislators, the goal of equity encompasses more than just a user experience.

For example, blockchain designers should ask: how does this technology affect low-income populations, such as the unbanked? Are disabled or senior Californians offered an equal chance to use this technology, particularly when it comes to civic rights such as voting? Does this technology bring rural and urban populations together, or is it primarily geared toward urban users? Does this technology protect the privacy of all Californians, even those who do not understand how to proactively assert their rights to privacy?

Blockchain technology should be designed to unite Californians. Identifying equity as a stated goal of blockchain legislation would be an important step toward cultivating an inclusive approach to this technology.

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### Accessibility

There are several angles to consider regarding blockchain technology's accessibility. First, who is developing this technology? Is this nascent industry balanced in terms of gender, racial, ethnic and sexual orientation diversity? If not, why not?

Much has been written about the need for a more diverse workforce in the tech industry. [8] Many of the same factors responsible for the imbalances in the general tech industry also apply to blockchain technology. However, one could argue that a few large companies do not yet dominate the field of blockchain technology, as is true for the traditional tech industry. In fact, at this time blockchain is a remarkably open field; an entrepreneur does not need a Ph.D. in Computer Science to start a blockchain company.

One way the legislature could maintain accessibility in this industry is through careful consideration of any certificate requirements. The legislature should balance the need to protect members of the public from potential malicious actors against the reality that certificate requirements favor the wealthy and educated. We should also consider the value of expediency in this field, since legislation should not slow down innovation.

A second angle related to accessibility involves the high learning curve required to understand this technology. Since blockchain has the potential to impact many different areas of the lives of Californians, we must ensure that the blockchain field is not reserved for those with high levels of technical expertise. How do we make sure people are properly informed about the technology as its implementation begins to affect important areas of their daily lives? It will be difficult to secure buy-in for the various blockchain areas identified in this Working Group's report, such as supply chains, voting, and health care, if the average Californian does not have a basic understanding of the technology itself.

For example, many of us do not understand the technology underlying our use of email. However, over the last two decades, email has become a trusted (if not totally secure) communication platform. This is due in large part to legislation designed to prevent rogue actors from using email to take advantage of the uninformed.[9]

In contrast, telling Californians "we have decided to move all of your tax records over to a distributed, immutable ledger" will engender fear in those who do not understand how such a ledger could be secure. Small businesses could be especially compromised. Consider the fisherman or farmer who learns that his or her commercial licenses may now be stored and processed on a blockchain—without some knowledge of what this means, any business person would justifiably resist such a change.

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In short, the legislature should consider how best to educate Californians about blockchain, to ensure at least a base-level understanding as the technology is rolled out to the public. Making blockchain an accessible technology is critical to ensuring that all Californians can benefit from this new industry.

### **Sustainability- Blockchain Use Cases**

**[NOTE: See Radhika’s paper for a discussion of sustainability issues related to actual technology underlying blockchain]**

Blockchain use cases have the potential to either further the goal of sustainability or diminish it (or both). On a supply chain, enterprise blockchains could enable ordinary consumers to identify the origins of any retail item. This would allow a purchaser in a California store to know where, when, and under what conditions a particular item was produced, promoting corporate social responsibility. [10]

[As described in the sustainability portion of the Working Group’s report,] enterprise blockchains could enable easy and fast identification of any problems along a supply chain. For example, a supply chain using blockchain could track vaccine shipments to determine location, freshness, and viability of each specific box of vaccines.[11] Blockchain technology can also track meat and produce to easily determine the source of those goods on a supply chain if a foodborne illness were to occur. [12] In this way, blockchain could protect public health and benefit the goal of sustainability more efficiently than current technologies.[13]

Blockchain legislation could encourage the goal of sustainability as use cases develop by offering incentives to blockchain companies. For example, tax incentives and penalties could serve as motivators to promote sustainability goals. California could also prioritize companies with sustainable practices in the awarding of government contracts related to blockchain technology.

### **Ethical Framework for the Adoption of Blockchain Technology**

The concept of ethics “requires us to consider the broader impacts of our activities.”[14] With the above ethical issues in mind, the following focus on goals, uses, and unintended effects[15] could serve as an ethical framework for California’s adoption of blockchain technology.

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When assessing the ethical impact of a blockchain technology, California should abide by the following principles:

### 1. **Goals of Ethical Blockchain Design**

- A. Seek societal benefit: maximize good and minimize bad
- B. Equity: does this benefit all Californians, or only a few?
- C. Expediency: how can we achieve ethical design and use cases without slowing innovation?

### 2. **Ethical Uses of Blockchain Technology**

- A. Accessibility: Design to include the most vulnerable user
- B. Responsibility: Anticipate and design for all possible uses
- C. Sustainability: Create technology to advance sustainability, public health, and corporate social responsibility

### 3. **Minimize the Unintended Effects of Blockchain Technology**

- A. Are there unintended biases or conflicts in the design or use of this technology?
- B. Are any populations being unintentionally harmed by the way this technology is developing?
- C. Does this technology promote violations of local, national, or international law?

## Conclusion:

California is the first state in the nation to consider ethical issues at this early state of blockchain technology regulation. Our state is acting in a proactive way to strike a balance between innovative technology and its potential effects. With an ethical framework in place as regulation moves forward, California will serve as a model for the development of ethical blockchain technology.

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[1] Michele Benedetto Neitz, [The Influencers: Facebook's Libra, Public Blockchains, and the Ethical Considerations of Centralization](#), 21 N.C.J.L & Tech 1 (2019).

[2] See, e.g., [Silk Road Seller Pleads Guilty to Money Laundering, Tracing Illegal Activity Through the Blockchain to Combat Cryptocurrency-Related Crimes](#).

[3] Beard, M. and Longstaff, S.A., [Ethical Principles for Technology](#), 9 The Ethics Centre, Sydney (2018).

[4] World Economic Forum White Paper, [AI Governance: A Holistic Approach to Implementing Ethics Into AI](#) 9 (2019).

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[5] Beard, M. and Longstaff, S.A., [\*Ethical Principles for Technology\*](#), 11 The Ethics Centre, Sydney (2018).

[6] See, e.g., [SEC Charges Issuer With Conducting \\$100 Million Unregistered ICO](#)

[7] The European Commission's Group on Ethics in Science and New Technologies created a list of ethical concerns, including some not discussed herein (such as human dignity, autonomy, and democracy). See World Economic Forum White Paper, [AI Governance: A Holistic Approach to Implementing Ethics Into AI](#) 11 (2019).

[8] Gregory Mone, [Bias in Technology](#) (discussing the lack of diversity in the tech workforce).

[9] Congress enacted the CAN-SPAM Act in 2003, a law that “sets the rules for commercial email, establishes requirements for commercial messages, gives recipients the right to have [commercial users] stop emailing them, and spells out tough penalties for violations.” Federal Trade Commission, [CAN-Spam Act: A Compliance Guide for Business](#).

[10] See Rick LeBlanc, [How Blockchain Will Transform Supply Chain Sustainability](#).

[11] Jordan Woods and Radhika Iyengar-Emens, [Enterprise Blockchain Has Arrived: Real Deployments. Real Value](#) (2019).

[12] *Id.*

[13] For further discussion, see George Nicholson, [Blockchain Will Reshape the Future of Sustainability](#).

[14] Beard, M. and Longstaff, S.A., [\*Ethical Principles for Technology\*](#) 35, The Ethics Centre, Sydney (2018).

[15] *Id. at 25.*