

**Written Testimony of Nilmini Rubin
Head of Global Policy, Hedera**

**Before the U.S House of Representatives Agriculture Committee
Subcommittee on Commodity Markets, Digital Assets, and Rural Development
“The Future of Digital Assets: Identifying the Regulatory Gaps in Spot Market
Regulation”**

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Thank you Chairman Johnson, Ranking Member Caraveo and Members of the Subcommittee on Commodity Markets, Digital Assets, and Rural Development for inviting me to testify today.

I am Nilmini Rubin, Head of Global Policy for the Hedera Governing Council, a decentralized, multi-stakeholder governing body that establishes policies for the open-source Hedera Network. Having spent about twelve years as a House Foreign Affairs Committee and Senate Foreign Relations Committee professional staff member, I am honored to testify before Congress.

The Hedera Governing Council is one of many organizations working on the Hedera network, a public blockchain launched in September of 2019, built on top of the open-source hashgraph technology. The Hedera Network is a fast and green public blockchain whose general purpose applications go well beyond financial services.

I speak today on behalf of only one part of the decentralized Hedera network ecosystem - Hedera Hashgraph, LLC, a U.S. company, whose members consist of twenty-eight leading global companies and universities that comprise the Hedera Governing Council: abrdrn, Avery Dennison, Boeing, Chainlink Labs, DBS Bank, Dell Technologies, Dentons, Deutsche Telekom, DLA Piper, EDF (Électricité de France), eftpos, FIS (WorldPay), Google, IBM, the Indian Institute of Technology (IIT), LG Electronics, The London School of Economics (LSE), Magalu, Nomura Holdings, ServiceNow, Shinhan Bank, Standard Bank Group, Swirlds, Tata Communications, Ubisoft, University College London (UCL), Wipro, and Zain Group. My remarks do not necessarily reflect the views of any particular Hedera member.

Why Public Blockchains Need Digital Assets

What we call “the internet” is essentially a decentralized set of computers talking to each other through open protocols on a public network. Each protocol was created by a multi-stakeholder governing body. Those protocols, like TCP/IP, DNS, HTTPS, etc.,

have never stopped evolving to enable additional features and capabilities that benefit society. Initially, internet protocols just enabled a handful of institutions to share information and send direct messages (the 'read-only' web or "web1"). Protocol innovations enabled people around the world to self-publish and securely message anyone (read and write web or "web 2") - unlocking the information revolution. Those web 2 protocol innovations enabled the secure sharing of images and videos; secure credit card transactions - unlocking e-commerce; and mobile apps connectivity - unlocking ubiquitous use of the internet anywhere.

Public blockchains are often referred to as "web3" because they deliver the next major protocol innovation. Public blockchains enable unprecedented personal control - the ability to read, write, AND own your data and assets - without dependency on centralized intermediaries. Unlike in web 2, where a user account only exists on a single company's servers, in web3 the entire blockchain network records account ownership. Individuals hold cryptographic keys that enable access to the account. This means that in web3 user accounts are persistent across an unlimited array of services that exist on top of blockchain networks, without requiring users to perpetually create new accounts and passwords.

These web3 protocols, and cryptographically provable individual ownership, allow major innovations including decentralized digital identity. Decentralized identity allows an individual to control what personal information is shared, and with whom it is shared, rather than relying upon an "identity provider" to manage this for them, often under a terms of service agreement the user doesn't fully understand. So, if I need to prove that I am over 21, I could use my digital ID and choose not to share additional information like my address which helps me protect my safety.

Fundamentally, there are two ways to run a blockchain: 1) private blockchains used for internal operations or with a consortium of partners; and 2) public blockchains that anyone can build applications on.

Public blockchains are operated by a network of independent computers, or "nodes." **Since public blockchain nodes act as the platform on which other applications are built, they cannot fund their operations by showing advertisements or selling subscriptions like web2 intermediaries. Instead, nodes must be compensated by users directly through fees, like water and electricity charges.** The node fees are typically tiny and frequent, with hundreds or thousands of messages or transactions processed per second. **It is not possible to use the existing financial system to send fractions of a penny so quickly, efficiently and globally.**

To solve this problem, public blockchains use a digital asset, or cryptocurrency, to transfer value directly between users and operators. The nodes process these transfers in seconds. As there is no intermediary, they go through an automated consensus-generating process to ensure all computers agree on the amount of cryptocurrency in each network account. **The cryptocurrency serves as the fuel on which the network runs.** For example, during the previous month, the Hedera Network processed over 600 transactions per second—in total over 1.5 billion transactions. Each transaction cost between a tenth (\$0.001) and hundredth (\$0.0001) of a penny, paid in the network’s native cryptocurrency called “hbar.”

Public Blockchains Advance the Economy and Humanity

The ability of blockchains to provide immutable, auditable, and order-based records, enables businesses and organizations to store, track and monitor data in new and powerful ways. Products running now on Hedera store, track, and monitor data to reduce waste, fraud, and abuse, and provide economic, social, and environmental benefits, for example:

- **Data storage and provenance - supporting human rights:** Starling Lab, co-founded by Stanford University’s School of Engineering and the University of Southern California’s Shoah Foundation, built a framework on Hedera and other blockchains to verify, and preserve the authenticity of photos and other evidence.
 - Starling Labs is preserving the USC Shoah Foundation’s Holocaust archive and testimonies from tampering, effectively storing, distributing, and verifying the testimonials through sophisticated automated tracking and tracing.¹
 - Starling Lab and Hala Systems submitted a digital evidence package to the Office of the Prosecutor of the International Criminal Court documenting possible war crimes in Kharkiv, Ukraine. The package was an unbroken chain of digital evidence establishing data provenance, proving it had not been tampered with from the field to the courtroom - a first for any court submission in the world.²
- **Value exchange - supporting rural development:** DOVU is a marketplace, built on Hedera, to inexpensively issue tokenized carbon credits in order to fund projects that remove, capture, or sequester carbon from the environment. This presents an opportunity for participating farmers to generate additional income by

¹ <https://www.ipost.com/diaspora/antisemitism/how-blockchain-can-preserve-holocaust-testimonies-from-manipulation-657308>

² <https://dornsife.usc.edu/cagr-news/news/2022/06/33571-starling-lab-and-hala-systems-file-cryptographic-submission-evidence-war-crimes>

unlocking carbon sequestered in soil; increase the amount of carbon sequestered, and selling the carbon to buyers looking for offsets. The entire audit trail technology is built on top of Hedera's Guardian open-source framework, and verifies the entire journey for any carbon project from onboarding to retirement, with simple visualizations and documentation.³

- **Transparent platforms - supporting the environment:** CYNK, Africa's first verified carbon emissions reduction platform, built a product on Hedera to track and trade emission reduction tokens generated by Tamuwa, Kenya's largest biomass company. CYNK provides an immutable audit trail for all of Tamuwa's carbon credits, bringing trust and transparency to the emissions reduction platform.⁴
- **Supply chain traceability - supporting waste reduction:** atma.io, built by Avery Dennison, utilizes Hedera and helps brands meet net-zero targets and reduce waste across the supply chain. As more than 28 billion items across apparel, retail, food and healthcare move through the supply chain, their movements are recorded as transactions, timestamped and stored on Hedera. This allows atma.io to provide a granular view of carbon emissions and enables targeted carbon reductions.⁵
- **Supply chain monitoring - supporting vaccine safety:** Everyware built a product on Hedera to monitor vaccine cold-chain storage and pick up on any irregularities before administering those vaccines to patients. Everyware's sensors monitor the temperature of refrigerators storing the temperature-sensitive vaccines in real-time, and transmit the data to its cloud platform, which is encrypted and then saved on to Hedera's blockchain network.⁶
- **Supply chain tracking - supporting pharmaceutical safety:** AVC Global and Medical Value Chain (MVC), built a product on Hedera and another blockchain to track all pharmaceuticals coming into the Kingdom of Bahrain. Their SmartPass technology cryptographically tracks the entire supply chain to allow users to authenticate pharmaceuticals and avoid dangerous counterfeits.⁷

³ <https://dovu.earth/en/news/>

⁴ <https://furtherafrica.com/2022/10/05/first-african-emissions-reduction-platform-to-begin-trading/>

⁵ <https://www.labelsandlabeling.com/news/sustainability/atmaio-utilize-hedera-network-co2-emissions>

⁶ <https://www.cnn.com/2021/01/19/uk-hospitals-use-blockchain-to-track-coronavirus-vaccine-temperature.html>

⁷ <https://www.unlock-bc.com/news/2021-05-25/bahrain-based-medical-value-chain-fully-integrated-with-blockchain-hedera-hashgraph/>

In addition, establishing strong digital asset policy frameworks and regulation advances American values. Before hosting the Summit for Democracy in March, the U.S. government issued a call to the private sector to address global democratic challenges. Hedera was proud to respond and committed to convening a roundtable on how blockchain technologies can support democracy. Hedera will invite companies, trade associations, advocacy groups, academics and government officials, publicly share a summary of the discussion, and make recommendations for next steps.⁸

Recommendations for Congress

The sale of digital assets to raise money for the creation of a network or application is fundamentally different from the use of digital assets as a fuel to pay for network activity costs or obtain access to other goods or services, and regulations should be tailored to address the unique characteristics of each. Participants in each transaction should be able to have a clear understanding of how the regulations apply and what their obligations are.

Built on the premise that digital asset regulation should protect consumers, enable innovation, and promote competition, **we recommend passage of legislation to create an activities-based framework that regulates the use of digital assets based on the nature of the transaction:**

- **First, Congress should provide a clear definition of and delineation between “Digital Commodity” and “Digital Security,” or when a digital asset is neither.** Currently, it is not clear whether the Commodity Futures Trading Commission (CFTC) or the Securities and Exchange Commission (SEC) is the primary regulator for any given digital asset or transaction.
- **Second, Congress should empower the CFTC to regulate certain Digital Commodity activities, such as operating a centralized spot marketplace.** Network and market infrastructure providers in the U.S. today do not have a complete roadmap toward compliance and appropriate regulatory oversight. For example, if trading platforms must register as a designated contract market (DCM) and intermediaries must register as a futures commission merchant (FCM), how can businesses be brought into the existing regulatory perimeter without friction or harm to purchasers and users? Clarity here will greatly improve consumer safety as adoption of these technologies and their benefits accelerate.

⁸ <https://www.state.gov/private-sector-commitments-to-advance-democracy/>

In the same way not all assets are securities, not all digital assets are securities. Not all digital assets are securities because not all digital assets have the same purpose, characteristics, and historical facts and circumstances. **Applying existing securities law to all cryptocurrencies severely limits - if not prohibits - the actual use of public blockchains.** For example, a supply chain application for the manufacturing process of a food item to ensure accurate tracking of expiration dates for consumer safety may require the use of an SEC-registered broker-dealer just to pay a one-cent transaction fee in cryptocurrency to log a supply chain event.

Legislative clarity for innovative products has been done before. The 2010 Dodd-Frank Wall Street Consumer Protection Act allocated rulemaking authority for swaps to more than one federal agency. In Title VII of the Dodd-Frank Act, Congress recognized that derivatives contracts differed meaningfully and allocated authority for swaps involving a commodity interest to the CFTC, while at the same time granting rulemaking and oversight of swaps involving an underlying security to the SEC. **Today, swaps market regulation is largely viewed as an example of successful allocation of regulatory authority between two agencies.** The same approach could be taken to digital assets.

Digital asset use is inherently international and it is important that any regulation takes that into account. The CFTC has an established process for permitted substituted compliance with non-U.S. regulatory regimes. Known as Comparability Determinations, the CFTC has the authority to determine that a foreign jurisdiction's regulatory requirements are comparable to the CFTC's requirements under U.S. law.⁹

To regulate fast-developing innovations like digital assets, the CFTC is a more appropriate regulator than the SEC because the CFTC adheres to the concept of "principles-based regulation" while the SEC follows a prescriptive rules based approach.

As former CFTC Chair Heath Tarbert noted, **"It is important to recognize that principles-based regulation is not a euphemism for 'deregulation' or a 'light-touch' approach—far from it. Principles-based regulation is a different way of achieving the same regulatory outcomes as rules-based regulation. But it simply does so in what is, in many cases, a more efficient and flexible manner."**¹⁰ The current regulatory environment in the U.S. provides no clear path to compliance, leaving

⁹ See Comparability Determination for Substituted Compliance Purposes at <https://www.cftc.gov/LawRegulation/DoddFrankAct/CDSCP/index.htm>

¹⁰ See Fintech Regulation Needs More Principles, Not More Rules at <https://fortune.com/2019/11/19/bitcoin-blockchain-fintech-regulation-cftc/>

two choices: 1) find that path overseas; or 2) continue hoping regulation will catch up before enforcement punishes another innovator for being a square peg they cannot fit into their round hole of prescriptive rules designed for very different activities, decades before these innovative activities were ever considered.

Conclusion

The internet is global but it was invented here in the U.S., allowing American values to underpin fundamental internet protocols. **Congress must define rules in the U.S. to allow public blockchains to thrive so that the next wave of internet value creation continues to echo the U.S.' commitment to markets and democracy.** Other countries and regions, including China, the European Union, Singapore, the United Arab Emirates and the United Kingdom, are swiftly moving forward with their own digital asset regulations. The resulting regulatory certainty may give companies currently based in those locations an advantage over U.S. companies; it may encourage companies to move to some of those locations; and it may present national security risks.

Thank you for your focus on digital assets and setting the rules that will enable American innovators to continue to play a leading role in crafting the future of the internet.