Crypto
Council for
Innovation

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and Digital Innovation Technology
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I. Introduction

Thank you, Chairman Rothfuss, Chairman Western, and members of the Select Committee, for the opportunity to testify today. I am grateful for the engagement and leadership already shown by so many on this committee and in Wyoming, and I look forward to sharing my thoughts on how Wyoming can continue to play a leadership role in digital asset regulation both here in the United States and around the world.

I am pleased today to represent the Crypto Council for Innovation – a global alliance of industry leaders across the digital assets and Web3 spaces. And we pride ourselves on using an evidence-based approach, work to educate on the advances of this technology, and believe that trusted partnership between government and business stakeholders is key to crafting regulation that benefits consumers, industry, and investors.

Over the past two decades, I have held roles as an attorney, entrepreneur, product builder, and NGO executive. Throughout my entire career, my focus has been clear and consistent: the intersection of technology, law, and civil liberties. I started off at a leading Wall Street law firm and built a successful B2B software-as-a-service product, before my journey ultimately led me to Web3 and crypto. In this space, I founded the digital assets team at the World Economic Forum and built the entire team at CCI from scratch. I have worked with the public, private, and nonprofit sectors, and for the last two decades have served in global leadership roles around technology. The products I have built and supported were specifically designed to empower entrepreneurs- I wanted to make sure they had the tools they needed to scale their businesses and succeed on their own terms, and I think blockchain technology is critical to that.

We at CCI continue to appreciate that state governments, especially Wyoming, are leading the charge on advancing thoughtful, responsible, and fit-for-purpose digital asset regulation. From the development of SPDIs (special purpose depository institutions) to establishing legal structures for DAOs (Decentralized Autonomous Organizations) – the opportunities here are catching on across the United States and abroad. For me, it's a delight to see Wyoming set the stage for these international conversations.

Before we talk about the opportunity ahead of us, I'd like to take a moment to set the scene on how we got here:

In my view, crypto and Web3 represent a once in a generation opportunity to re-think foundational systems. Our current financial system was developed and evolved in a paper-based economy. But, to state the obvious, the world is, has been, and continues to go digital, and at an ever-accelerating pace.

41 percent of Americans don't use cash for purchases in a typical week. About 7,500 bank branches in the US closed between 2017 and 2021. We have been using checks since the 1800s – but have only recently moved into the world of sending rent digitally, paying for coffee on tablets, and filing out our taxes online. It's time to focus on what's next.

Despite the stats I just laid out, the US is steadily falling behind and in my opinion failing Americans. We have been overdue for an update to our financial rails. 69% of Americans are dissatisfied with the current financial system, and people are rapidly turning to other options where they have the ability to do so.[1] Crypto can improve efficiency and reduce costs – meaning, better services, choices, and savings for the user.

I'm sometimes asked what the "breakout application" is for the Web3 ecosystem, and my response is that I think we need to think about breakout and scale and these words differently. Instead of building one thing to serve everyone – we've seen the problems with that approach – I believe we should be thinking about building multiple different instances of services that are designed by communities to meet their specific, and even sometimes temporary, needs. I call this concept microscale via micro-communities. I believe this concept and approach is rooted in the history of Wyoming, and it's where Wyoming can continue to lead.

II. Crypto's Role in the Digital Future

I want to spend some time talking about crypto's role in the digital future, and specifically on AI. Talking about AI, blockchain, crypto, data privacy, etc separately is like talking about lettuce, tomatoes, meat, and sesame seed buns individually. We need to also talk about the whole hamburger/tech stack. As you weigh different approaches to addressing the challenges and opportunities from this new innovation, Wyoming and all of you should consider the important role crypto will play in providing responsible oversight for a variety of AI applications.

To begin with, I applaud this committee's decision to continue investigating artificial intelligence governance best practices. The explosive growth of services like ChatGPT - which set records, reaching over 100 million active users in just two months after its launch - marks a new era of consumer-facing AI tools and applications and we all know we are living it right now.

A. Improving Efficiency through Decentralized Computation

AI is possible only due to a combination of resource-intensive hardware and proprietary software. On the hardware side, Nvidia (with over $1 trillion USD value in market cap) accounts for more than 70 percent of A.I. chip sales, and holds an even bigger position in training generative A.I. model. The remainder of the 30 percent is made up mostly of Big Tech - Amazon, Microsoft, IBM, and Intel. The extensive hardware computational, data, and capital resources needed to operate models makes the lack of

[1] https://policy.paradigm.xyz/writing/March-2024-Polling

accessible graphics processing units (GPUs) a strong risk factor for the current demand for AI applications, and in fact the demand is outgrowing and outpacing the supply. On the software side, even OpenAI, despite its name, uses a closed model for ChatGPT — so full control and ownership of the model and even how the data it collects is trained is proprietary.

Decentralized computation at the heart of crypto is already helping to address structural issues stemming from AI's demand on resources and technology, including by facilitating secondary markets. This approach allows owners of excess computing capability to sublease their capacity in real time to AI training models.[2]

Web3 companies such as Gensyn AI and The Render Network are working to solve the challenges facing AI development today by offering blockchain-based marketplace protocols that connect developers with solvers. By tapping into the long tail of idle, machine-learning-capable compute around the world — including in places like Wyoming - and places with smaller data centers, personal gaming computers, M1 and M2 Macs, and eventually even smartphones — Gensyn estimates it can multiply the available compute power 10-100x for machine learning. So instead of a monopoly, you're actually going to move meaningfully towards a free and fair marketplace for competition.

B. Advancing Transparency Responsibly

In addition to helping solve the resource problem, crypto's most talked about contribution to AI governance will undoubtedly be its ability to improve transparency and resist censorship. As AI models become increasingly integrated into our daily lives, there's a growing concern about the overdependence on existing centralized systems and issues surrounding closed-source models.

Efforts are already underway to remedy. In one example, FICO – the industry standard score for lending and credit decisions – has patented a blockchain that tracks and audits their AI driven scoring models, documenting model decision-making at each step on blockchains to create permanent records of model development. As AI and machine learning models advance cumulatively, with conclusions that models reach informing future decision-making, such interventions are critical to ensuring that those building and stewarding such models can track their progress to ensure they are advancing in an ethical and compliant manner. With FICO scores informing 90% of all credit decisions in the US, developing new means of tracking AI decision-making and model learning over time is critical to ensuring that unintended consequences do not creep into decisions that could impact access to financial tools and services, including those in rural areas.

In light of the dominance of AI-powered applications, it's becoming increasingly important to question the validity and biases of closed-source AI models and whether an output is really generated from a particular model or training set. The crypto industry is well positioned to play a pivotal role in putting checks and balances on AI by leveraging novel cryptography like zero-knowledge proofs (ZKPs) to verify the legitimacy of machine learning algorithms. A ZKP is an advanced mathematical verification process that bolsters privacy, security, and efficiency. It allows one to confirm the validity of a data set, without revealing all the details of the data to the party seeking the confirmation. For example, you could use a ZKP solution to confirm that someone's driver's license shows they are over 21 without them having to

[2] https://www.galaxy.com/insights/research/understanding-intersection-crypto-ai/

also hand over other personal or sensitive information, like their precise birth date and home address. For AI, you could use a ZKP to confirm that machine learning computations made by external parties meet certain requirements in order to ensure the computation models are not deceptive or malicious. Although ZKPs have existed since the 1980s as an academic research area in computer science, the crypto asset industry has expanded their real-world use in recent years by applying them to transaction privacy.

A blockchain's open source protocol design also lends itself well to building solutions to decentralize the model verification process. For example, EQTY Lab is pioneering AI that allows users to view and track a model's data sources, architecture, computation, and governance in real time. They partnered with Accenture to test similar tools for deployment at scale to Accenture's hundreds of corporate clients. As a proof of concept, EQTY labs built and trained its own large language model to demonstrate its software's ability to track provenance at each step of model development. Approaches like these will be especially critical as policymakers consider how best to combat the ongoing rise in artificial media.

In the context of AI safety and content generation, AI is not only transforming content creation across society, politics, and the economy but also leading to an influx of AI-generated materials, including sophisticated fabrications like deep fakes. Blockchain technology steps in to provide transparency and traceability for online content through digital signatures and public, verifiable timestamping of data. There are a number of blockchain-based solutions that aim to tackle the content authenticity problem by leveraging low-cost digital provenance infrastructure and decentralized storage that blockchains uniquely provide.

C. Democratizing AI Governance

Additionally on the topic of content moderation: there's a growing consensus on the need to decentralize generative AI. This ensures that no single entity monopolizes control and fosters an approach to AI governance that is more inline with American values. The current landscape of AI is plagued by centralization, which poses significant challenges to transparency and trustworthiness. AI, by its very nature, tends to centralize due to the advantageous scale effects it derives from centralized data centers. Moreover, data, the lifeblood of AI, is often controlled by a select few tech conglomerates. Similarly, the pool of machine learning talent is concentrated in the hands of a small number of individuals, which gives them outsized power. And I should note, not all of these actors are in the United States.

To address these issues and foster a more transparent and trustworthy AI ecosystem, decentralization is key. Decentralized technologies like Zero-Knowledge Machine Learning (known as ZKML) offer promising solutions. Building upon the progress made in Zero-Knowledge, Zero-Knowledge Machine Learning (ZKML) presents a novel approach to addressing the challenges associated with data application and model integrity rather than having a human determine what is appropriate content to be seen online - wouldn't it be better to verify the source of the content, so we know its not a foreign bot or intelligence agent.

As you work to identify the State's role in developing artificial intelligence policies, I encourage you to be mindful of crypto's unique ability to facilitate open-sourcing. Maintaining Americans' data privacy will be essential as you consider best practices for mitigating impacts that will flow from automated decision making models.

D. Decentralized Physical Infrastructure Networks (DePIN)

According to the Federal Communications Commission, 22.3 percent of Americans in rural areas and 27.7 percent of Americans in Tribal lands lack coverage from broadband, as compared to only 1.5 percent of Americans in urban areas. The service providers responsible can struggle to implement this infrastructure in less densely populated regions, due to high costs, complexity of terrain, and a lack of market opportunities to recoup investments. On the consumer side, high service fees and lacking last mile connections to the home can act as barriers.

New decentralized physical infrastructure networks, known as "DePIN," are providing opportunities to deploy and manage more flexible networks of internet nodes that can provide critical digital connectivity in rural areas. DePIN systems leverage blockchain networks to distribute the costs and benefits of implementing and operating infrastructure networks across a wider group of actors in the physical world. Decentralized network providers provide hardware nodes or routers that create mesh networks; operating on blockchains, operators and contributors to the network and can receive automatic compensation, while information on demand and use can also feed back into the network to help set pricing. These systems can enable communities to self-support the setup and management of infrastructure networks, such as broadband or electrical power rather than having to wait for centralized entities to deploy them, or they can be deployed by local businesses and governments to more efficiently support remote activities.

One such example of such a network provider is Althea systems, which is deployed in 4 countries and services thousands of homes. The organization's protocol allows anyone to participate in the Althea decentralized connectivity network by installing equipment and accessing services or receiving compensation for providing them. Althea reduces the cost of connectivity by enabling price-aware nodes to switch between connectivity providers, locating the best combination of bandwidth to cost; reducing overhead expenses such as advertising and marketing; and replacing contract and billing costs with direct peer-to-peer micropayment compensation.

E. Digital Identity - Implications for Data Privacy & Ownership

I also commend the select committee's efforts to continue exploring the latest developments on data privacy and digital identity.

To be truly impactful, AI models will require vast sets of data to train them – data that will need to be acquired legitimately, fairly, and that does not violate intellectual property or privacy. One area in which the stakes are particularly high is healthcare: we stand to see significant advancements in medical research powered by AI modeling, but patient data is highly sensitive.

Here is an example: Patientory facilitates ownership of health data for patients and access to health data for researchers and enterprise organizations through a single blockchain-enabled platform. Patients store all of their health data in a secure "digital wallet," and can opt in to sharing that data in medical trials while retaining ownership and rights over their private healthcare data. Such digital wallets allow users to share only necessary information, while retaining their privacy and receiving automatic compensation for each use – empowering users to monetize their data while providing healthcare innovators with the data they need to advance life saving research. As of Fall 2023, Patientory has connected and aggregated data

from over 24,000 health systems to their network. An approach like this could help to inform efforts to improve data collection, access, and security policies.

III. The Need for Regulatory Clarity

States will continue to play a critical role when it comes to the development of digital asset innovation in the U.S. As you are well aware, there is currently no comprehensive federal regulatory framework of digital assets. Unfortunately in the absence of such a framework at the federal level, we are seeing federal regulatory agencies engaging in a strategy of regulation by enforcement. This approach fails to protect investors, because it takes place after the fact- after a harm has happened. Blanket enforcement also harms innovation, because it does not allow for a thoughtful, compliant way for companies to bring to market the innovative products and services that are clearly in demand. The lack of clear, consistent, and transparent regulation continues to bring significant uncertainty to all stakeholders across the ecosystem. It is for this reason that we are especially grateful for the tireless advocacy of champions in the federal government (like Senator Lummis) who have been working to thwart the efforts of the administration to offshore this critical industry.

With this backdrop in particular, there is even more of an opportunity for leadership from states like Wyoming.

State governments have been leading the charge to preserve marketplace stability and protect consumers since 2013. State-based regulatory frameworks, in our view, can serve as efficient and effective regulatory models for the digital asset industry.

With the adoption of the SPDI Act (Special Purpose Depository Institutions Act), Wyoming has led on this front - paving the way to allowing authorized institutions to hold digital assets alongside fiat currencies and offer a range of banking services. DARA (the Digital Asset Registration Act), DUNA (the Uniform Decentralized Unincorporated Nonprofit Associations Act), and the Stable Token Act - to name a few - are also providing important and innovative legal frameworks that will enable Web3 companies to grow here in the state and around the country.

As the industry has continued to grow and evolve, we have encountered some challenges that can help inform the development of Wyoming's digital asset regulatory regime. It's important for state regimes to continue to lead in fostering product development that serves consumer needs and promotes safety and security in the marketplace.

State-based frameworks should take a deliberate and thoughtful approach to definitions and categorization. Given the diversity in the space, definitions matter. Whether and how a service can operate is determined by its categorization. As such, getting this right at the outset is of critical importance. This includes capturing the diversity of decisions around economic incentives, governance, and technology. Legislators and regulators must work to clearly define terms to accurately capture the intended scope of regulation without overly broad interpretations that could inadvertently encompass non-financial activities or technologies. Seeking to pigeonhole legacy definitions to certain Web3 activities can risk stymieing their transformative potential and harming users.

Reducing barriers to entry for smaller digital asset businesses and startups is also critical to allowing the industry to grow and ensuring American citizens can benefit from this generational innovation. Legislators should look to reinvigorating Wyoming's regulatory sandbox program in this regard. These programs can help regulators keep pace, gain market knowledge, and leverage the best tools to ensure efficient and effective oversight.

Setting clear expectations and timelines early on for how and when state regulators will supervise and examine digital asset businesses, including guidelines for operational compliance, financial health, and consumer protection can assist compliance and facilitate examinations. To ensure a consistent consumer protection standard, Wyoming should seek to coordinate with other like-minded states to combat cases of fraud and market manipulation.

We also encourage legislators and regulators to be proactive in assessing resource considerations. Digital assets and blockchain technology are underpinned by fundamentally new operational, technical, and business models. Regulators must be equipped with sufficient staffing as well as appropriate technology, education, and training opportunities suited to conduct adequate industry oversight.

Since 1977, when Wyoming originated the first regulatory regime for LLCs, the **Cowboy State** has shown a strong commitment to advancing private sector ingenuity. I especially commend Wyoming's blazing the trail on different approaches, structures, and form factors that facilitate decentralized models. As an aside, I am always so pleased to be reminded that Wyoming was the first US territory to grant women the right to vote! More recently, Wyoming's Special Purpose Depository Institution (SPDI) model will help to remove middlemen and reduce settlement frictions that have plagued traditional financial services processes. Ensuring their interoperability across the United States will be critical. Establishing a suitable entity structure for DAOs by passing DUNA (the Uniform Decentralized Unincorporated Nonprofit Associations Act) will also undoubtedly address significant challenges for the digital asset sector.

Wyoming should consider the opportunity for other states to align their own regulatory regimes with similar requirements and standards in order to reduce the compliance burden on entrepreneurs and businesses operating in multiple jurisdictions. This can include, for example, coordination of regulated entity exams with other state regulators, similar to the way state money transmitter license frameworks coordinate with one another for examination purposes. In addition, enabling reciprocity for Special Purpose Depository Institutions (SPDI) with other states' models would avoid redundancy and facilitate a streamlined set of standards and requirements for regulators and industry alike. Wyoming has a profound opportunity to continue leading on state level digital asset regulatory best practices, especially by working to prevent a fifty state patchwork for the Web3 industry.

IV. Conclusion

Just as Wyoming has been the frontier for American exploration and entrepreneurship for generations – I am confident it will remain so as we enter the digital future. The Crypto Council looks forward to working with you to advance these important issues. Thank you for the opportunity to testify before your committee this morning. I am happy to answer any questions you may have.