Mark Tague is a fourth-generation rancher whose family has stewarded the same land in Oklahoma for over a century. The heart of their operation lies on land originally deeded to his Chickasaw great-grandmother, and the ranch is proudly recognized by the State of Oklahoma as a Centennial Ranch—honoring over 100 years of continuous family ownership.

He is the Co-Founder and Chief Revenue Officer of CattleProof Verified, a USDA-approved Process Verified Program provider. CattleProof leverages blockchain technology to digitize livestock and related assets, delivering greater transparency, traceability, and efficiency to the agricultural commodity system.

Mark brings 31 years of professional experience, including 15 years in the technology sector as a banker, fintech executive, and strategic advisor. He currently works with a range of agtech and fintech companies, offering guidance on innovation, product strategy, and market development at the intersection of agriculture and emerging technology.

Truth in Testimony Disclosure Form

In accordance with Rule XI, clause 2(g)(5)* of the *Rules of the House of Representatives*, witnesses are asked to disclose the following information. Please complete this form electronically by filling in the provided blanks.

Committee: Agriculture

Subcommittee: Commodity Markets, Digital Assets, and Rural Development

Hearing Date: 04/09/2025

Hearing Title :

"American Innovation and the Future of Digital Assets: On-Chain Tools for an Off-Chain World"

Witness Name: Mark Tague

Position/Title: Co-Founder and Chief Revenue Officer

Witness Type: ○ Governmental ◉ Non-governmental

Are you representing yourself or an organization? ○ Self ◉ Organization

If you are representing an organization, please list what entity or entities you are representing:

CattleProof Verified

FOR WITNESSES APPEARING IN A NON-GOVERNMENTAL CAPACITY

Please complete the following fields. If necessary, attach additional sheet(s) to provide more information.

Are you a fiduciary—including, but not limited to, a director, officer, advisor, or resident agent—of any organization or entity that has an interest in the subject matter of the hearing? If so, please list the name of the organization(s) or entities.

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Please list any federal grants or contracts (including subgrants or subcontracts) related to the hearing's subject matter that you or the organization(s) you represent have received in the past thirty-six months from the date of the hearing. Include the source and amount of each grant or contract.

N/A

Please list any contracts, grants, or payments originating with a foreign government and related to the hearing's subject that you or the organization(s) you represent have received in the past thirty-six months from the date of the hearing. Include the amount and country of origin of each contract or payment.

N/A

Please complete the following fields. If necessary, attach additional sheet(s) to provide more information.

☑ I have attached a written statement of proposed testimony.

☑ I have attached my curriculum vitae or biography.

* Rule XI, clause 2(g)(5), of the U.S. House of Representatives provides:

(5)(A) Each committee shall, to the greatest extent practicable, require witnesses who appear before it to submit in advance written statements of proposed testimony and to limit their initial presentations to the committee to brief summaries thereof.

(B) In the case of a witness appearing in a non-governmental capacity, a written statement of proposed testimony shall include—(i) a curriculum vitae; (ii) a disclosure of any Federal grants or contracts, or contracts, grants, or payments originating with a foreign government, received during the past 36 months by the witness or by an entity represented by the witness and related to the subject matter of the hearing; and (iii) a disclosure of whether the witness is a fiduciary (including, but not limited to, a director, officer, advisor, or resident agent) of any organization or entity that has an interest in the subject matter of the hearing.

(C) The disclosure referred to in subdivision (B)(ii) shall include— (i) the amount and source of each Federal grant (or subgrant thereof) or contract (or subcontract thereof) related to the subject matter of the hearing; and (ii) the amount and country of origin of any payment or contract related to the subject matter of the hearing originating with a foreign government.

(D) Such statements, with appropriate redactions to protect the privacy or security of the witness, shall be made publicly available in electronic form 24 hours before the witness appears to the extent practicable, but not later than one day after the witness appears.

Testimony of CattleProof Verified Inc.

to the House Agriculture Subcommittee on

Commodity Markets, Digital Assets, and Rural Development

on April 9, 2025, at 2:00pm

I. **Executive Summary**

The traditional cattle transaction system, largely unchanged for the past 150 years, faces significant challenges today that hinder efficiency, transparency, and trust within the industry. Ranchers contend with a lack of comprehensive data regarding their livestock, leading to difficulties in verifying quality and origin. Slow payment processes can create cash flow issues and uncertainty for producers. Furthermore, the industry grapples with persistent problems such as fraud, impacting both buyers and sellers. These archaic processes contribute to inefficiencies and prevent ranchers from fully realizing the full value of their cattle. The absence of an easily accessible reliable record-keeping system impedes traceability and the ability to provide consumers with verifiable information about the beef they purchase.

Blockchain technology offers a transformative solution to the long-standing issues plaguing the cattle industry. At its core, blockchain is a secure, immutable, and distributed ledger that records transactions and data across a network of computers. This decentralized nature enhances transparency and makes it extremely difficult to tamper with recorded information. In the context of cattle transactions, blockchain enables the creation of unique digital identities for individual animals, allowing for the recording and tracking of crucial data points such as origin, health records, and ownership throughout their lifespan. This comprehensive data trail can follow the animal through the entire supply chain, from ranch to consumer, providing an unprecedented level of transparency and accountability. The ability to tokenize these digital animal identities and their associated data also paves the way for more efficient and secure online marketplaces for buying and selling cattle.

The adoption of blockchain technology presents numerous benefits for ranchers of all sizes. Enhanced transparency and verifiable data can enable ranchers participating in USDA Process Verified programs to receive premium prices for their certified cattle. Blockchain facilitates faster settlement of transactions, improving cash flow and reducing financial uncertainty. The digitization of animal records streamlines

administrative processes, reducing paperwork and improving overall efficiency on the ranch. For smaller ranchers, blockchain can provide access to broader markets and potentially level the playing field by offering a secure and verifiable way to showcase the quality of their cattle, regardless of scale. The increased trust fostered by blockchain could also lead to stronger relationships with buyers and greater access to capital through more transparent and secure transaction histories. By addressing inefficiencies and providing a platform for verifiable quality, blockchain empowers ranchers to focus on their core business of raising cattle while capturing more of the value they create.

For the American beef-buying population, blockchain technology in the cattle industry translates to safer and more trustworthy food products. The enhanced traceability provided by blockchain allows consumers to gain insights into the origin and history of the beef they purchase, fostering greater confidence in its quality and safety. This transparency addresses the growing consumer demand for more information about their food sources and production practices. In the event of foodborne illness outbreaks, blockchain can facilitate faster and more precise recalls, minimizing harm to public health. The ability to verify claims related to animal welfare and sustainable farming practices through blockchain can also empower consumers to make more informed purchasing decisions that align with their values. Ultimately, blockchain contributes to a more reliable and accountable beef supply chain, ensuring that American consumers have access to high-quality, safe, and transparently sourced beef.

In sum, the integration of blockchain technology into the cattle industry holds significant and mutual advantages for both producers and consumers. By addressing the long-standing challenges of inefficient and opaque traditional transaction methods, blockchain offers a pathway towards a more transparent, efficient, and trustworthy beef supply chain. Ranchers, regardless of their size, stand to benefit from premium pricing, faster payments, reduced administrative burdens, and potentially broader market access. Simultaneously, the American beef-buying population will gain greater confidence in the safety and origin of their food through enhanced traceability and verifiable information. The adoption of blockchain represents a crucial step in modernizing the cattle industry, bridging the gap between innovative technology and the practical needs of ranching, ultimately fostering a more sustainable and resilient future for beef production and consumption in the United States and globally.

II. **Introduction: The Current State of Cattle Transactions**

A. Historical overview of cattle transactions and their lack of significant change.

For over 150 years, the way cattle have been bought and sold has remained fundamentally unchanged. This lack of significant evolution in cattle transactions stands in stark contrast to advancements seen across numerous other industries. The core processes involved in transferring ownership, providing assurances of quality and origin, and facilitating payment have largely persisted without the benefits of modern technology.

Some of the very issues that plagued cattle transactions a century and a half ago continue to be prevalent today. Fraud, for instance, remains a significant concern within the industry. The absence of readily available, reliable data and transparent processes creates opportunities for misrepresentation and disputes regarding the characteristics and history of individual animals.

Furthermore, traditional cattle transactions suffer from inefficiencies that hinder ranchers and other stakeholders in the supply chain. Slow payments are a common frustration, creating cash flow challenges for producers. The lack of verifiable data on individual animals, including their health records, breeding history, and other relevant information, limits the ability of buyers to make informed decisions and for sellers to capture the full value of their high-quality cattle.

While demand for cattle remains strong, ranchers are increasingly challenged by issues of efficiency. The antiquated nature of transaction processes contributes to these challenges, acting as a bottleneck that prevents the industry from fully capitalizing on its potential. The need for technological solutions to bridge this gap and bring cattle transactions into the 21st century has become increasingly apparent. The introduction of blockchain and peer-to-peer transaction platforms will address these long-standing problems by providing solutions for verification, secure data storage and sharing, and streamlined transactions, which were simply not available in the historical context of cattle commerce.

B. Problems with current cattle transactions.

1. *Lack of data and traceability.*

Current cattle transactions are hampered by a significant lack of readily available and reliable data. This absence of information makes it difficult to track individual animals and their history throughout the supply chain. Ranchers lack the tools to easily record and share crucial details about their cattle, such as health records and breeding history. This limits transparency and makes it challenging for buyers to make informed decisions about the animals they are purchasing. The inability to trace an animal's history also impacts food safety and compliance efforts. Without a system for individual animal identification and data sharing, the industry operates with a significant information deficit, hindering efficiency and trust.

2. *Rigid and limited distribution channels.*

The traditional methods of buying and selling cattle often involve rigid and limited distribution channels that have not evolved significantly in over a century. The current environment lacks diverse and accessible avenues for ranchers to connect with potential buyers. The fact that technology is needed to "bridge the gap" indicates that the existing channels may not be efficient in reaching a wider range of buyers or in adapting to modern market demands. This limitation can prevent ranchers from accessing optimal prices and can slow down the overall movement of cattle through the supply chain.

3. *Slow payment processes.*

Slow payment processes represent a persistent problem in traditional cattle transactions. This inefficiency creates cash flow challenges for ranchers and can impact their ability to reinvest in their operations. By bringing transactions onto a blockchain, the aim is to achieve faster settlement. The current reliance on outdated methods means that ranchers often have to wait for extended periods to receive payment after a sale, creating unnecessary financial strain. Modernizing these processes is crucial for improving the financial well-being of producers and streamlining the overall transaction cycle.

4. *Lack of reliable proof of ownership and history.*

A significant challenge in current cattle transactions is the lack of reliable proof of ownership and the difficulty in tracing an animal's history. Current methods of tracking ownership and history are inadequate and potentially unreliable. The blockchain's

immutable and transparent nature offers a solution by providing a secure and verifiable record of an animal's journey and ownership changes throughout its life. Restoring trust in the provenance of cattle requires a more robust and tamper-proof system for documenting ownership and historical data.

5. *Susceptibility to fraud.*

The cattle transaction industry remains frustratingly susceptible to fraud. The lack of transparent data and verifiable records creates opportunities for fraudulent activities. Current, largely unchanged transaction methods lack the necessary safeguards to effectively prevent fraud. Implementing technologies that provide immutable records and verifiable information is crucial for mitigating the risk of misrepresentation and ensuring fair dealings within the cattle market.

6. *Inefficiencies impacting rancher profitability.*

Ranchers today are facing challenges not primarily due to a lack of demand, but because of inefficiencies in the transaction processes. These inefficiencies negatively impact their profitability and make it harder for them to "keep ranching". Antiquated transaction methods contribute to these inefficiencies, preventing ranchers from fully capturing the value of their cattle and adding unnecessary costs or delays to the process.

C. The need for modernization and technological solutions in the cattle industry.

The cattle industry stands at a critical juncture, facing the imperative of modernization to overcome long-standing inefficiencies and embrace the potential of technological solutions. For over a century and a half, the fundamental processes of cattle transactions have remained largely unchanged, creating a growing disconnect with the advancements seen in other sectors. This lack of evolution has left the industry grappling with problems that not only hinder productivity but also limit the profitability and sustainability of ranching operations. The time has come for technology to bridge this gap and bring cattle commerce into the 21st century.

III. **CattleProof: A Blockchain Solution Purpose-Built for the Cattle Industry**

A. CattleProof’s mission to digitize cattle transactions.

CattleProof's central mission is to digitize cattle transactions, bringing a centuries-old industry into the 21st century by leveraging cutting-edge technology to solve its

fundamental problems. We are overhauling outdated processes that are hindering efficiency, transparency, and profitability within the cattle industry. Our core objective is to unlock value by addressing the critical shortcomings of the current system and empowering ranchers to thrive in a modern marketplace.

The foundation of CattleProof's mission lies in the digitization of agricultural assets through a blockchain-based platform. This involves creating individual animal IDs that are securely stored and shared on a blockchain. This unique identification forms the basis for recording and tracking comprehensive animal data throughout the supply chain. By moving away from traditional, often paper-based or fragmented record-keeping, we eliminate the problem of "no data" that plagues the industry. This digital record-keeping enables traceability, allowing for a clear understanding of an animal's history, health, and origin.

Furthermore, CattleProof seeks to revolutionize the transactional aspect of the cattle industry. Our platform facilitates buying and selling animals directly on the blockchain, with the animal's data seamlessly following it through each transaction in the supply chain. This approach directly addresses the issue of slow payments by promising faster settlement through the efficiency of blockchain technology. By streamlining the payment process, CattleProof improves cash flow for ranchers and reduce the financial burdens associated with traditional transaction delays.

A key component of CattleProof's mission is to enhance trust and security within the industry. The current system suffers from a lack of reliable proof of ownership and history, contributing to the persistent problem of fraud. By utilizing a secure blockchain to store individual animal IDs and transaction records, CattleProof provides restored trust and a verifiable history for each animal. This immutability and transparency inherent in blockchain technology offer a significant advantage over traditional methods, creating a more secure and reliable environment for all stakeholders.

Ultimately, our mission is driven by an understanding that ranchers aren’t struggling for demand—they’re struggling with efficiency. Our platform is designed to bridge the gap between the cattle industry and modern technology, providing tools that enhance operational efficiency and future-proof compliance. In essence, CattleProof's mission is to empower ranchers to keep ranching by providing them with the technological solutions needed to operate more efficiently, securely, and profitably in the 21st century.

B. Key features of the CattleProof platform:

1. *Verification: USDA Process Verified Program Service Provider.*

A core feature of the CattleProof platform is its role as a USDA Process Verified Program Service Provider. We offer a trusted and recognized mechanism for verifying cattle, a process that can yield significant benefits for ranchers. Ranchers who utilize USDA Process Verified programs can receive up to a 150% premium on their cattle, highlighting the economic advantage of this verification. By offering this service, CattleProof directly addresses the industry's need for proof and enables ranchers to differentiate their high-quality livestock in the marketplace. This feature contributes to restored trust within cattle transactions by providing buyers with assurance regarding the origin and quality of the animals. CattleProof's verification service leverages established USDA standards, integrating them into a modern digital platform to enhance transparency and value for producers of certified cattle. This ensures that data regarding the cattle's adherence to specific USDA process-verified attributes is securely recorded and readily accessible to authorized parties throughout the supply chain.

2. *Blockchain Technology: Individual animal IDs creation, secure storage, and sharing on a blockchain.*

The CattleProof platform is built upon blockchain technology, a foundational element that underpins its ability to digitize and track cattle. This technology enables the creation of individual animal IDs, which are securely stored on a distributed and immutable ledger. Each animal’s unique ID serves as the anchor for a comprehensive record of its life and transactions. The blockchain's inherent security ensures the integrity and tamper-proof nature of this data, addressing the problem of no data and the risk of fraud prevalent in traditional systems. Furthermore, the blockchain facilitates the secure sharing of this animal data with relevant stakeholders across the supply chain. This enhanced data transparency and traceability are crucial for building trust, improving supply chain efficiency, and potentially future-proofing compliance requirements. By leveraging blockchain, CattleProof provides a robust and transparent infrastructure for managing and exchanging critical information about individual cattle.

3. *Tokenization: Digitizing physical assets and providing 24/7/365 transactability*

CattleProof embraces the concept of tokenization by digitizing physical assets – the cattle themselves – through the creation of individual animal IDs on the blockchain. This digital representation transforms cattle into assets that can be transacted more

efficiently. The use of blockchain technology paves the way for 24/7/365 transactability, moving beyond the limitations of traditional auction schedules and physical marketplaces. Ranchers gain the flexibility to buy and sell their cattle at any time, potentially expanding their market reach and accelerating transaction cycles. This continuous availability for transactions contributes to bringing cattle transactions into the 21st century, offering a significant improvement over the historically slow and restricted nature of cattle commerce. Tokenization on the blockchain allows for a more dynamic and accessible market where physical cattle are represented by secure digital records, enabling continuous trading opportunities.

4. *Marketplace: Platform for buying and selling and financing cattle on the blockchain.*

CattleProof provides a dedicated marketplace built on the blockchain, specifically designed for buying and selling animals. This platform aims to create more marketplaces for ranchers, expanding their access to a wider network of potential buyers and sellers beyond geographical limitations. By digitizing the transaction process, CattleProof streamlines the exchange of ownership and facilitates faster settlement, addressing key inefficiencies in the traditional cattle market. This blockchain-based marketplace fosters a more transparent and efficient environment for cattle commerce, allowing ranchers to directly participate in a modern, digital ecosystem and potentially access new avenues for capital and market opportunities.

C. Data tracking real-time throughout the supply chain.

Real-time data tracking throughout the supply chain is a crucial element in modernizing the cattle industry, and it forms a cornerstone of CattleProof's mission to digitize cattle transactions and unlock value. The current state of cattle transactions suffers from a significant lack of readily available and reliable data, hindering efficiency and contributing to problems like fraud and the inability to capture the full potential value of cattle. CattleProof's platform directly addresses this by implementing a system for individual animal IDs created and securely stored on a blockchain. This foundational step enables the continuous and real-time tracking of vital information as an animal moves through each stage of the supply chain, from ranch to consumer.

The creation of a unique digital identity for each animal allows for the recording of a comprehensive dataset, including origin, health records, vaccination history, feeding information, and ownership transfers. Because this data is immutably recorded on the blockchain, it provides an auditable and trustworthy history for each animal. This real-time tracking offers stakeholders an unprecedented level of visibility into the supply

chain. Ranchers can monitor the health and well-being of their animals more effectively. Feedlots can optimize feeding practices based on the documented history. Processors can access critical information relevant to food safety and quality. And ultimately, consumers can have greater confidence in the provenance of the beef they purchase.

Furthermore, our role as a USDA Process Verified Program Service Provider enhances the value of this real-time data tracking. By integrating USDA verification processes into the platform, CattleProof ensures that data related to specific quality attributes is captured and linked to the animal's digital ID. This verifiable data can then be shared in real-time with buyers, allowing ranchers to demonstrate the value of their USDA Process Verified Cattle. The ability to access this verified information instantly streamlines transactions and builds trust between buyers and sellers.

The benefits of real-time data tracking extend beyond individual animal management and transactions. At a broader level, it enhances the overall efficiency of the cattle supply chain. Knowing the precise location and status of animals in real-time can optimize logistics, reduce transportation delays, and minimize waste. This improved efficiency directly addresses the fact that ranchers aren’t struggling for demand—they’re struggling with efficiency.

By providing the technological tools for real-time data management, CattleProof aims to bridge the gap and empower ranchers to operate more effectively and profitably. The transparency afforded by this system also contributes to a more secure marketplace, mitigating the risks associated with inaccurate or fraudulent information. CattleProof's commitment to real-time data tracking throughout the supply chain represents a significant step towards a more efficient, transparent, and trustworthy cattle industry.

D. How CattleProof aims to bring cattle transactions into the 21st century.

CattleProof directly addresses the long-standing inefficiencies of the cattle transaction process. The platform aims to revolutionize this sector by bringing cattle transactions into the 21st century through the strategic integration of cutting-edge technologies and a focus on data, trust, and efficiency. Traditionally plagued by no data, slow payments, and no proof, the cattle market is ripe for modernization, and CattleProof offers a comprehensive solution to these archaic problems.

At its core, CattleProof utilizes blockchain technology to create a secure and transparent environment for cattle transactions. This involves the creation of individual animal IDs that are stored on an immutable ledger, ensuring the integrity and traceability of each animal's history. This digital foundation moves the industry away

from reliance on outdated paper-based records, providing a single source of truth for critical animal data. This lays the groundwork for greater trust and efficiency throughout the supply chain.

Furthermore, CattleProof acts as a USDA Process Verified Program Service Provider, integrating a trusted verification mechanism directly into the platform. By providing this verification service, CattleProof injects much-needed proof into the transaction process, fostering greater confidence among buyers and contributing to restored trust in the market.

The concept of tokenization is central to CattleProof's modernization efforts. By digitizing physical assets – the cattle – through their unique blockchain IDs, the platform enables 24/7/365 transactability. This eliminates the constraints of traditional auction schedules and physical marketplaces, offering ranchers greater flexibility and access to a wider pool of buyers. This continuous availability for transactions represents a significant leap forward from the historically slow and geographically limited nature of cattle commerce.

CattleProof aims to create more marketplaces for ranchers, expanding their reach and streamlining the transaction process. The use of blockchain technology facilitates faster settlement of payments, addressing another critical pain point in the traditional system. By addressing fundamental issues like lack of data, slow payments, and the risk of fraud, and by leveraging modern technologies like blockchain, verification services, tokenization, and a dedicated marketplace, CattleProof is poised to bring cattle transactions into the 21st century.

IV. **Benefits for Ranchers of All Sizes**

CattleProof offers a suite of benefits designed to modernize ranching operations and enhance profitability for producers of all sizes. By digitizing cattle transactions and unlocking value, the platform addresses critical pain points that have persisted in the industry for over a century. Ranchers stand to gain significantly through enhanced efficiency and reduced costs. The implementation of a blockchain-based system with individual animal IDs facilitates streamlined data management and record-keeping, moving away from cumbersome traditional methods. This digital approach has the potential for a reduced administrative burden associated with tracking animal history, health records, and ownership transfers, freeing up ranchers to focus on core ranching activities. Furthermore, the faster settlement of transactions facilitated by the blockchain marketplace can improve cash flow and reduce the financial uncertainties associated with traditional payment systems.

Increased trust and transparency are central to the CattleProof value proposition. By creating immutable and verifiable records on the blockchain, the platform contributes to restored trust within the cattle market. Buyers can have greater confidence in the provenance and quality of the cattle they are purchasing, leading to more secure and reliable transactions. CattleProof provides ranchers with access to premium markets and increased profitability. As a USDA Process Verified Program Service Provider, the platform enables ranchers to easily participate in value-added programs and receive up to 150% premium on USDA Process Verified Cattle. The easier verification for premium certifications through blockchain records streamlines the audit process and reduces the complexities associated with proving specific animal attributes. Additionally, the CattleProof marketplace provides access to more marketplaces beyond traditional auction houses, potentially widening the pool of buyers and creating more competitive pricing.

Finally, CattleProof facilitates improved data management and decision-making. The platform's focus on individual animal data tracking allows ranchers to compile comprehensive records on health, breeding, and other vital metrics. This detailed information has the potential for better insights into herd management and performance, enabling data-driven decisions that can optimize ranching practices and improve overall productivity. Moreover, the readily available and verifiable data on the blockchain contributes to future-proofed compliance by simplifying the process of meeting regulatory requirements related to animal health, traceability, and other industry standards.

CattleProof is designed to offer significant advantages to both small and large ranching operations, addressing the unique challenges and opportunities associated with different scales of production. Small ranchers can gain access to wider markets and potentially higher prices through verification and the marketplace. Traditionally, smaller ranches might be limited by geographical constraints and access to a smaller pool of buyers. CattleProof’s digital marketplace breaks down these barriers, allowing small producers to showcase their cattle to a national or even international audience. The ability to obtain USDA Process Verification and have those credentials immutably recorded on the blockchain provides small ranchers with a credible and cost-effective way to differentiate their cattle and tap into premium markets. This levels the playing field, allowing smaller operations to compete more effectively on quality and verified attributes, potentially leading to increased profitability and sustainability.

Furthermore, the streamlined data management offered by CattleProof can be particularly beneficial for small ranchers who may have limited administrative resources.

The platform simplifies record-keeping, freeing up valuable time that can be better spent on animal husbandry and other core activities. The increased transparency and trust facilitated by the blockchain can also help small ranchers build stronger relationships with buyers, as their animal data is readily available and verifiable.

Large ranchers, on the other hand, can realize significant benefits from the increased efficiency, streamlined data management, and enhanced traceability at scale offered by CattleProof. Managing large herds involves complex logistical challenges and extensive data tracking. The platform's ability to assign individual digital IDs and track animal movements and health records in real-time provides a powerful tool for optimizing operations across a large number of animals. This can lead to reduced labor costs associated with manual record-keeping and improved decision-making regarding herd health, feeding strategies, and market timing.

The enhanced traceability provided by CattleProof is also crucial for large-scale operations in ensuring food safety and meeting consumer demands for transparency. The immutable record of each animal's journey through the supply chain provides a high level of accountability and facilitates quick response in the event of any issues. Moreover, large ranchers can leverage the USDA Process Verification capabilities at scale, efficiently documenting and verifying the attributes of a significant number of cattle to access premium markets and maximize returns. The platform's ability to integrate with existing ranch management systems (although not explicitly detailed, this would be a logical feature for scalability) would further enhance its value for large operations, making it a powerful tool for modernizing and optimizing large-scale cattle production.

V. **Benefits for the American Beef-Buying Population**

A. Increased Food Safety

CattleProof's implementation of blockchain technology enhances the traceability of cattle through the entire supply chain. The creation of individual animal IDs stored on a secure and immutable ledger allows for a comprehensive record of each animal's journey, from birth to processing. This enhanced traceability offers significant benefits for food safety. In the event of a foodborne illness outbreak, the ability to quickly and accurately trace the affected product back to its origin is crucial. CattleProof's system provides a robust mechanism for tracking animal health and origins, potentially reducing the risk and spread of foodborne illnesses. This detailed tracking can help identify the

source of contamination more efficiently, allowing for quicker and more targeted recalls, thereby minimizing the impact on public health.

Furthermore, the platform's integration with USDA Process Verified Programs adds another layer of assurance for consumers. This verification process involves adherence to specific standards and practices, and CattleProof's blockchain provides a transparent and auditable record of this verification. This can increase consumer confidence in the safety of beef products, as they have greater certainty that the cattle were raised and handled according to verified protocols. The immutable nature of the blockchain ensures that these records cannot be tampered with, providing a higher level of trust compared to traditional, potentially less secure record-keeping methods.

By digitizing animal data, including health records, CattleProof can also contribute to proactive food safety measures. Ranchers and other stakeholders in the supply chain can have better access to information about animal health, potentially identifying and addressing health issues earlier, before they can impact the food supply. This proactive approach, facilitated by improved data management, can further bolster the safety of beef products for consumers. Ultimately, CattleProof's focus on traceability and verified data through blockchain technology aims to provide American consumers with safer and more trustworthy beef options, leading to increased confidence in the food they purchase.

B. Greater Transparency and Information

CattleProof holds the potential to bring greater transparency and information to the often complex and opaque beef supply chain. The use of blockchain technology allows consumers to access information about the origin and history of the beef they purchase, going beyond basic labeling requirements. For example, consumers might one day be able to scan a QR code on a beef product to view verified claims about the animal's origin, how it was raised, and any relevant certifications.

Blockchain's immutability plays a crucial role in helping to expand and maintain heightened trust in the beef supply chain. The inability to alter records once they are on the blockchain provides a high degree of confidence in the accuracy and integrity of the information. This is particularly important in an industry where consumers may have concerns about the authenticity of claims and the potential for misinformation. By providing a tamper-proof record of key information, CattleProof can empower consumers to make more informed purchasing decisions based on verified data.

This increased transparency can also extend to practices related to animal welfare and sustainability, as verified claims related to these aspects can be securely recorded on the blockchain. Consumers who prioritize these values can then seek out and support beef products with verifiable proof of adherence to such practices. Our underlying technology could be adapted in the future to accommodate other types of verified claims, further enhancing transparency for consumers. By providing a more transparent and informative beef supply chain, CattleProof can empower American consumers and foster greater trust in the products they buy.

C. Support for Ranchers and Sustainable Practices

By facilitating premium pricing for USDA Process Verified Cattle, CattleProof can create a market-driven incentive for ranchers to adopt sustainable and higher-quality practices. Ranchers who choose to participate in these verified programs and meet the required standards can earn up a premium for their cattle. This economic advantage encourages more ranchers to invest in practices that go above and beyond standard production methods, potentially leading to improvements in animal welfare, environmental stewardship, and the overall quality of beef.

American consumers can indirectly support ranchers who prioritize quality and verification by purchasing beef that originates from cattle tracked and verified through the CattleProof platform. As more ranchers adopt verified practices to access premium markets, the availability of beef produced under these standards is likely to increase, providing consumers with more options that align with their values. This creates a positive feedback loop where consumer demand for higher-quality and sustainably produced beef drives greater adoption of such practices within the ranching community.

While CattleProof's primary focus is on improving the efficiency and transparency of cattle transactions, its ability to facilitate value-added programs has a direct impact on supporting ranchers who are committed to quality and potentially sustainable practices. By enabling these ranchers to capture the economic benefits of their efforts, the platform contributes to a more resilient and potentially more sustainable beef industry. Consumers who value these attributes in their food choices can feel confident that by supporting beef from verified sources, they are also supporting the ranchers who are investing in these practices. Ultimately, CattleProof's mechanism for premium pricing based on verification can help align consumer preferences with ranching practices that prioritize quality and sustainability.

VI. **Blockchain as a Key Technology Solution in Agriculture**

A. Existing Barriers for Ranchers

The adoption of new technologies, including blockchain, in the agricultural sector, particularly for ranchers, faces several existing barriers. The challenges faced by rural communities in accessing resources and technical assistance are well known. These challenges directly translate to potential hurdles in technology adoption for ranchers. The lack of human and financial capacity in many rural areas can impede the understanding, implementation, and maintenance of complex systems like blockchain. Furthermore, the digital divide in rural America, where internet access and digital literacy may be limited, presents a significant obstacle to the widespread use of blockchain-based platforms. Without reliable connectivity and the necessary skills, ranchers may find it difficult to engage with and benefit from such technologies.

The cost of implementing and maintaining blockchain solutions can also be a significant barrier for ranchers, especially smaller operations. The initial investment in hardware, software, and training to participate in new technology may be prohibitive for some. Simply applying existing regulations to new technologies can be inadequate and inappropriate. Current financial support mechanisms or regulatory frameworks may not adequately address the specific costs associated with blockchain adoption in agriculture. Overcoming these barriers often requires targeted support, including financial assistance, technical training tailored to the agricultural context, and infrastructure development to improve rural connectivity.

B. Data Privacy and Security Concerns on the Blockchain

While blockchain is often lauded for its security features, data privacy and security concerns within the agricultural context warrant careful consideration. The immutable nature of blockchain, a key feature for traceability and trust, also means that once data is recorded, it cannot be easily altered or removed. This raises questions about the types of data being stored on agricultural blockchains and who has access to it. For instance, individual animal IDs and their associated data could contain sensitive information about a rancher's operations, animal health, and business practices. Concerns may arise regarding the potential for unauthorized access or misuse of this data, even if the blockchain itself is secure against tampering.

Blockchain has great potential to provide secure and transparent data management. In the agricultural sector, ranchers need assurance that their data is protected and that they have control over who can view and utilize it. This necessitates careful design of

blockchain-based systems with robust access controls and potentially privacy-enhancing techniques. In agricultural blockchain, clarity is needed regarding data ownership, privacy regulations, and the responsibilities of different stakeholders in managing data on the ledger. Addressing these concerns through transparent data governance frameworks and the implementation of appropriate security measures is crucial for fostering trust and encouraging adoption of blockchain in agriculture.

C. Interoperability with Existing Ranching and Supply Chain Systems

For blockchain to be effectively integrated into the agricultural sector, it must be interoperable with the diverse array of existing ranching and supply chain systems. Ranchers and other stakeholders currently utilize various software, databases, and record-keeping methods. The ability of a new blockchain-based platform to seamlessly interact and exchange data with these legacy systems is critical for minimizing disruption and maximizing efficiency. Without interoperability, ranchers may face the burden of maintaining parallel systems or manually transferring data, which can negate the benefits of blockchain technology.

Web3 aims for decentralized networks offering increased security, privacy, and transparency. In this context, interoperability becomes even more crucial to avoid the creation of new data silos within the decentralized landscape. As this Subcommittee explores the regulatory gaps in digital assets, you should also consider the technical requirements for interoperability in agricultural applications of blockchain to ensure that these solutions can integrate smoothly into existing workflows and infrastructure.

D. Scalability of the Blockchain Solution

The scalability of blockchain solutions is a critical factor for their successful implementation across the vast and varied agricultural sector. Agriculture involves a massive volume of transactions and data points, from individual animal tracking to supply chain logistics. A blockchain platform intended for widespread use must be capable of handling this scale efficiently without compromising speed, cost-effectiveness, or security.

The technical infrastructure required for handling large volumes of transactions in the agricultural sector is necessarily substantial. The chosen consensus mechanism, network architecture, and data storage solutions will significantly impact the scalability of the blockchain. Ensuring that agricultural blockchain platforms can accommodate the demands of the industry, including peak seasons and the increasing use of IoT devices for data collection, is essential for their long-term viability and impact.

E. Regulatory Landscape for Blockchain in Agriculture

The regulatory landscape for blockchain in agriculture is currently evolving and often mirrors the broader uncertainty surrounding digital assets. There is still a significant debate regarding the classification of digital assets as securities or commodities, and a lack of comprehensive federal regulation for the spot market. This regulatory ambiguity extends to the application of blockchain technology in agriculture, particularly when involving digital tokens or cryptocurrencies related to agricultural products or processes.

For agricultural blockchain platforms that facilitate the trading of digital representations of agricultural commodities or involve financial transactions, clarity on whether these activities fall under the jurisdiction of the CFTC or the SEC is crucial. As Congress considers legislation in this area, understanding the specific needs and potential of blockchain in agriculture is essential to create a regulatory environment that fosters innovation while ensuring consumer protection and market integrity.

VII. **Conclusion: The Future of Cattle Transactions with Blockchain**

A. Benefits for Ranchers and the American Beef-Buying Population

The integration of blockchain technology into cattle transactions holds significant promise for both ranchers and the American beef-buying population. For ranchers, blockchain offers the potential to address long-standing inefficiencies in the industry. The current system is characterized by a lack of data, slow payments, and insufficient proof of origin and quality, issues that have persisted for 150 years. Blockchain aims to rectify these problems by providing individual animal IDs stored on a secure, shareable ledger, enabling verification and traceability throughout the supply chain. This enhanced transparency can lead to restored trust among stakeholders. Economic incentives, coupled with faster settlement of transactions facilitated by blockchain, directly benefit ranchers' bottom lines and efficiency. Improving access to capital and fostering rural economic development is crucial. Blockchain can contribute to this by creating more transparent and potentially more accessible marketplaces for cattle transactions.

For the American beef-buying population, blockchain offers the prospect of safer food through enhanced traceability. The ability to track an animal's history and data from birth to processing can provide consumers with greater confidence in the origin and quality of the beef they purchase. This aligns with the growing consumer demand for transparency and information about their food sources. The digitizing of physical assets ultimately aims to bring cattle transactions into the 21st century, benefiting all

participants in the supply chain, from the rancher to the consumer. By addressing issues like fraud and enabling future-proofed compliance, blockchain contributes to a more reliable and trustworthy beef market, ultimately serving the interests and well-being of the American public.

B. The Transformative Potential of Blockchain Technology in the Cattle Industry

Blockchain technology possesses transformative potential for the cattle industry by revolutionizing how transactions are conducted, data is managed, and value is unlocked. The traditional cattle transaction process suffers from inefficiencies and a lack of transparency. Blockchain offers a paradigm shift by providing a secure, immutable, and distributed ledger for recording critical information about individual animals. This includes not only their origin and ownership but also health records, feeding practices, and other relevant data points that can follow them through the supply chain. This individualized data tracking contrasts sharply with the current aggregated and often opaque systems.

The ability to tokenize individual animals and their associated data, as envisioned by CattleProof, opens up new possibilities for creating more efficient and transparent marketplaces. Buying and selling cattle on a blockchain platform can streamline the process, potentially reducing transaction times and costs. Moreover, the enhanced traceability enabled by blockchain can improve supply chain management, reduce the risk of disease outbreaks, and provide consumers with verifiable information about the beef they are purchasing. Blockchain technology offers increased security, privacy, and transparency, solving many issues of the Web 2.0 era. Applying these principles to the cattle industry can foster greater trust and efficiency across the entire value chain, ultimately leading to a more resilient and sustainable beef production system. The transformative potential lies in its ability to digitize a traditionally physical asset and unlock its inherent data value.

C. CattleProof's Role in Bridging the Gap Between Innovative Technology and Ranching Efficiency

CattleProof is positioned to play a crucial role in bridging the gap between innovative blockchain technology and the need for enhanced efficiency in the ranching sector. Our core offering centers around digitizing cattle transactions and leveraging blockchain to unlock value for ranchers. By providing a USDA Process Verified Program Service Provider for verification, CattleProof directly addresses the opportunity for ranchers to earn premium prices for their certified cattle. The creation of individual animal IDs on a

secure blockchain is fundamental to their approach, enabling the collection, storage, and sharing of vital animal data. This data can then follow the animal throughout the supply chain, providing transparency and traceability.

CattleProof's focus on verification, blockchain integration, and facilitating transactions on the blockchain directly tackles the problems of no data, slow payments, and a lack of proof that plague the traditional system. Our business model, centered on digitizing physical assets, aligns with the broader trend of bringing traditional industries into the digital age. By offering a platform that caters specifically to the needs of ranchers, CattleProof can help overcome the barriers to technology adoption discussed earlier, such as the lack of technical expertise and the perceived cost of implementation. Ultimately, we empower ranchers to keep ranching by providing them with tools to improve their efficiency, access new markets, and capture greater value for their product.

D. The Importance of Supporting Innovation in Agriculture in the US and Globally

Supporting innovation in agriculture, including the adoption of technologies like blockchain, is of paramount importance for the US and global food security and economic prosperity. Ranchers are struggling with efficiency, not demand. Technology offers a crucial pathway to bridge this gap and ensure the sustainability of agricultural production. Supporting agricultural innovation, such as blockchain-based solutions, aligns with this goal by potentially creating new economic opportunities for ranchers and rural communities.

Furthermore, other jurisdictions are actively creating regulatory certainty for digital assets and blockchain technology. The US risks falling behind if it does not foster an environment that encourages and supports innovation in this space. The transformative potential of blockchain extends beyond cattle transactions to areas like supply chain traceability and sustainability. Supporting its adoption in agriculture can lead to more efficient resource management, reduced waste, and a more transparent and resilient food system. Without a sound regulatory framework tailored to the technology, the US may not see the full benefits and could lose its leadership position in blockchain development. Therefore, proactive support for agricultural innovation, including blockchain, is essential to maintain the competitiveness of the US agricultural sector and contribute to global food system resilience.

E. The Long-Term Impact of Blockchain on the Future of Beef Production and Consumption

In the long term, blockchain technology has the potential to fundamentally reshape the future of beef production and consumption. By providing a secure and transparent record of each animal's life and journey through the supply chain, blockchain can foster greater trust and accountability among all stakeholders, from ranchers to consumers. This enhanced transparency can lead to a more efficient and responsive supply chain, potentially reducing costs and improving the quality and safety of beef products. The ability for consumers to access detailed information about the origin and characteristics of their beef could also lead to more informed purchasing decisions and a closer connection between producers and consumers.

CattleProof's efforts to digitize cattle and leverage blockchain represent a significant step in this direction. As the technology matures and adoption broadens, we can envision a future where premium US beef, verified through blockchain, becomes the global standard, rewarding American ranchers for sustainable and high-quality practices. The interoperability of blockchain platforms with other agricultural supply chain systems will be crucial for realizing the full potential of this technology. While regulatory clarity for blockchain and digital assets is essential for fostering innovation and ensuring consumer protection, the long-term impact on the beef industry promises a more transparent, efficient, and trustworthy ecosystem that benefits both producers and consumers.

Ultimately, blockchain can contribute to a more sustainable and resilient future for beef production and consumption in the US and globally.