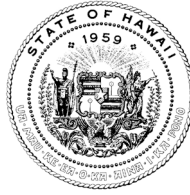


DAVID Y. IGE  
GOVERNOR



DOUGLAS MURDOCK  
CHIEF INFORMATION  
OFFICER

## OFFICE OF ENTERPRISE TECHNOLOGY SERVICES

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Testimony of  
DOUGLAS MURDOCK  
Chief Information Officer  
Enterprise Technology Services

Before the

HOUSE COMMITTEE ON CONSUMER PROTECTION & COMMERCE  
MONDAY, FEBRUARY 10, 2020

HOUSE BILL NO. 2594 HD1  
RELATING TO BLOCKCHAIN TECHNOLOGY

Dear Chair Takumi, Vice Chair Ichiyama, and members of the committee:

The Office of Enterprise Technology Services (ETS) supports the intent of HB2594 HD1.

ETS will assist the Blockchain Working Group to review the promise of blockchain technology and provide recommendations how individuals, businesses, and state agencies may apply and benefit from the evolving blockchain technology.

We respectfully request language be inserted for the chief information officer to allow for a designee:

(1) The chief information officer of the office of enterprise technology services, or designee, shall serve as chairperson.

Thank you for this opportunity to testify on this measure.



Written Statement of  
**Len Higashi**  
Acting Executive Director  
Hawaii Technology Development Corporation  
before the  
**House Committee On Consumer Protection & Commerce**  
Monday, February 10, 2020  
2:00 p.m.  
State Capitol, Conference Room 329

In consideration of  
**HB2594, HD1**  
**RELATING TO BLOCKCHAIN TECHNOLOGY.**

Chair Takumi, Vice Chair Ichiyama, and Members of the Committee.

The Hawaii Technology Development Corporation (HTDC) offers **comments** on HB2594, HD1 that requires ETS to establish a blockchain working group to determine a recommended definition for blockchain technology and recommendations for individuals, businesses, and state agencies to use blockchain technology and report to the legislature.

As part of HTDC's vision to create 80,000 new innovation jobs in Hawaii earning \$80,000 or more by 2030, HTDC supports initiatives aimed at accelerating the adoption of new technologies. HTDC is currently partnered with the DCCA on a pilot project for digital currency, based on blockchain technology. HTDC defers to the department on the measure and comments that we are supportive of serving on the blockchain technology working group.

Thank you for the opportunity to offer these comments.



**Testimony of  
Nathaniel Harmon on behalf of  
Blockchain Solutions Hawaii LLC**

**Before the House Committee on  
CONSUMER PROTECTION & COMMERCE**

**Tuesday, February 10, 2020  
2:00Pm  
State Capitol, Conference Room 329**

**In consideration of  
HOUSE BILL 2594  
RELATING TO BLOCKCHAIN TECHNOLOGY.**

House Bill 2594 seeks to establish a blockchain working group to determine a recommended definition for blockchain technology and recommendations for individuals, businesses, and state agencies to use blockchain technology and report to the legislature. **Blockchain Solutions Hawaii LLC strongly supports this measure.**

Blockchain Solutions Hawaii (BSH) is a small local business that focuses on education and proliferation of open-source technology related to Bitcoin and blockchain. Our experience in programming and understanding of the underlying protocol that underpins Bitcoin and other blockchains has led us to the conclusion that, this technology offers the same or greater efficiency gains to society as the internet. These efficiency gains stem from the unique security model originally implemented in the Bitcoin protocol.

The security model is called proof-of-work and represents a major technological breakthrough in computer science solving a century old problem. Simplified, the problem boils down to scarcity/uniqueness on the internet. Prior to Bitcoins invention if you were to put a file on the internet, that file could be copied and pasted creating two identical copies. The inability to have scarcity on the internet manifests today in wide spread identity theft, supply chain fraud, copy-write infringement, and large scale theft of personal information costing consumers and businesses \$billions. Traditionally, in order to mitigate the problems inherent to the current internet, we as a society outsource trust to a number of third party functionaries who act as gatekeepers, until they don't. The result of relying on these third party functionaries has been the proliferation of data mining. As we are all aware data mining has similar, if not worse, effects on society than the criminal data theft that it is meant to protect from in the first place.

In contrast to traditional systems of verification with a single third-party functionary being responsible, Bitcoin tasks all parties in the verification process i.e. unilateral verification or consensus. Bitcoins proof-of-work consensus model embodies the concept of "many hands make for light work" and by this redefines the standard for immutability, security, and decentralization at a fraction of the cost, zero-marginal cost. Bitcoins consensus extends to a set of standardized rules that must be followed in order to interact with the network. With any change to those rules requiring +95% of all participants to agree. These rules ensure that the network maintains neutrality and trust-less execution of small programs, know as transactions.

**LATE**

The first use case found for this new technology was in payments. Currently an electronic payment costs ~3% of the total value, for the merchant that 3% can represent +50% of their profit margin for the sale. Additionally, that 3% of every transaction is being syphoned out of the local economy to the mainland. But payments are not the only use for Bitcoin.

In BSH's daily activities we use a tiny fraction of a Bitcoin, not for its value but for its security properties. This brings the cost and manpower required for our activities down to a level to where we can offer a superior service on-island at a fraction of the cost to that of large scale traditional mainland businesses.

Bitcoin is not a panacea, as an individual can still be compromised. The difference is that the individual being "hacked" does not compromise anyone else nor the entire system, which is the case with the traditional system. Further, an individual can set up a system where Bitcoin theft requires a criminal physically steal the Bitcoin and coerce the victim into providing a password. Contrast this with custodial Bitcoin services, where users relinquish control of their Bitcoin to a third party, in a similar way to the traditional system. These services can and have been hacked with all clients losing everything instantly. Whereas physical theft from an individual is an insurable event, as it cannot be duplicated to millions with a single click, hacking a custodial service is not.

Another risk to consumers comes in the form alternative blockchains. Not all blockchains are created equal, none are as secure as Bitcoin and many are Ponzi schemes designed only to enrich the founder, something Bitcoin does not have. The phrase "blockchain not Bitcoin" often heard in the media results in public confusion. It conveys that because Bitcoin is secure and uses a blockchain, other blockchain projects must be secure as well.

A blockchain is not inherently secure. Just looking at the top 5 blockchain projects after Bitcoin, all have had and still have major technical flaws in their implementation that make them either insecure or outright scams. Understanding what the difference is between the different projects is crucial to crafting common sense legislation.

There are many applications that do not require the level of security that Bitcoin offers, but our personal data, identity, vote, healthcare records, and the foundation for which a less intrusive internet should be built on do. In order to start proliferating the benefits offered by Bitcoin to the general population, a set of standards and definition need to be established regarding Bitcoin and blockchains. Particularly with regards to custodial vs non-custodial services, as much of the security benefits of using Bitcoin are lost when using custodial services. Treating both the same presents a barrier to entry for local businesses that should be encouraged while artificially selecting for large mainland custodial firms that should be discouraged. Additionally, an official Bitcoin full node should be established and made public for all residents as a reference.

It is because of the above reasons that BSH supports the commission of a blockchain working group. BSH would also like to extend our expertise in this subject from the academic, technical, and small business perspective to the working group.

Mahalo  
Nathaniel Harmon, CTO and Founder  
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