Lori Jo Underhill

Independent Digital Economy Analyst
ljuassociates.com
lorijounderhill@gmail.com
1 480-797-3761

February 3, 2019

Division Head
Financial System Division
The Treasury
Langton Crescent
PARKES ACT 2600

Sent via Email:
ICO@treasury.gov.au

Dear Division Head Financial System Division, Members of the Financial System Division, The Treasury, and Interested Parties,

Respectfully submitting this consultation in response to sections of the Request for feedback and comments - INITIAL COIN OFFERINGS Issues Paper January 2019 © Commonwealth of Australia, forming part of Treasury's review into Initial Coin Offerings (ICOs). The Treasury invited interested parties to make submissions on any or all aspects of the issues raised in this paper by 28 February 2019.

It is understood that feedback gathered during this process will inform subsequent advice to the Government. This work is submitted and intended to assist the work of the Treasury in forming policy around Digital Assets.

I am an independent Digital Economy analyst, "Digital Economist". At the time of this writing, my work is not funded by any outside entity. A short personal biography and contact information is at the end of this letter.

The intent of this correspondence is to contribute productively by offering insights gathered over one year of research, starting in 2017 through the present, studying the fundamental nature of over 2500 Digital Assets operating in the world's exchange traded Digital Economy. This response to portions of the Australian Government ICO Initial Coin Offerings Issues Paper utilizes findings from "Defining the Digital Economy: The Structure of the Digital Economy in Focus. Published February 14, 2019 *https://www.amazon.com/dp/1796855154/ref=cm_sw_em_r_mt_dp_U_OvXDCbDNY2S6Q*

The over one year of research and analytical work that resulted in the creation of the DASH – Digital Asset Sector Hierarchy fundamental framework uncovered a certain clarity and understanding about the characteristic fundamental nature of Digital Assets now circulating in the worldwide Digital

Economy. This approach was not previously understood or known to me, similarly constructed, or articulated in this novel formulation (to my knowledge) anywhere in the worldwide collective narrative about these issues.

The hope is to contribute by articulating a novel approach which clarifies and effectively addresses finance, technology, and economic concepts as they relate to Digital Assets.

The analytical approach frames Digital Assets against assumptions now generally understood and implemented for incumbent and tangible assets now operating in the world incumbent (legacy) economy. This perspective allows for prompt seamless integration and adoption of Digital Assets into the existing infrastructure and regulatory environment, perhaps only requiring clarification, compliance directives, and opinions for certain use cases or nuances.

It is a difficult challenge for stakeholders to define and frame these technologies, assets, and instruments for legal, regulatory, financial, and economic purposes as they quickly emerge and touch all aspects of the world's economy and commercial ecosystems.

Creating a consistent, evenly applicable, repeatable, and reproducible fundamental construct (a taxonomy), definitions, and categorizations is critical to affect worldwide regulatory standardization and extensible consistency for the future. Framing Digital Assets against existing asset classes allows a more seamless and integrative approach. Cohesive and cogent worldwide definitions allow for common understanding of the nature of Digital Assets across jurisdictions, while still allowing individual sovereignties to create independent regulation and oversight in its Sovereign's specific best interest.

I, Lori Jo Underhill, as an independent researcher and Digital Economy analyst, respectfully submits the following response and comments to individual sections of the INITIAL COIN OFFERINGS Issues Paper, January 2019 © Commonwealth of Australia 2019. Many of the comments and responses to this report are quoted from "Defining the Digital Economy" ™ ©2019. Please do not republish any portion of this submission or sections from this submission without prior permission in writing or accompanied by an appropriate citation and author and source credit.

Introduction: In Response to the following section: Introduction: "Initial Coin Offerings":

"At the same time, regulators in many jurisdictions have expressed significant concerns over the potential risks posed by ICOs to consumers and investors. Reports of fraud and investor loss are numerous and there is also anecdotal evidence that many ICOs have been conducted based on an often incorrect assumption that existing financial regulations do not apply."

Response:

Agree. Many existing financial regulations do cover activities associated with Digital Assets. The research conducted uncovers a fundamental framework which identifies attributes, characteristics, and use cases of Digital Assets which can be evaluated against the characteristics and use cases of assets

now operating in the incumbent economy. Digital Assets have many of the same use cases and functions as incumbent assets in the economy and the majority of those use cases fall clearly under existing regulation.

The four Digital Asset classes uncovered by this research (defined further on in this writing) and outlined in the DASH construct are:

Digital Commodity
Digital Currency
Digital Certificate of Value
Digital Equity

DASH - Digital Asset Sector Hierarchy - Four Digital Asset Class Definitions in the Digital Economy © 2018 and the "Digital Unit" Definition for Digital Ledger items without economic value.

Introduction: In Response to the following section: Introduction "Definitions and token categories"

"While there is no widely-adopted definition of an ICO, it typically involves the creation of digital tokens by an issuer using distributed ledger technology (DLT). The tokens are acquired by investors and potential consumers through online auction or subscription, typically in exchange for a cryptocurrency such as Bitcoin or for official fiat currency such as United States dollars.

In essence, tokens are a medium of exchange within a DLT-based business venture, allowing token holders the ability to earn value and/or to spend their tokens on services that are internal to the venture."

Response:

Language is entirely imprecise. Legal and linguistic scholars have struggled with statutory construction for as long as law has been written in attempts to achieve the most correct combination of words to communicate a cogent understanding of the intent of a law, statue, or rule. This process becomes ever so much more challenging when definitions created in statue may have effect across jurisdictions and many languages, making it ever so much more important to be precise and correct.

Digital Asset Technologies, which currently includes Distributed Ledger, Decentralized Ledger, Blockchain, and Digital Asset Technologies have yet to be defined to date in most of the world's jurisdictions. At the time of this writing most jurisdictions are in the process of formulating rules around these assets. The technologies are global, and their use cases and effects reach beyond geo-political borders, across economies and languages.

Effective legislation is rooted in clear, cogent definition, characterization, in foundationally precise language to create context for understanding when statue and law has an effect across borders and jurisdictions.

It is key to drill down to basic root characteristics when writing statute and to be diligent in defining or utilizing globally understood terminology to create a framework of understanding that will clarify to constituents. Ideally, jurisdictions would agree on basic definitions for key terminology to offer the world context and understanding on how to properly act and perform under the law.

Digital Assets are a combination of technology and finance. In some respects, they are new and, in some respects, have been operating in the incumbent economy for decades.

In 2009, the creation of Bitcoin and the Bitcoin Blockchain Technology opened the door to new opportunities and challenges in finance and technology. Now, in 2019 a full ten years after the first execution of a Digital Asset for payments was successfully implemented, Geo-political sovereigns are forced to review its process and existing legal frameworks to create parameters for oversight about activities related to these technologies, because their use cases are infringing and testing traditional financial and legal frameworks worldwide.

Before jurisdictions can begin to create actionable frameworks around the activities associated with these technologies, it is imperative to create common understanding for all actors within the ecosystem through definitions that define the nature of the instruments and technologies in play. Without cogent definition that creates broad understanding, the effort to create frameworks will be lost on the actors and stakeholders and will do a disservice to all the stakeholders in the ecosystem.

The best-case scenario is to start by creating a basic set of definitions that offers context and understanding about the terms offered in statute, regulation, and compliance oversight.

Understanding arises out of contextual frameworks. Creating understanding about Digital Assets arises out of creating context against instruments already operating in the incumbent economy.

The definitions offered in this response are a result of the study of over 2500 Digital Assets traded on exchanges worldwide between 2017 and 2018. These definitions are rooted in fundamental characteristics of assets and create context against assets operating in the incumbent legacy economy. The taxonomy created out of the study, the DASH – Digital Asset Sector Hierarchy offers findings and insights and identified Four Digital Asset Classes, 26 Economic Sectors and over 250 Subsectors for the instruments operating in the Digital Economy. The full analytical process that uncovered these findings is outlined in *Defining the Digital Economy* published on February 14, 2019. Time is of the essence, these issues are being considered here and now, and I offer insights from my research to assist the Treasury.

Other Digital Asset taxonomies offered to date, until the conclusive findings of this research, have focused on second level attributes such as function, use case, and technology, and have failed because they were not created on appropriate root foundational characteristics. The focus on second level attributes have caused the taxonomies to fail, and the failures are proven by the existence of outliers: Digital Assets that have no apparent category. This circumstance is proof that the characteristics used to create the categories are not foundational.

The process to identify of the root foundational attributes to analyze the instruments operating in the Digital Economy took the deep evaluation and consideration of over 250 Digital Assets over a 4-month period. The only way to accomplish it was to create context to financial instruments operating in the incumbent economy, and to drill down to the root fundamental characteristics.

Once the root characteristics were identified and the subjects were evaluated, the work exposed Four Digital Asset Classes (described below) and an Identifier without external monetary (measurable financial value), a "Digital Unit".

The confusion surrounding the instruments operating in the Digital Economy starts with the assumption that Digital Assets are a singular asset class, when this research has now uncovered that Digital Assets operating in the Digital Economy at this juncture consist of Four Asset Classes and a non-monetary identifier.

Markets in the incumbent economy are largely asset class specific, and conversely, Digital Asset markets in their nascent stage combine trading activity for all four Digital Asset classes. This fact previously obfuscated the findings and insights that are uncovered by this research, and analysts did not previously see what this research uncovers.

Digital Asset and Digital Unit Fundamentals - Identifying the Appropriate Root Characteristics to evaluate Digital Assets

Digital Commodities, Digital Currencies, Digital Certificates of Value, Digital Equities, and Digital Units all operate on a digital ledger, distributed ledger, or blockchain. This broad technological characteristic does not distinguish them from each other. All Digital Assets and Digital Units operate on some sort of digital ledger. Categorizing or classifying a Digital Asset or Digital Unit based on its digital ledger transactioning technology does not offer a coherent, scalable, or useful contextual characteristic to distinguish and classify these assets apart from each other, nor does it offer context against existing financial asset classes operating in the world's financial and regulatory infrastructure.

Algorithmic and cryptographic transactioning technologies for digital ledgers can vary, but don't offer a properly delineated, scalable, coherent mechanism to analyze fundamental parallels or distinctions between Digital Assets and Digital Units for characterization, classification, and contextual purposes.

An algorithm technology or a nuanced benefit from a transaction technology capability generally serves more as a feature, than a proper fundamental classification and characterization standard. However, if a Digital Asset's transactioning method or technology is novel, adds measurable uniqueness, an enhanced functionality, or economic value; the value-add technology or method could offer an enhanced underlying value possibly distinguishing the Digital Asset from another within and/or outside of its own asset class.

For example, if a Digital Asset utilizes the same transactioning algorithm as Bitcoin, but also utilizes an additional network layer enhancement protocol which adds a feature such as cyber security or function such as authentication, the protocol would then offer an enhancement or distinction to the

basic transaction technology utilized by many Digital Assets across the economy. The cyber security feature may be enough to enhance the Digital Asset's primary value proposition (or revenue potential) enough to distinguish it from another Digital Asset and serve as a consideration in determining the economic sector where it operates.

Creating a fundamental Digital Asset contextual construct (or what some call a "taxonomy") must be constructed from determining the base characteristic nature of each asset and is not proper or effective if constructed from features, technologies, or utilities. Technology, utility, and use cases change or become obsolete; therefore, are not a functional basis for a proper taxonomy.

The analysis that created the DASH – Digital Asset Sector Hierarchy had to start by identifying the foundational fundamental characteristics of the nature of Incumbent Assets operating now in the world's economy. Then testing those characteristics against Digital Assets, it exposes a coherent integrative construct that can be applied to every Incumbent Asset and Digital Asset.

Foundational fundamental characteristics and methods of exchange should be considered by regulators when determining which and how Digital Assets are regulated, taxed, controlled, and under which authority, exactly like assets operating in the Incumbent Economy, for example:

The deep study of over 2500 Digital Assets confirmed the following foundational characteristics appropriate to evaluate Digital Assets:

1. Physical form, property, or tangibility.
2. The nature of its fungibility or non-fungibility.
3. Whether the Digital Asset represents an underlying asset either unique or fungible.
4. Whether the Digital Asset is supported by, is the native tender of, or utilized by an underlying economy, technology, or utility.
5. Whether the Digital Asset is a representation of an underlying asset or an asset unto itself.
6. Whether the Digital Asset's supply is finite, or the asset is created as needed by its economy or utility.
7. Whether the Digital Asset has financial value both within and outside of its own economy or ecosystem.

Technology, utility, features, and use cases change or become obsolete; therefore, are not a functional basis characteristic to create a proper taxonomy.

The lack of regulatory clarity, guidance, and few sources of fundamental information about the characteristic nature; value proposition; widely accepted clear definition, classification, and categorization of these assets; is contributing to the current state of confusion and speculation in the marketplace.

Digital Asset Construct Analysis

1. The first step includes the identification of the proper foundational characteristics, defining the Digital Asset classes by testing against the root foundational attributes, evaluating the similarities

and distinctions between them, and separating them by asset class. This provides the proper basis for the taxonomy.

2. The next step is to evaluate the function, use case, technology, primary purpose, economic revenue sector, or attributes that create parallels and distinctions between them. This process separates each asset within each of the asset classes. This step determines sub-asset classes or separates assets by economic sector, work already completed in the DASH construct. The outcome is demonstrated in the current implementation of the DASH that is combined with actual exchange traded market data, visualized on CoinSector. These attributes can also be applied to Digital Assets not traded on third party exchanges. This will assist high-level decision making to determine the proper agency that should provide oversight.

3. Finally, the evaluation of the use case, technology, and applicability under current law is done at this level. This will determine the applicable rules to evaluate each Digital Asset's use case and function. Determinations based on issues include, but are not limited to custody, where the Digital Assets are exchanged, and terms for any investment contract or profit generation implementation on the Digital Ledger, to name a few. These evaluations should be done at this juncture.

There are few resources available to date that offer information to assist consumers, institutions, and regulators to grasp and fully understand the fundamentals behind Digital Assets. To answer questions; for example:

1. What is the function of the Digital Asset; the technology behind it, who created it, and what supports it?
2. In what economic system, sector, and subsector does the Digital Asset operate and what other Digital Assets share that common ecosystem and activity sector?
3. What is the functional activity and/or value proposition of the underlying activity, and what, if any, nuances exist that might distinguish it from another asset, or put it in the same category as another?
4. What purpose, if any, does the Digital Asset serve the larger financial, economic, technical, or future emerging ecosystem?
5. What fundamental characteristics or properties does the asset have? Including but not limited to: fungibility, tangibility, scarcity, and whether it is supported by an underlying economy, technology, or utility.

These characteristics distinguish the assets beyond their Inherent Store of Value within and outside of their micro economies. In both the Incumbent Economy and the Digital Economy, these factors contribute to the determination of an asset's primary purpose (or source of primary revenue), asset class, economic sector, and economic subsector.

A focus on the fundamental characteristics of Digital Assets proves that Digital Assets cannot convert. For example, from a Digital Equity to a Digital Currency. These fundamental distinctions prevent a shift in a Digital Asset's fundamental characteristics. Digital Equities can be Stores of Value or mediums of exchange in the same way that Digital Currencies can be Stores of Value or mediums of

exchange. Digital Assets are Stores of Value and can be exchanged; however, this fact alone does not shift the nature of their fundamental characteristics or change all Digital Assets into Digital Currencies.

Incumbent Assets do not morph in the incumbent and tangible world, they do not change. Digital Assets do not morph, they do not change. Assets are either fungible or non-fungible. A non-fungible equity cannot change into a fungible currency.

Opinion: Determining the appropriate regulatory oversight and classification for any asset should be based on factors such as: an analysis of the asset's physical properties, supply, where and how it operates; where the assets are held or controlled if through custodianship; where and how it is exchanged, the purpose it serves in any underlying economies other than their value as an Inherent Store of Value on third party financial exchanges. The second level analysis consists of what physical, technological, or utilization enhancements or inherent properties it has. These characteristics or methods of exchange should be considered by regulators when determining which and how Digital Assets are regulated, taxed, controlled, and under which authority, exactly like assets operating in the Incumbent Economy.

DASH - The Digital Asset Sector Hierarchy™

As the chief Digital Economist and Chief Methodologies Architect for The Underhill Madsen Organization, I created the DASH - Digital Asset Sector Hierarchy after more of a year of research study between 2017-2018 of over 2500 exchange traded Digital Assets worldwide. The Construct/Taxonomy is visualized at https://www.coinsector.io combining market data with the DASH. The January 2018 UMI-DASH Whitepaper: https://www.coinsector.io/whitepaper.

The construct identifies Four Digital Asset Classes and an identifier with no measurable financial value: "Digital Unit".

THE STRUCTURE OF THE DIGITAL ECONOMY

The exchange traded Digital Economy is separated into four asset classes: Digital Commodities, Digital Currencies, Digital Certificates of Value, Digital Equities.

Digital Commodity

Definition (defined here): A "Digital Commodity" is a consensus of trust and confidence; its value exists on its own without an underlying economy. A Digital Commodity can be perceived to be scarce, in limited supply, difficult or expensive to divide, extract, use, or transfer. A Digital Commodity is fungible. Fungible assets are not unique to one another, are the same in character, and are interchangeable.

Examples: Gold, Silver, Pork Bellies, Natural Gas, Oil, Bitcoin. One bar of 24-carat gold is the same as another bar of 24-carat gold. One Bitcoin is the same as another Bitcoin in its character.

Digital Currency

Definition (defined here): A "Digital Currency" requires a consensus of trust, confidence; is a unit of account, divisible, stable, accepted; measured against other assets or currencies of value; possibly regulated by authority or governance framework; and supported by an underlying technology, utility, activity, or economy. It may have value or utility within its underlying micro economy; and may, or may not, have any value outside of the underlying economy. Currencies are generated or destroyed as needed for utilization by the underlying economy by the authority or governance framework. Currencies are fungible. Fungible assets are not unique to one another, are the same in character, and are interchangeable.

Examples: EUR, USD, CHF, JPY, EOS, ETH, XRP. One Euro is the same as another Euro, and one Ether is the same as another Ether in its character.

Digital Certificate of Value

Definition (defined here): A "Digital Certificate of Value" has inherent value as a representation of a certificate that can be presented to the underlying asset custodian in exchange for the actual underlying asset (tangible, intangible, Digital Commodity or currency), in proportionate value as identified by the governance framework of the Digital Asset. Digital Certificates of Value are generally fungible. Fungible assets are not unique to one another, are the same in character, and are interchangeable.

Examples: The United States Dollar before the gold standard was abolished. The Gemini Dollar or Tether backed by the United States Dollar. The Carat backed by Diamonds. Any Digital Asset that has an underlying asset held in custody and can be redeemed for the underlying asset. Divisibility is a consideration in the analysis. One Gemini Dollar is the same as another Gemini Dollar in its character. These Digital Assets are sometimes referred to as "Stable Coins."

Digital Equity

Definition (defined here): A "Digital Equity" is a representation of an ownership interest; whole or fractional, tangible or intangible. A market may or may not exist in consensus for the value of the underlying property. A Digital Equity is difficult or impossible to divide. A Digital Equity is non-fungible. A non-fungible asset is unique in its characteristic as a representation of another asset or item, or the manifestation of one unique and serialized intangible or tangible asset or item. Digital Equities are unique to one another, distinct in character, and not interchangeable.

Examples: Unique Shares of an Entity, Ownership in Real Property, Cryptokitties, Bonds, Shares in Financial Products, Unique Artwork, Jewelry, or Couture Fashion. Any asset that is indivisible, serialized, or unique.

There are three further definitions that properly sub-classify Digital Certificates of Value and Digital Equities. The assets classified as Digital Certificates of Value and Digital Equities can be either a "Manifested Asset", "Representative Asset", or an "Underlying Asset". Digital Asset sub-classes will

further categorize these assets as Digital Equity - Entity Security, Digital Equity - Real Estate, Digital Equity - Bond, Digital Equity - Real Property, Digital Equity - Digital Property, etc.

Manifested Asset

Definition: A Digital Equity that is a digital non-fungible unique manifestation of a store of value without an underlying asset. These are unique, serialized, and non-fungible assets.

Representative Asset

Definition: A Digital Asset that is the representation of an underlying fungible or non-fungible asset (tangible, intangible, or digital). Non-fungible as a Digital Equity, and fungible as a Certificate of Value.

Underlying Asset

Definition: An asset (tangible, intangible, or digital) represented by another Digital Asset.

Software with Function and Utility

There are components of computer software that do not have economic value, but have function or usefulness. The collective narrative about blockchain, digital ledger, and Digital Asset technologies has adopted the term "utility token" in common usage terminology to describe these software components/items offering function and usefulness outside of any financial value. However, the term "utility token" is not an appropriate usage of the two individual words within that term to properly define the descriptive intent behind the common usage of the term. The words token and asset are associated with financial and economic value and not all digital ledger components have inherent, intrinsic, measurable, or associative financial value.

The term "Digital Unit" is a more effective term than the term "Utility Token" to describe software components/items utilized by digital ledgers with function and usefulness that do not have economic value. Digital Units are not traded for monetary or store of value exchange.

Blockchain, Distributed, Decentralized, Public, Private, and Hyper Ledger Technologies can utilize items that have no financial value; yet are useful and functional, and are not a part of the Digital Economy.

Digital Unit

Definition (defined here): A "Digital Unit" is a piece of software that is functional and useful, is not an asset, has no inherent financial value, external economic value, and does not represent an asset or a store of value that has financial value. It could be fungible or non-fungible depending on its use case. The supply of the software could be finite or infinite depending on its use case. The

software can be a manifestation of something, or represent something underlying that may, or may not, have utilitarian or economic value; however, the unit itself has no financial value.

Examples: A Vote, Identity, Digital Container, Measurement, Store of Information, or Store of Data.

I offer my personal availability for clarification, deeper analysis on the sections addressed in this response, the entire report, or other work as needed and otherwise requested. I cordially invite the Australian Government, Division Head - Financial System Division, Members of the Financial System Division, The Treasury, and Interested Parties, to contact me directly with any questions about this commentary or any other related issue that may arise.

Respectfully Submitted,

Lori Jo Underhill

Lori Jo Underhill
Independent Digital Economy Analyst
"Digital Economist"
LJU and Associates Consulting
Author: *Defining the Digital Economy: The Structure of the Digital Economy in Focus*
www.ljuassociates.com
lorijounderhill@gmail.com
Phone contact available upon request

Lori Jo Underhill, is an independent researcher, a Digital Economy analyst, "Digital Economist." No sponsorship on the date of this writing or employed by any special interest in finance other than in association with a professional consulting practice. https://www.ljuassociates.com

The academic work, the DASH–Digital Asset Sector Hierarchy (DASH) is visualized in an independent project called CoinSector. https://www.CoinSector.io

Credentials: Bachelor of Science in Business Administration (1984) and Juris Doctor of Law (2014), educated in the United States.