



Feedback on :

Token Mapping

Australian Government - Treasury

Blockchain Assets Pty Ltd

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Introduction and Summary

Blockchain Assets Pty Ltd is the trustee and manager (the Manager) of the Blockchain Early Opportunities Fund. This submission draws on the experience the Manager has researching and investing in blockchain technology since 2016.

We have watched the development of regulations across the world as they have evolved. In 2016 there was very little interest shown by regulators and this matched their level of knowledge. Today the global regulatory environment is a mixed bag, there are some examples of outright failure (the New York Bitlicense being one such example) and some of success (the Wyoming crypto bank and regulatory laws being a good example).

We are active in trying to help the regulatory environment for the crypto industry and have previously have made the following public submissions :

1. The Australian Treasury on the proposed Ban on Cash which came out of the October 2017 Black Economy Task Force Report ([see here](#));
2. The 2018 Treasury Review into Initial Coin Offerings ([see here](#));
3. The 2019 Australian Human Rights Commission report on technology ([see here](#)); and
4. The 2021 Australian Securities and Investment Commission Discussion Paper 343 on Regulation of Crypto Assets ([see here](#)).
5. The 2022 Australian Treasury - Australian Government - Crypto asset secondary service providers : Licensing and custody requirements.
6. The Digital Assets (Market Regulation) Bill 2022 No. , 2022

In this document we are providing our feedback on the Treasury's 2023 Token Mapping Consultation Paper.

Foreword

The 1996 Financial System Inquiry Report (the Wallis Report) noted that some people were of the view that :

'the financial system (and perhaps other areas of the economy) is undergoing a 'paradigm shift', a more revolutionary transformation which represents a sharp discontinuity from the trend experience of the past. Those holding this view expect that financial processes and structures will be transformed by the rapid emergence of much lower cost information technology and its equally rapid dissemination into homes and workplaces. This shift would not only dramatically alter service delivery channels but could also redefine the character and boundaries of markets. Such discontinuities have occurred in the past in other industries, and it is argued that the financial services industry will now experience a similar shift.'

This quote from 27 years ago is remarkably accurate and forward thinking. The internet was a paradigm shift. The invention of bitcoin in 2008 was also a paradigm shift and in our view, it is more substantial. The bitcoin implementation is the first demonstration of a new trust verification model for humanity. It is not trustless. Rather, it swaps out centralised subjective human based trust for decentralised objective and mathematically proven based trust.

We are encouraged by the depth of understanding in the Token Mapping paper and by the high level thinking around the different types of assets, protocols and actors in the ecosystem. We agree with a lot of what has been outlined in the paper.

There are two high level areas we would like to challenge. The first is the principle of 'technology neutrality', the second is on the objectives of financial regulation.

Technology Neutrality

The hard and fast adoption of the principle of 'Technology Neutrality' runs the risk of closing off the opportunity of broader regulatory reform which this technology offers and some say, demands.

In relation to technology, former ASIC Commissioner, Cathie Armour noted that :

'Our regulatory regime is principles based and operates in a technology-neutral way. What this means is that in Australia the rules are the rules no matter whether you are dealing face-to-face with a customer sitting in front of you, or via an app on the customer's smartphone. Pragmatism means that we do sometimes amend our regulatory regime to facilitate or recognise new technologies — for example, we have facilitated electronic securities offering documents — but mostly our regulation is technology-neutral.'

The first sentence of this statement heavily implies that existing regulations and practices are fully fit for purpose regardless of what technology is being used. The second sentence allows for the possibility of amendment, but the example given is very minor.

There are a number of good reasons for having Principles based policies and something we generally support. However, from time to time there are situations where something is 'to be done on principle', where the principle makes no sense in the particular situation or perhaps the principle is no longer relevant for some reason or another.

The key breakthrough with this technology is not the nature of the assets - financial product or not - blockchains are fundamentally a settlement layer upgrade. More than an upgrade they offer a completely new system. This new system allows for Direct Access and Direct Settlement (DADS) of all types of assets in a borderless environment 24/7/365. Future asset marketplaces, which in many

ways are already here, provide for the trading of financial and non-financial products which are cryptographically secured and recorded on a public distributed ledger.

Technology neutrality is usually a good principle. However, at this exploratory stage, the suspension of this principle would allow for a wider range of regulatory possibilities and solutions to be put forward and this is what we feel is needed and the Treasury should be encouraging.

The Wallis report was forward looking. But it's now 27 years old. There is every possibility that public blockchains will manifest themselves in everyday life in much the same way as the internet did over the past decades. We should at this time be asking ourselves how we would best meet regulatory objectives if, in 10-15 years time, general-purpose public blockchains are very very widely used.

Also and importantly we need to consider scams involving the use of AI. So called 'pig butchering' scams involve forming close and personal relationships on-line with strangers who, once befriended, are hoodwinked into sending their life savings in crypto currency to the scammers. These scams can be conducted by AI robots or sometimes by human trafficked victims ([see here](#)) who are forced to call and scam people. Technology is part of the problem, it must be part of the solution, procedures and regulatory guidelines formed even 10 years ago have a high chance of not being effective in the current environment.

Our Recommendation here is :

- 1. The principle of technology neutrality be suspended for the purpose of widening the opportunity for novel regulatory solutions to emerge**

The Objectives of Financial Regulation

The current regulatory environment - which is common in many western democracies - is largely focused on consumer protection.

One of the central tenets of consumer protection is the notion that wealthier investors (so called wholesale or sophisticated investors) need less protection than those earning lower incomes or with lower levels of net wealth (so called retail investors). Another tenant is the notion that more protection is needed in the case of assets that are 'financial products'. Thus we have two gateways in our regulations, firstly what type of asset is being sold and secondly to whom is the asset being sold.

Both these tenets are being challenged by this technology and they need to be revised.

Financial regulations should not be discriminatory and should have three main objectives.

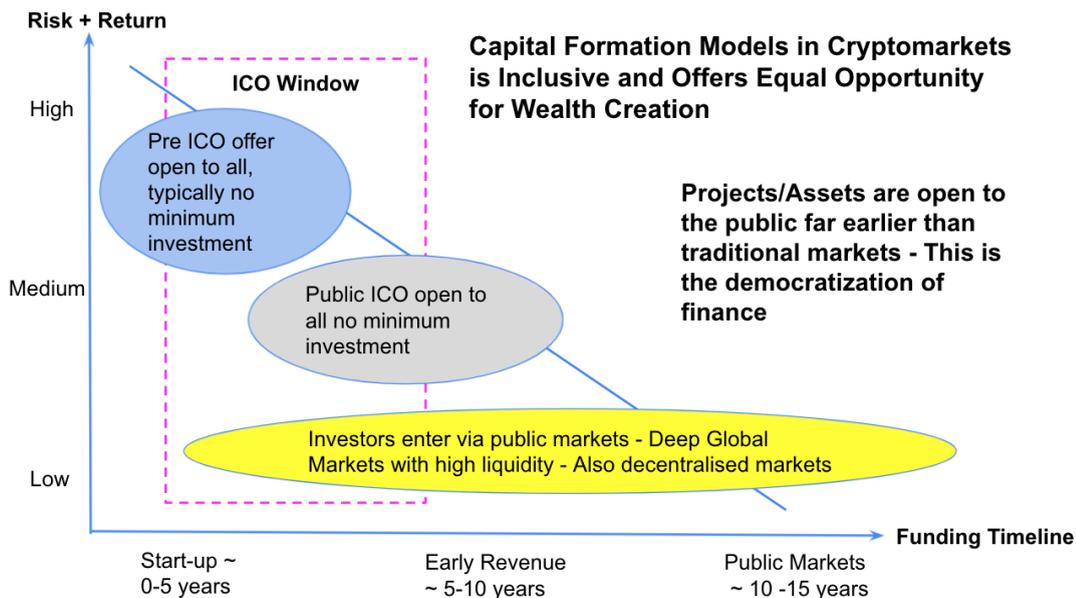
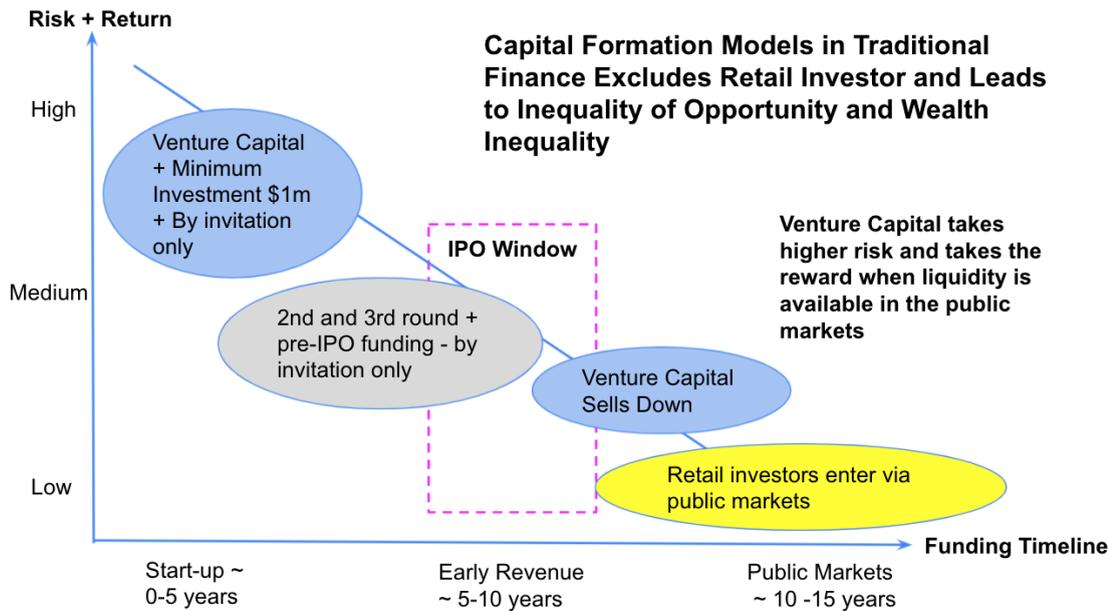
Regulatory Objectives

The objectives should include :

1. encouraging financial inclusion;
2. reducing wealth inequality; and
3. providing consumer protection.

Too often regulators focus only on the consumer protection objectives of regulations. Blockchain technology has enabled greater financial inclusion (often referred to as the [democratisation of finance](#)) and [reduced wealth inequality](#).

These are two of the most significant social benefits of the technology.



Eliminate Financial Discrimination from the Corporations Act

The so-called 'sophisticated investor' designation in the *Corporations Act 2001* has had the effect of creating two classes of investors. Wealthy investors have access to sophisticated and tailored financial advice and a wide range of investments. Poor investors have, at best, access to 'robo' advisors and low risk low return investments (the bottom right in the illustrations above).

This discrimination based on wealth is no longer acceptable in Australia (it never was!). The notion that wealthy people are somehow more financially sophisticated than poor people should be abandoned entirely. Our current regulations seek to provide consumer ***protection by exclusion***. We believe this concept should be turned on its head, the financial markets should be open to everyone and the protection measures should be an overlay of that principle. So ***inclusion with protection***.

Financial discrimination, which is at the heart of our regulatory system, is a structural design fault that has led to increased wealth inequality and decreased financial inclusion.

Our Recommendation here is :

2. Financial discrimination in our financial regulatory system should be removed. Regulation should emphasise three main objectives : reduction of wealth inequality; increase in financial inclusion; and consumer protection.

Direct Access and Direct Settlement of Cryptoassets

Current asset marketplaces are siloed by geography, type of asset, regulator and they are heavily intermediated. We have already in the nascent tokenized world asset marketplaces that are borderless, open to any type of asset, tradable peer to peer, allow for atomic swaps all in a permissionless and sometimes decentralised marketplace.

We totally agree that the '...crypto ecosystem is not a homogenous industry or sector...'. The future of asset ownership, transfer and record keeping is tokenized and it is on public blockchains.

We also agree that crypto assets represent '...a vast range of different token types representing a wide variety of things...'. Tokenization is a wrapper that can contain any type of asset or indeed a blend of a number of different types of assets.

Regulation needs to solve for these two new realities :

1. Asset ownership and transfer on a peer to peer basis ;
2. A breakdown of clear asset types ('financial products' and non-financial products).

We do not have a clear vision of how regulation should best be designed for the tokenized world. But we do feel that it is possible to design the new regulatory environment for the tokenized world and make it backward compatible with the existing regulatory environment.

Our Recommendation here is :

- 3. Regulations need to accommodate Direct Access and Direct Settlement market places where sales and trading for both financial and non-financial products can take place in permissionless manner.**

Questions

Q1) What do you think the role of the Government should be in the regulation of the crypto ecosystem?

This is a very difficult philosophical question.

One answer re-frames the question like this : 'who should rule cyberspace?'. Eric Hughes an American mathematician and computer programmer authored the [Cyberpunk manifesto in 1993](#). This document sets out the need for privacy and argues that the privacy of the individuals is the foundation of freedom in western democratic political systems.

Blockchain technology has the potential to give back some of the privacy that citizens have given up or had taken from them over the past decades of the internet and government overreach. But it also has the potential to be the ultimate 'big brother' enabler. For example, Alex Gladstein, Chief Strategy Officer of the Human Rights Foundation, is of the view that Central Bank Digital Currencies (CBDC) can be used by authoritative regimes (or democracies tending toward totalitarianism) as a tool for controlling citizens. Alex's 2021 article in the

Cato Institute's Journal titled 'Financial Freedom and Privacy in the Post-Cash World' ([see here](#)) sets out a human rights view of the importance of financial privacy in the context of the emergence of CBDC's.

The Government has a role to highlight the issues of privacy and freedom and in particular the Treasury - who are working on a CBDC - should be highlighting the potential loss of freedoms that CBDC's can bring.

An answer to a narrower interpretation of the question is that the Government should focus its regulatory framework on :

1. encouraging financial inclusion;
2. reducing wealth inequality; and
3. providing consumer protection.

Too often regulations focus only on the consumer protection objectives of regulation. Blockchain technology has enabled greater financial inclusion (often referred to as the [democratisation of finance](#)) and [reduced wealth inequality](#).

These are two of the most significant social benefits of the technology.

Q2) What are your views on potential safeguards for consumers and investors?

As outlined above, we believe that all forms of Financial Discrimination should be eliminated from the Corporations Act 2002.

The so-called 'sophisticated investor' designation in the *Corporations Act 2001* has had the effect of creating two classes of investors. Wealthy investors have access to sophisticated and tailored financial advice and a wide range of investments. Poor investors have, at best, access to 'robo' advisors and low risk low return investments (the bottom right in the illustrations above).

This discrimination based on wealth is no longer acceptable in Australia. The notion that wealthy people are somehow more financially sophisticated than poor people should be abandoned entirely. Our current regulations seek to provide consumer

protection by exclusion. We believe this concept should be turned on its head, the financial markets should be open to everyone and the protection measures should be an overlay of that principle. So ***inclusion with protection.***

Financial discrimination, which is at the heart of our regulatory system, is a structural design fault that has led to increased wealth inequality and decreased financial inclusion.

In our view the collective wisdom of the crowd, including all those involved in this token mapping exercise, should be freed from the restraint of the 'Technology Neutral' principle and encouraged to develop novel regulatory solutions which can replace the current system of 'protection by exclusion' method.

Some possible solutions could include :

1. Crowd assessed self-teach financial literacy resources;
2. Assess an individual's ability to invest based on skills and knowledge rather than wealth;
3. Red flags approach to all projects...all flags are red until pro-actively lifted by oracles approved to do so; and
4. Widen the reach and scope of financial advisers.

There are many others. The future will have multiple approaches which combined will achieve the right level of consumer protection vs consumer inclusion.

Q3) Scams can be difficult for some consumers to identify.

a) Are there solutions (e.g. disclosure, code auditing or other requirements) that could be applied to safeguard consumers that choose to use crypto assets?

b) What policy or regulatory levers could be used to ensure crypto token exchanges do not offer scam tokens or more broadly, prevent consumers from being exposed to scams involving crypto assets?

There is a difference between a scam, a bad business model and incompetence. Like any other markets all three exist in the crypto world. However the word scam gets used a lot to describe projects that were honest and well intentioned but badly put together and have failed. There are a lot of bad projects out there that

fall into this category, however, I feel it is important to use the word scam only in the context of criminally fraudulent or deceptive conduct.

This is an oversimplification but consider two broad types of scams :

Blatantly Illegal

This includes phishing scams, scam tokens in private wallets, extortion, etc.

We believe that aside from policing, of which we are unqualified to speak - the greatest effectiveness per dollar spent could be directed towards education campaigns.

Financial and cyber crimes seem to target the most vulnerable members of society. One thing most of these victims in the cryptocurrency space have in common is that they must access 'on-ramps' to transfer their AUD to cryptocurrency.

I believe it would be beneficial to partner with the on-ramps that Australians use to provide educational resources to this segment. Organisations like Binance Australia, SwiftX, etc. would provide significant reach to this portion of the population, it would also enable information about the latest kinds of scams to be quickly circulated amongst its users.

Complex and Illegal

Historically this includes Bernie Madoff, subprime CDOs. Now, Luna, FTX, Rugpulls.

Given the complexities and power of the organisations involved in perpetuating this kind of scam - scam education provides diminishing returns here.

Regulations already require the open and honest disclosure of information from projects operating within their borders - Companies and Directors who make false and misleading statements can be hit with punitive measures. There is a broader question of whether the existing laws are effective for real world scams?

True crypto scams like [OneCoin](#) and [Bitconnect](#) (we would include [HEX](#) and [Daxci](#) in this list) are egregious and there are many of these. Even today the OneCoin scam continues in Australia despite regulatory agencies knowing about it, something needs to be done on that front. For those who know crypto the red flags are easy

to spot and a quick google search of the project name will lead to copious amounts of data setting out why the community views this or that project as a scam.

The ASIC (and other government agencies) general warnings are not sufficient ([see here](#) the ASIC disclosure on OneCoin). We need to find a way where the collective knowledge of responsible market participants can be collated into a traffic light style list of possible scam projects that is endorsed by ASIC and others. This could be done by way of a crypto wiki scam site where members of the public can post scams that are reviewed and ranged by approved oracles. This is something the Australian Govt could fund/launch for the global crypto ecosystem.

Collective intelligence companies efficiently assess risks by utilising a core tenet of the blockchain industry, decentralisation. They organise analysts from different backgrounds using incentives structures to maintain objectivity and a comprehensive approach to project research.

If encouraged, these projects could hold enough information to become, for lack of a better analogy, rating agencies for the blockchain industry.

Another advantage of this system is that we're able to avoid the blunt instrument of enforcement - occasionally preventing innovation. This system would instead act as a guide to consumers and make recommendations to regulators.

It is our recommendation that regulators seek to learn about and encourage these organisations. There are a number in Australia.

Q4) The concept of 'exclusive use or control' of public data is a key distinguishing feature between crypto tokens/crypto networks and other data records.

a) How do you think the concepts could be used in a general definition of crypto token and crypto network for the purposes of future legislation?

b) What are the benefits and disadvantages of adopting this approach to define crypto tokens and crypto networks?

Bitcoin is the world's first digital property. We believe it fits within the definition of property as set out by the High Court. The common saying in crypto is 'not your

keys not your coins', I think this is the same principle as 'exclusive use and control'.

All crypto assets are capable of being held and controlled for exclusive use of the controller/owner of the private key. This is a unique feature of crypto assets so in a broad sense it is possible to use this feature as a defining characteristic. This said I am not sure how useful that would be or what purpose it would serve.

If we consider taxonomy in science. We start with living things and nonliving things, this is a high level separation of things, we can then dive into greater and greater detail. For what purpose? We are trying to understand the world around us and relate one thing with another and also create a searchable index. We research the properties of the things we have and allocate them to a box based on those properties.

If we divide the world into crypto assets and non-crypto assets, what do we achieve? Not as much as the living v nonliving distinction as two versions of the same type of asset will exist. For example Gold v Gold Backed Fungible Tokens. They essentially have the same properties as an asset yet they have been separated at the top level (crypt v non-crypto) into two different asset buckets. This makes no sense at all.

We feel that trying to create a whole new taxonomy around crypto assets is a waste of time and will look foolish. There will be an explosive use of crypto networks and tokens in the years to come. Yes there will be some new types of assets, but in the main they will be the same types of assets, just in crypto form. Ether for example is arguably a Capital Asset, a Store of Value Asset and a Consumer Asset. It is a new asset in a way but at the same time there is nothing new, it's just the fact that it has all three properties that is novel.

The more interesting conversation is when we view blockchain technology as a clearing and settlement system, and what that does to existing auditing, custody, intermediary models.

I feel we could arrive at different regulatory guidelines for crypto assets (assets where the exclusive use and control is with the holder of the private key). Specifically ASIC Regulatory Guide 211, Clearing and Settlement Facilities, cannot really be applied to DADS clearing and settlement arrangements which are already

implemented in a number of protocols. If we are to consider granting custody or market licences in Australia for crypto assets we will need a crypto asset version of RG 211.

Q5) This paper sets out some reasons for why a bespoke 'crypto asset' taxonomy may have minimal regulatory value.

a) What are additional supporting reasons or alternative views on the value of a bespoke taxonomy?

We can think of none.

b) What are your views on the creation of a standalone regulatory framework that relies on a bespoke taxonomy?

For the reasons set out above we feel the creation of an exhaustive and bespoke taxonomy will be a waste of time and will be considered foolish in a few years time.

The high level taxonomy set out on page 18 of the paper is helpful for the moment in thinking through potential regulatory approaches to crypto assets. We support this high level taxonomy.

c) In the absence of a bespoke taxonomy, what are your views on how to provide regulatory certainty to individuals and businesses using crypto networks and crypto assets in a non-financial manner?

There should be an open minded approach to legislation/regulation. We note that the State of Wyoming in the US has adopted an approach where in some cases new laws are needed, while in others existing laws can be amended, while in some other situations existing laws are perfectly workable. Of course this is to be expected, reform is not as simple as 'we need completely new laws' (as we sometimes hear from the crypto community) or 'all existing laws are adequate' (as we sometimes hear from the traditional finance community).

Q6) Some intermediated crypto assets are 'backed' by existing items, goods, or assets. These crypto assets can be broadly described as 'wrapped' real world assets.

a) Are reforms necessary to ensure a wrapped real-world asset gets the same regulatory treatment as that of the asset backing it? Why? What reforms are needed?

The main difference between Physical Gold and a Perth Mint Gold Baked Token is the ability to send tiny amounts of gold to anyone anywhere in the world with no permission from anyone. I don't see the need for specific reforms in this example.

However, things can get complicated. Take for example a tokenized building in Dubai. It is quite possible for an Australian to buy say AUD 10,000 of the Burj Khalifa project and the tokenized version could be marketed by an Australian real estate agent.

Assessing the veracity of the investment is not necessarily a blockchain issue, the question is how to verify that the token does have contractual rights to an interest in the building, how robust are those rights and in which jurisdiction can they be enforced.

Again here, it is not that blockchain tech has created new assets, the assets are the same. Blockchain has not even created a new legal construct, unitized building etc already exist (REIT's ETF's etc). The big deal here is the clearing and settlement process which makes the accessibility to such assets so easy. This is a feature, not a bug of the technology. But it does require some new regulatory oversight. But again here also, we do not want consumer protection by exclusion. Why should an Australian not be able to buy tokenized [insert name of city] Real Estate.

b) Are reforms necessary to ensure issuers of wrapped real-world assets can meet their obligations to redeem the relevant crypto tokens for the underlying good, product, or asset?

Yes and here we have to consider onshore and offshore issuers.

Again we highlight the significance of the change to clearing and settlement of asset ownership. Under current laws it is perfectly legal for a Dubai based company to market and sell real estate to Australian citizens. The tokenization of such property does not create a new type of asset or legal construct.

However, because of the ease with which assets can be tokenised and traded, the risk for Australian investors is greatly increased. I am sure scams are already selling fractionalised real estate projects that do not exist or if they do the token holder

does not understand the rights they have (or don't have) with the token. Think about a scam like [The Great Southern Group](#) but one that involves fictitious offshore property and is run by shell companies in tax havens.

Australia cannot wrap itself in a bubble and close out offshore tokenisation projects. But equally the current consumer protection environment will not provide sufficient protection for offshore (and even onshore) asset tokenisation projects.

We leave the discussion of what those reforms could be for another time.

Q7) It can be difficult to identify the arrangements that constitute an intermediated token system.

This is a very good point.

a) Should crypto asset service providers be required to ensure their users are able to access information that allows them to identify arrangements underpinning crypto tokens? How might this be achieved?

The on and off ramps - which includes both crypto and traditional businesses - are a logical place to set-up regulatory checkpoints.

Traditional service providers, mainly the Banks, have taken the lazy and possibly self preservation approach of debanking crypto exchanges and blocking transfers to crypto exchanges. Shame on them!

Crypto asset service providers are probably the best equipped to identify an 'intermediated token system' but it doesn't make the task of identification any easier. Many of the larger crypto exchanges already have good self imposed standards that filter out highly centralised tokens which could be defined as financial products.

At this stage even the deepest experts in this area will disagree with what constitutes a decentralised system. There are potentially three different axes of decentralisation : architectural decentralisation; political decentralisation; and logical decentralisation.

At this stage, it is unfair to pass the burden of identifying various arrangements to

any one participant in the ecosystem, particularly if there are financial and other penalties applied in the case of an identification error and particularly given the large area of grey that exists.

b) What are some other initiatives that crypto asset service providers could take to promote good consumer outcomes?

We are working on the basis that everything will eventually be tokenized. Possibly the next big way of tokenisation will be equities. So what does that world look like for existing securities exchanges like the ASX and what does it look like for the dozens of AUSTRAC registered crypto exchanges.

The current licensing regime : Financial Markets licence ; and Clearing and Settlement licence combined provide a centralised gateway that offers consumers protection, but it is a system of 'protection by exclusion'.

The new trading, clearing and settlement technology removes the gateways. One outcome of this is that projects are brought to the public markets way earlier than in traditional markets, this increases risks and rewards for investors. We want to move to a system of 'inclusion with protection' so that everyone has the same opportunity to invest.

Q8) In addition to the functional perimeter, the Corporations Act lists specific products that are financial products. The inclusion of specific financial products is intended to both:

(i) provide guidance on the functional perimeter;

(ii) add products that do not fall within the general financial functions.

a) Are there any kinds of intermediated crypto assets that ought to be specifically defined as financial products? Why?

We would like to see Bitcoin and Ether offered to the public in a safe and secure manner. They are not financial products. Perhaps the concept of a financial product should be put to one side for the purpose of thinking through a new regulatory approach to a new trading, clearing and settlement technology.

Under the DADS regime there is no distinction between a financial product or not.

Individuals can have direct access to a global marketplace of crypto assets. How should the government protect Australian investors in such marketplaces?

We do not have all the answers to this but we feel the following could be fleshed out and added to :

1. there is a role for global hive mind to be brought into the regulatory tent, the hive mind can call out scams;
2. jurisdictionally based regulators need move from a 'innocent until proven guilty...catch and punish' approach to a 'identify and call out' approach, one where regulators pro-actively call out potential scams before too much damaged is caused;
3. there is an enormous opportunity for financial planners (...if they are allowed!) to educate and advise on the whole gambit of crypto assets....we need to solve the financial planning industry;
4. the government can play a role in increasing financial literacy; and
5. the means test could be replaced with a financial literacy test.

Also, the market will to a certain extent take care of itself. Already the better crypto asset exchanges have a good self imposed filter which weeds out blatant scams. The better exchanges build reputations and more market shares. It is in their best interests to offer only reputable projects in their marketplace.

b) Are there any kinds of crypto asset services that ought to be specifically defined as financial products? Why?

Q9) Some regulatory frameworks in other jurisdictions have placed restrictions on the issuance of intermediated crypto assets to specific public crypto networks. What (if any) are appropriate measures for assessing the suitability of a specific public crypto network to host wrapped real world assets?

We are not aware of these jurisdictions unless the paper refers to China or another totalitarian country.

It is not recommended that regulators try and pick winners and losers in this space and restrictions or prohibitions are likely ineffective in their objective and counter productive to innovation.

Q10) Intermediated crypto assets involve crypto tokens linked to intangible property or other arrangements. Should there be limits, restrictions or frictions on the investment by consumers in relation to any arrangements not covered already by the financial services framework? Why?

Creating limits or frictions on investments by consumers is a very bad idea.

As set out earlier. Any form of financial discrimination or consumer protection by exclusion systems have no place in Australia.

Imagine going into a pub and saying, here are a whole bunch of investments that you cannot participate in because you are not wealthy enough. But you are excluded for your own protection.

More than just the moral imperative of providing equal opportunity to everyone in a non-discriminatory manner, the benefit of an open investment environment is that novel methods of funding public goods are being developed.

Take medical research for example. One project, [VitaDAO](#) is using a DAO to fund research grants into longevity. There are many more and not just medical research. There is a lot of research going into alternative incentive structures for funding public goods, many of the experiments involve issuance of crypto assets. [See here](#) an excellent explanation of how to fund public goods using NFTs.

Q11) Some jurisdictions have implemented regulatory frameworks that address the marketing and promotion of products within the crypto ecosystem (including network tokens and public smart contracts). Would a similar solution be suitable for Australia? If so, how might this be implemented?

The existing laws on marketing and promotion in the Corporations Act 2001 and the Australian Consumer Law already offer room for prosecution of crypto related questionable marketing and promotion activity. Before considering additional and specific laws for crypto there should be a review of the effectiveness of existing laws.

Q12) Smart contracts are commonly developed as 'free open-source software'. They are often published and republished by entities other than their original authors.

a) What are the regulatory and policy levers available to encourage the development of smart contracts that comply with existing regulatory frameworks?

b) What are the regulatory and policy levers available to ensure smart contract applications comply with existing regulatory frameworks?

The risk with open source smart contracts is that someone will find a vulnerability in the code and hack the funds or otherwise mess up the contract. This has happened a lot since the introduction of the world's first smart contract crypto network was launched on 30 July 2015.

We recognise that smart contracts have only been a thing for 8 years. A lot has been learnt and there are a growing number of practices which improves their security. Some of the risks are mitigated by :

1. deploying the contracts firstly in a test net environment;
2. undertaking external code audits;
3. putting up bounties; and
4. smart contract insurance is now available.

Ultimately open source systems are battle hardened and more robust than closed loop proprietary systems.

There is another aspect to this question and that is...what about smart contracts deliberately written to defraud people. Say for example a pyramid scheme operated by an autonomous smart contract deployed on the ethereum blockchain.

This is possible, the code would work as expected and people would be automatically defrauded. This is straight up criminal activity, but not by ethereum, it is by the people who wrote and deployed the contract. The cyber nature of the activity makes it more difficult to catch and convict the perpetrators but not impossible. In fact this has already been done, [see here](#) a press release from the US SEC regarding just such a scheme.

Q13) Some smart contract applications assist users to connect to smart contracts that implement a pawn-broker style of collateralised lending (i.e. only recourse in the event of default is the collateral).

a) What are the key risk differences between smart-contract and conventional pawn-broker lending?

b) Is there quantifiable data on the consumer outcomes in conventional pawn-broker lending compared with user outcomes for analogous services provided through smart contract applications?

The pawn-broker lending model is typically low risk for the lender, but higher risk for the borrower. This is because the lender has possession of and (in the event of a breach in terms) the right to sell the collateral without recourse to the borrower. Pawn-broker lending arrangements are typically for small loans with high interest rates and the money borrowed can be used for any purpose.

Property mortgage backed loans are somewhat higher risk to the lender because the collateral is not liquid and typically the lender has recourse to the other assets of the borrower and in any case a 'waterfall' of events that have to happen before foreclosure can proceed. Loan amounts can be very significant compared to the overall asset position of the borrower. The loan must be used for the purpose set out in the loan agreement.

Margin loans backed by equities are still higher risk for lenders as equities, although more liquid than real property, have a higher volatility rating. Margin loans also have a waterfall whereby as the margin decreases the lender typically makes a margin call to the borrower and offers some choices. Loan amount can also be significant, although typically not relative to the overall asset position of the borrower.

Loans backed by crypto assets are similar to pawn-broker type loans in that they can be used for anything and the lender (the protocol in this case) will simply sell the collateral once the conditions are met. There is no need to provide a waterfall or to contact the borrower to negotiate repayment terms or delays etc. (although all this is possible via an automated system). Where they are not similar is in the amounts...the amount of borrowing is limited only to the amount of collateral the borrower is able to put up.

Is there a moral risk here? It is quite possible to use a second mortgage or mortgage offset account to leverage up a crypto position. If that position was

liquidated, the protocol would be repaid, but there may not be sufficient funds to repay the second mortgage or other source of funds. The issue here is not the crypto protocol, the issue is with the party who lent the fiat in the first place.

There is another side to the moral position. Pawn-brokers seldom have to write off a loan. Crypto lending protocols never write off loans as repayment is a certainty. Bank and finance companies on the other hand share the cost of writing off loans via reduced profits to shareholders and in extreme cases a taxpayer funded bank bailouts. There is a view that the borrower of the funds should be the only party taking the risk. Under this view, pushing the risk to taxpayers or even shareholders is not morally acceptable.

Protocols for all the finance verbs/nouns have already been deployed. Lending, Borrowing, Converting, Swapping, Trading, Derivatives, Synthetics, Insurance. These are services/products accessible by anyone with a smartphone connection and some crypto assets in their wallet whether they have just one dollar or 10 billion the rules and procedures are the same. The democratisation of finance via these platforms offer the opportunity for reduction of wealth inequality and increased financial inclusion. To be clear, there are risks, but the risks are limited just to those who use the protocol. There is little or no collateral damage in the event of an individual blowing up their capital and certainly there are no centralised systemic risks as there is when centralised financial systems experience shocks.

There is a philosophical question, beyond my capability to answer, of whether the State should interfere with an individual's ability to make their own decisions relative to their financial position. There is also a question of whether the State could prohibit or limit the use of these protocols even if they wanted to.

Q14) Some smart contract applications assist users to connect to automated market makers (AMM).

a) What are the key differences in risk between using an AMM and using the services of a crypto asset exchange?

b) Is there quantifiable data on consumer outcomes in trading on conventional crypto asset exchanges compared with user outcomes in trading on AMMs?

AMM's, atomic swaps, decentralised exchanges are all new concepts and business models enabled by this new clearing and settlement technology. As new models they are evolving every day and it is hard even for people in the industry like us to stay up-to-date with the latest innovation.

The key risks with any of these protocols is code risk. The key risk with centralised exchanges is malfeasance, fraud or incompetence by the operator.

Ultimately, open source code has less risk than centralised human based trust models. The direction is clear, more and more financial transactions will be conducted using decentralised protocols as they improve over time. They are faster, safer, cheaper and more flexible. There are no barriers to entry, they are immediately global in nature and infinitely scalable.

This said, these protocols push all aspects of financial risk management to the users. The users assume custodial risk, 'fat finger trade' risk, financial analysis risk and financial planning risk. Not everyone has the time, interest or aptitude to know how to manage these risks and work with the protocols. This is where we see what we call the 'back to the future' moment where we see service providers popping up to provide custody, DeFi services and staking as a service. These service providers, who once again are dealing with other people's money, need to be regulated. The objective of the regulation should be as we have outlined earlier, but the way of achieving those objectives will be very different from the current methodology. As we keep harping on about...this technology is settlement and clearance technology not asset creation technology.

Closing Comments

When thinking about the best way to bring regulation to the emerging crypto asset marketplace it is helpful to look at the issue through the Clearing and Settlement lens. By doing so it becomes quite obvious that blockchains are a settlement layer technology. Existing laws are adequate (not perfect by any means) to regulate markets dealing with all types of assets, an asset in a digital wrapper is not a different type of asset, we do not need new laws for the same type of asset, but we do need new regulatory guidelines that can facilitate the adoption of the DADS model of asset sales and trading for both financial and non-financial products.

Once the disintermediated settlement layer process is adopted (which ultimately is inevitable), regulators and market operators can concentrate on improving the filters they have in place to screen out bad or undesirable issuers/participants from the various marketplaces. They can also concentrate on improving the quality and level of access to financial advice, which will be needed more than ever as retail level asset ownership and trading opportunities increase. Some exchanges will develop a reputation for setting low standards, others will develop very high standards. There will be healthy competition between operators and this in itself will improve consumer protection while also increasing financial inclusion.

[End]