

# CRACKING THE CODE

THE OUTLOOK FOR DIGITAL SECURITIES

FEBRUARY 2022

QUINLAN  
& ASSOCIATES

# TABLE OF CONTENTS

SECTION	TITLE	PAGE
<b>Section 1</b>	The Digital Assets Universe	2
<b>Section 2</b>	Regulatory Development	12
<b>Section 3</b>	Security Token	19
<b>Section 4</b>	Security Token Exchanges	27
<b>Section 5</b>	Potential Winners and Losers	33
<b>Section 6</b>	How Can We Help?	39






## **SECTION 1**

## THE DIGITAL ASSETS UNIVERSE

# THE DIGITAL ASSETS UNIVERSE

While considered by many to be extremely complex, the entire digital assets universe, as it stands today, can be broadly broken down into five key categories







	 <b>NATIVE CRYPTOCURRENCIES</b> Cryptocurrencies that are unique and native to a blockchain network and protocol	 <b>FIAT-BASED CRYPTOCURRENCIES</b> Fiat, or representation of fiat, that is recorded and used on a blockchain	 <b>UTILITY TOKENS</b> Crypto assets that can be coded to provide holders with access rights and/or benefits	 <b>NON-FUNGIBLE ASSET TOKENS</b> Ownership proof of non-fungible assets that are recorded and traded on a blockchain	 <b>SECURITY TOKENS</b> Traditional capital market vehicles that are recorded and traded on a blockchain
<b>Functional Requirement</b>					
Information Keeping	✓	✓	✓	✓	✓
Programmability	-	-	✓	✓	✓
<b>Traditional Peers</b>					
Currencies	✓	✓	-	✗	✗
Collectibles	✗	✗	✗	✓	✗
Real Estates	✗	✗	✗	✓	✓
Derivatives Contracts	✗	-	✗	✗	✓
Debt Securities	✗	-	✗	✗	✓
Equity Securities	✗	✗	✗	✗	✓
Funds / Trusts	✗	✗	✗	✗	✓

✓ Applicable   
 - Dependent   
 ✗ Inapplicable

# CRYPTOCURRENCIES





The are two overarching categories of cryptocurrencies: (1) native; and (2) fiat-based, differentiated based on whether they are collateralised by fiat currency or not

	NATIVE CRYPTOCURRENCIES		FIAT-BASED CRYPTOCURRENCIES	
	 <b>PUBLIC NATIVE CRYPTOCURRENCIES</b> Blockchain endogenous assets issued on a public blockchain and given through a block reward	 <b>PRIVATE NATIVE CRYPTOCURRENCIES</b> Blockchain endogenous assets issued and circulated on a private blockchain for internal operational use	 <b>CENTRAL BANK DIGITAL CURRENCIES</b> Fiat that is issued directly on a blockchain by central banks that have fiat-printing capabilities	 <b>TETHERED STABLECOINS</b> Representations of fiat circulated on a blockchain issued by a private trust entity that holds the reserve
<b>Issuing Entity</b>	Not Applicable	Corporation	Central Bank	Corporation
<b>Money Characteristics</b>				
Unit of Account	✓	✓	✓	✓
Medium of Exchange	✓	✓	✓	✓
Store of Value	✗	-	✓	-
<b>Collateralisation</b>				
Asset-backed	✗	✗	-	✓
<b>Blockchain Native</b>				
Endogenous	✓	✓	-	✗
Exogenous	✗	✗	✓	✓

✓ Applicable
 - Dependent
 ✗ Inapplicable

## OTHER DIGITAL ASSETS (1/3) – OVERVIEW




There are certain other digital assets that do not fall under the category of cryptocurrency or security token, namely: (1) non-fungible asset tokens and (2) utility tokens

	NON-FUNGIBLE ASSET TOKENS		UTILITY TOKENS	
	 <b>REAL ESTATE TOKENS</b> Tokenised proof of ownership with a potential commercial arrangement for residential / commercial real estate	 <b>COLLECTIBLE TOKENS</b> Blockchain recorded proof of ownership of physical or non-physical collectibles (e.g. artwork, antiques, etc)	 <b>PLATFORM ACCESS TOKENS</b> Tokens that act as a medium of exchange to purchase a product or service available on the blockchain platform	 <b>BENEFITS TOKENS</b> Tokens that provide certain benefits to holders under specified conditions set by the issuer
<b>Collateralisation</b>				
Asset-backed	✓	-	*	*
<b>Blockchain Native</b>				
Endogenous	*	-	✓	✓
Exogenous	✓	-	*	*

✓ Applicable   
 - Dependent   
 \* Inapplicable

## OTHER DIGITAL ASSETS (2/3) – NFT

Despite the widespread use of the term ‘NFT’, it is somewhat misleading, as the non-fungible characteristic is applicable at the asset-level, but not necessarily the token-level

	STANDALONE COLLECTIBLES		NON-STANDALONE COLLECTIBLES
			
	<b>PHYSICAL COLLECTIBLE TOKENS</b>		<b>DIGITAL COLLECTIBLE TOKENS</b>
	Ownership proof of a physical collectible that is recorded on a blockchain		Ownership proof of a digital form of collectible whose existence is dependent on the file itself
			
			<b>PLATFORM-DEPENDENT TOKENS</b>
			Ownership proof of a digital form of collectible whose existence is dependent on the issuing platform
<b>Blockchain Native</b>			
Endogenous	*	✓	*
Exogenous	✓	*	✓
<b>Purchase Implication</b>			
Proof of Uniqueness	✓	✓	✓
Proof of Ownership	✓	-	-
Production Rights	-	-	-
<b>Example</b>	Sexy Robot Series		NBA Top Shot
			Twitter NFT

✓ Applicable   
 - Dependent   
 \* Inapplicable

## OTHER DIGITAL ASSETS (3/3) – UTILITY TOKEN

Huobi Token is an example of both a platform access as well as a benefits token, which makes it unique and difficult to draw a parallel comparison with traditional peers



User Classification (Level)	Trade Volume (30-day Average)	Huobi Token (Holding)	Maker Fee (Tiered Pricing)	Taker Fee (Tiered Pricing)
<b>Basic Level 1 – Base Case</b>	-	-	0.2000%	0.2000%
<b>Pro Level 1</b>	≥ 1,000 BTC	≥ 2,000 HT	0.0362%	0.0462%
<b>Pro Level 2</b>	≥ 1,500 BTC	≥ 2,000 HT	0.0294%	0.0420%
<b>Pro Level 3</b>	≥ 5,000 BTC	≥ 2,000 HT	0.0294%	0.0378%
<b>Pro Level 4</b>	≥ 10,000 BTC	≥ 2,000 HT	0.0252%	0.0336%
<b>Pro Level 5</b>	≥ 15,000 BTC	≥ 2,000 HT	0.0224%	0.0308%
<b>Pro Level 6</b>	≥ 20,000 BTC	≥ 2,000 HT	0.0210%	0.0294%
<b>Pro Level 7</b>	≥ 40,000 BTC	≥ 2,000 HT	0.0168%	0.0252%
<b>Pro Level 8</b>	≥ 80,000 BTC	≥ 2,000 HT	0.0126%	0.0210%
<b>Pro Level 9</b>	≥ 150,000 BTC	≥ 2,000 HT	0.0097%	0.0193%

⏟

**User Classification**

⏟

**Benefits Condition**

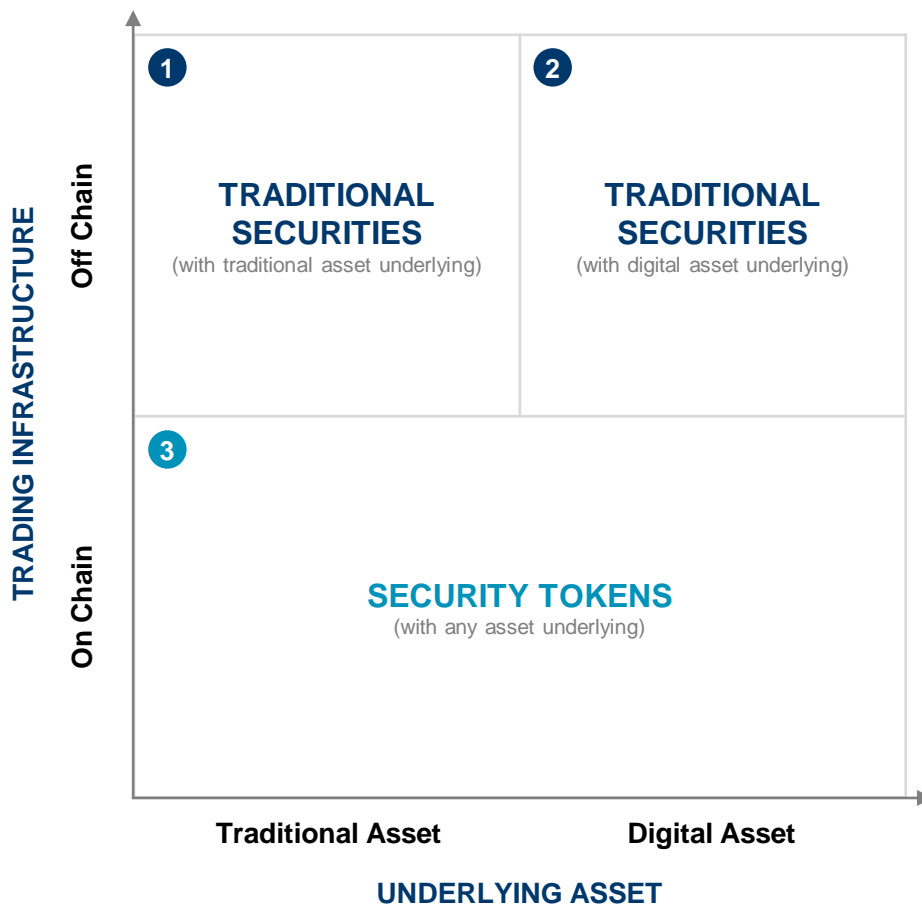
⏟

**Benefits Result**



## SECURITY TOKENS (1/3) – DEFINITION

A security token is simply a tokenised version of a financial security, i.e., a traditional capital markets security that is recorded and traded on a blockchain



### Real World Examples

1

- Equity Securities = Company Stocks
- Debt Securities = Corporate Bonds
- Funds / Trusts = ETFs, REITs, etc.
- Derivatives = Futures, Bonds, Swaps, etc.

2

- Equity Securities = Not Applicable
- Debt Securities = Bitcoin Lending Products
- Funds / Trusts = Crypto ETF
- Derivatives = Perpetual Futures (By BitMEX)





3

- Equity Securities = tZERO, INX Token
- Debt Securities = DBS Digital Bond
- Funds / Trusts = PRTS (By Protos)
- Derivatives = Perpetual Options (By Antimatter)

■ Traditional Securities ■ Security Tokens

## SECURITY TOKENS (2/3) – CATEGORIES

There are four broad categories of security tokens: (1) equity tokens; (2) debt tokens; (3) fund / trust tokens; and (4) derivatives tokens

	TRADITIONAL INVESTMENT SECURITY TOKENS		ALTERNATIVE INVESTMENT SECURITY TOKENS	
	 <b>EQUITY TOKENS</b> Ownership certificates that provide investors with certain rights associated with the company	 <b>DEBT TOKENS</b> Principal and/or interest bearing investment instruments (e.g. bonds, notes, credits, warrants)	 <b>FUND / TRUST TOKENS</b> Collective investment vehicles that hold market-linked assets based on an investment mandate	 <b>DERIVATIVE TOKENS</b> Investment contracts that derive value from an underlying asset or group of assets (e.g. an index)
<b>Collateralisation</b>				
Asset-backed	✓	-	✓	*
<b>Blockchain Native</b>				
Endogenous	*	✓	*	✓
Exogenous	✓	✓	✓	*

✓ Applicable  
 - Dependent  
 \* Inapplicable

## SECURITY TOKENS (3/3) – CASE STUDY

The TZROP security token is an equity token that was publicly offered in August 2019 and pays 10% of the issuer’s adjusted gross revenue to token holders on a quarterly basis

### TZROP

Description



tZERO is a distributed ledger platform launched by the internet retail company Overstock, that has been designated as an alternative trading system (“ATS”) and is regulated by the Securities and Exchange Commission (“SEC”) and Financial Industry Regulatory Authority (“FINRA”).

1

#### PRIVATE PLACEMENT

TZROP preferred equity security tokens were issued in a private placement in August 2018

2

#### ACCREDITED INVESTORS

The security tokens were made available to accredited investors starting from January 2019

3

#### RETAIL (NON-ACCREDITED) INVESTORS

In August 2019, the security tokens were made available to be resold to non-accredited investors as well

### Token Benefits

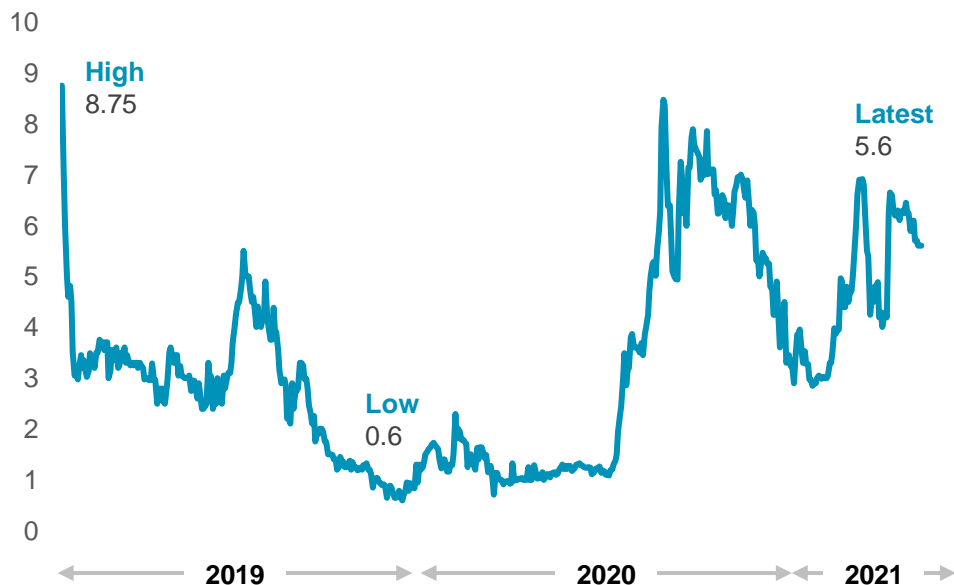


#### Revenue Sharing

Quarterly dividend worth 10% of adjusted gross revenue

### TZROP Price

Jan 2019 – Apr 2021, USD



↑  
DETAILS  
↓



#### Security Type

Revenue Share Token



#### Token Protocol

ERC-20



#### Issuance Platform

tZERO



#### Soft Cap

USD 50 million

Note data were taken as of 12 April 2021

Source: businesswire, Security Token Group, Security Token Market, Quinlan & Associates analysis

## PURCHASE IMPLICATIONS ACROSS DIGITAL ASSETS

There are two overarching factors that must be considered when investing in digital assets: (1) financial (i.e. return-related expectations) and (2) legal (i.e. investor rights, etc.)

	FINANCIAL IMPLICATIONS		LEGAL IMPLICATIONS				
	Financial Return	Direct Asset Exposure	Tax Obligations	Statutory Rights	Investor Protection	Issuer Obligations	Legal Tender
<b>Cryptocurrency</b>							
Public Native Cryptocurrencies	✓	✓	-	*	-	*	*
Private Native Cryptocurrencies	-	✓	-	*	-	-	*
Tethered Stablecoins	-	*	-	-	-	-	*
Central Bank Digital Currencies	-	✓	✓	✓	✓	✓	✓
<b>Other Digital Assets</b>							
Real Estate Tokens	✓	✓	✓	✓	✓	✓	*
Collectible Tokens	✓	✓	-	-	-	-	*
Platform Access Tokens	✓	✓	-	*	*	*	*
Benefits Tokens	✓	✓	-	*	*	*	*
<b>Security Token</b>							
Equity Tokens	✓	✓	✓	✓	✓	✓	*
Debt Tokens	✓	-	✓	✓	✓	✓	*
Fund / Trust Tokens	✓	*	✓	✓	✓	✓	*
Derivatives Tokens	✓	*	✓	✓	✓	✓	*

Key Gap
 ✓ Applicable
 - Dependent
 \* Inapplicable

## **SECTION 2**

## REGULATORY DEVELOPMENT

# REGULATORY ARBITRAGE WINDOW




We expect the regulatory arbitrage window to continue to narrow in coming years, albeit to varying degrees, depending on the jurisdiction and specific digital asset in question

Type of Digital Assets	Regulatory Scrutiny	Room for Arbitrage	Description
<b>Native Cryptocurrency</b>			
Public Native Cryptos			<ul style="list-style-type: none"> <li>Public cryptocurrency will be closely regulated as an alternative investment vehicle</li> </ul>
Private Native Cryptos			<ul style="list-style-type: none"> <li>Private cryptocurrency is likely to be considered as a security if offered to the public</li> </ul>
<b>Fiat-based Cryptocurrency</b>			
CBDCs			<ul style="list-style-type: none"> <li>Relevant authorities will closely monitor the circulation and use case of CBDCs</li> </ul>
Tethered Stablecoins			<ul style="list-style-type: none"> <li>Unauthorised stablecoins will likely be clamped down, given their challenge to fiat</li> </ul>
<b>Non-fungible Asset Token</b>			
Real Estate Tokens			<ul style="list-style-type: none"> <li>Each jurisdiction will define the legal implications of information stored and traded on smart contracts, which will be closely monitor to prevent any fraudulent activities</li> </ul>
Collectible Tokens			
<b>Utility Token</b>			
Access Tokens			<ul style="list-style-type: none"> <li>Token with security-like benefits (e.g. voting, profit sharing, investment returns, etc.) will likely be regulated under national securities laws</li> </ul>
Benefits Tokens			
<b>Security Token</b>			
Equity Tokens			<ul style="list-style-type: none"> <li>Security token will be treated and regulated on the same basis as traditional securities under each jurisdiction's existing securities laws</li> </ul>
Debt Tokens			
Fund / Trust Tokens			
Derivative Tokens			

● Current Level    
 ● Future Level    
 ✓ Applicable    
 ✘ Inapplicable

## NOTABLE CONTROVERSIES (1/2) – PRIVATE NATIVE CRYPTO

There is an ongoing lawsuit (as of 5 October 2021) between Ripple Labs and the SEC regarding whether XRP should be considered as a security, based on the Howey Test

	 <b>bitcoin</b>	 <b>ethereum</b>	<b>J.P.Morgan</b>	 <b>ripple</b>
<b>Blockchain Technology</b>				
Public Blockchain	✓	✓	✗	✗
Private Blockchain	✗	✗	✓	✓
<b>Howey Test (US SEC)</b>				
Investment Vehicle	✓	✓	✗	✓
Expectation of Profit	✓	✓	✗	✓
Common Enterprise	✗	✗	✓	✓
Effort of Others	✗	✗	✗	✓
Test Result (Is it a security?)	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>YES</b>

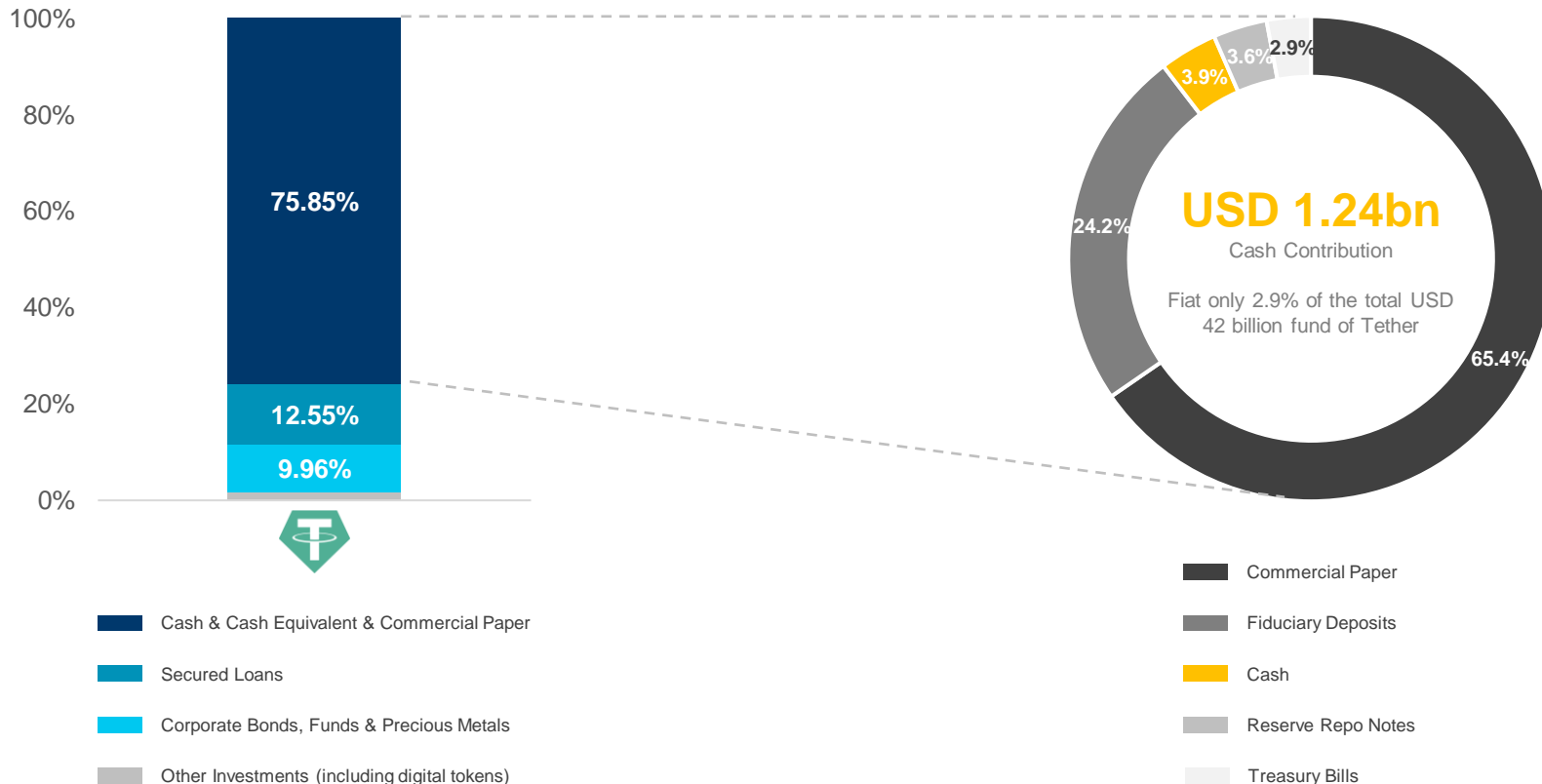
  Highlight    
 ✓ Applicable    
 ✗ Inapplicable

## NOTABLE CONTROVERSIES (2/2) – TETHERED STABLECOIN

Although many perceive USDT to be 1:1 tethered to USD fiat, according to Tether's first reserve breakdown report cash accounted for only 2.9% of total reserves

### Tether Reserve Breakdown

March 2021



Note: Fiat refers to cash

Source: Tether, Quinlan & Associates analysis



## NOTABLE DEVELOPMENTS (1/3) – CRYPTOCURRENCIES

In Hong Kong, the Securities and Futures Commission (“SFC”) has highlighted its concerns with respect to investing in public native cryptocurrencies



### ENHANCE AML / CTF

The non-traceability and anonymity of transactions may aid money laundering and terrorist financing



### REDUCE MARKET ABUSE

With no proper regulatory oversight, there have been many cases of traditionally unacceptable market practices



### PROTECT INVESTORS

There is no legal framework to protect Hong Kong retail investors involved in virtual asset trading

Theme	Description
Licensing	• <b>Platforms are now required to apply and acquire HKSF Type 1 and Type 7 licences</b>
Regulatory Sandbox	• Licensed platforms will be placed under the SFC’s regulatory sandbox
Supervision	• All licensed virtual asset trading platforms will now fall under the SFC’s supervision
Regulatory Reporting	• A monthly business report must be submitted to the SFC (second week of each month)
Audit Requirements	• Exchanges must hire an independent firm to submit an annual review report to the SFC
Due Diligence	• Stringent due diligence of assets must be conducted before their listing and trading
Market Making	• Market-making activities for liquidity should be conducted by an independent third-party
Capital Requirements	• Exchanges must possess liquid assets worth at least 12 months of operating expenses
Cold Wallet	• At least 98% of assets under custody must be kept in cold wallets and partially insured
Hot Wallet	• The maximum 2% of assets that can be kept in hot wallets must be fully insured
Investors	• <b>Only professional investors (“PIs”) (Net worth &gt; HKD 8m) are allowed to trade virtual assets</b>
Trading Limit	• Each and every client account must be assigned a trading limit and position limit
Trade Settlement	• Institutional, professional clients can be allowed to make intraday settlements at best



## NOTABLE DEVELOPMENTS (2/3) – OVERALL DIGITAL ASSETS

The US SEC recently announced the creation of a comprehensive legal / regulatory framework across different types of digital assets

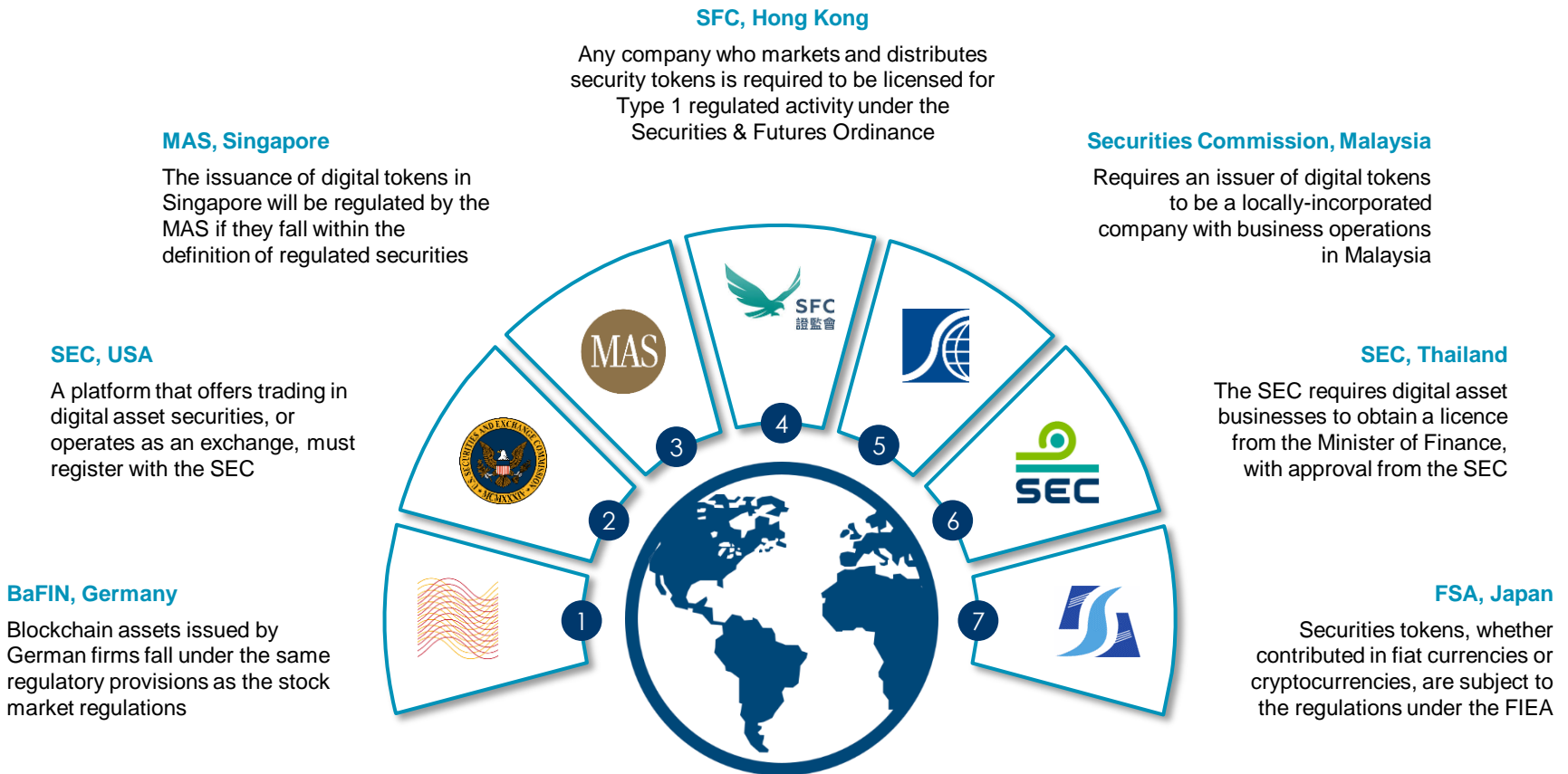
KEY TAKEAWAY	DETAILS
SEC / CFTC will intervene	<ul style="list-style-type: none"> <li>Create statutory definitions for digital assets and digital asset securities and provide the SEC with authority over digital asset securities and the CFTC with authority over digital assets;</li> </ul>
SEC / CFTC will create rules together	<ul style="list-style-type: none"> <li>Provide legal certainty as to the regulatory status for the top 90% of the digital asset market (by market capitalization and trading volume) through a joint SEC / CFTC rulemaking;</li> </ul>
Digital assets must be registered	<ul style="list-style-type: none"> <li>Require digital asset transactions that are not recorded on the publicly distributed ledger to be reported to a registered Digital Asset Trade Repository within 24 hours to minimize the potential for fraud and promote transparency;</li> </ul>
Digital assets are subject to BSA	<ul style="list-style-type: none"> <li>Explicitly add digital assets and digital asset securities to the statutory definition of “monetary instruments,” under the BSA, formalizing the regulatory requirements for digital assets and digital asset securities to comply with anti-money laundering, recordkeeping, and reporting requirements;</li> </ul>
CBDC and stablecoin are not the same	<ul style="list-style-type: none"> <li>Provide the Federal Reserve with explicit authority to issue a digital version of the U.S. Dollar, clarify that digital assets, digital asset securities and fiat based stablecoins are not U.S. legal tender, and provide the U.S. Treasury Secretary with authority to permit or prohibit US Dollar and other fiat-based stablecoins;</li> </ul>
Digital assets are new type of assets	<ul style="list-style-type: none"> <li>Direct the FDIC, NCUA and SIPC to issue consumer advisories on “non coverage” of digital assets or digital asset securities to ensure that consumers are aware that they are not insured or protected in the same way as bank deposits or securities; and,</li> </ul>
Proper licensing regime is coming soon	<ul style="list-style-type: none"> <li>Require legislative recommendations from FinCEN, SEC and CFTC to provide clarity on dividing lines between who must register as a money services business versus who must register as a securities or commodities exchange.</li> </ul>

Note: The Securities and Exchange Commission (“SEC”); Commodity Futures Trading Commission (“CFTC”); Bank Secrecy Act (“BSA”); Central Bank Digital Currency (“CBDC”) Federal Deposit Insurance Corporation (“FDIC”); National Credit Union Administration (“NCUA”); Securities Investor Protection Corporation (“SIPC”); Financial Crimes Enforcement Network (“FinCEN”)

Source: Digital Asset Market Structure and Investor Protection Act, Quinlan & Associates analysis

## NOTABLE DEVELOPMENTS (3/3) – SECURITY TOKENS

When security token offering (“STO”) was first introduced, regulators across the world quickly clarified that security tokens fell under the definition of regulated securities



## SECTION 3

## SECURITY TOKEN

## LONG-TERM OUTLOOK

With regulatory scrutiny of digital assets on the rise and growing institutional interest, we expect security tokens to be a key winner in the digital assets space

	Digital Asset	Description	Regulatory Outlook	Adoption Outlook	Overall Outlook
CRYPTO CURRENCY	Public Native Cryptocurrencies	Cryptocurrencies like BTC, etc. will remain attractive as alternative investment avenues	→	↑	BULLISH
	Private Native Cryptocurrencies	Use cases will likely be limited to enhancing internal business operations	→	→	NEUTRAL
	Tethered Stablecoins	Stablecoins will likely fall out of favour and be replaced by CBDCs	↓	↓	BEARISH
	Central Bank Digital Currencies	We foresee growing adoption of CBDCs by central banks to support digital payments	↑	↑	BULLISH
OTHER DIGITAL ASSETS	Benefits Tokens	Unregulated tokens with security-like benefits (e.g. dividends) will see a crackdown	↓	↓	BEARISH
	Platform Access Tokens	Value proposition of pure platform access tokens will decline with adoption of CBDCs	→	↓	BEARISH
	Collectible Tokens	Demand for digital collectibles (e.g. digital art, etc.) is expected to surge significantly	→	↑	BULLISH
	Real Estate Tokens	With limited use cases, real estate tokens are unlikely to be widely adopted	→	→	NEUTRAL
SECURITY TOKEN	Equity Tokens	Large-scale institutional adoption is expected after successful market testing	→	↑	BULLISH
	Debt Tokens	Large-scale institutional adoption is expected after successful market testing	→	↑	BULLISH
	Fund / Trust Tokens	Large-scale institutional adoption is expected after successful market testing	→	↑	BULLISH
	Derivatives Tokens	Large-scale institutional adoption is expected after successful market testing	→	↑	BULLISH

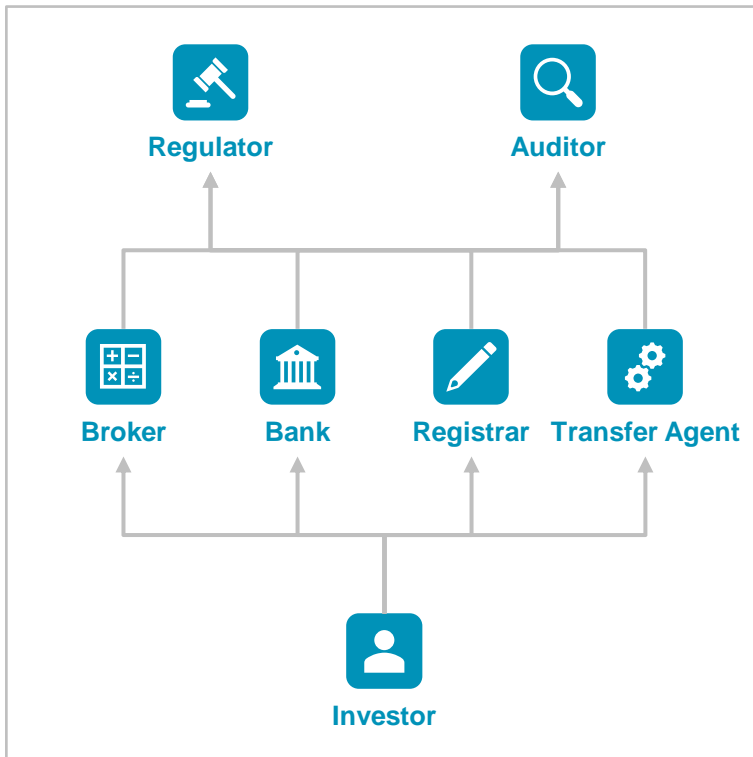
Security token is expected to emerge as a key winner    Favourable    ↑    →    ↓    Unfavourable

# TRANSPARENCY & SECURITY – STREAMLINED REPORTING PROCESS

A trustworthy ledger can help minimise time and resources spent on data reconciliation, making the regulatory reporting process much more efficient for all market participants

## Compliance Process

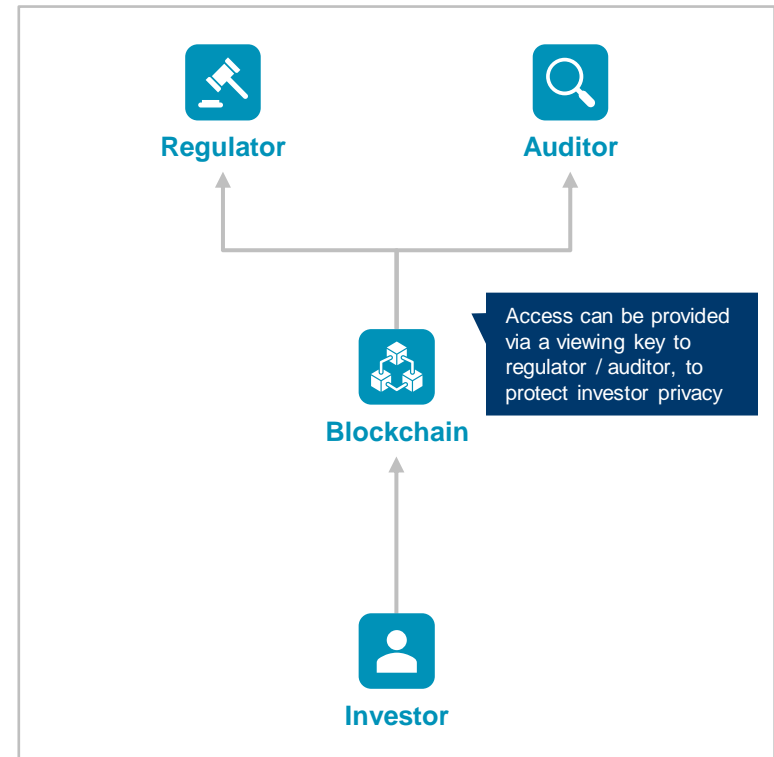
Traditional Securities



*Investors may invest in shares via different intermediaries with fragmented records; information from multiple third-parties needs to be collected, validated, and reconciled for compliance and reporting purposes*

## Compliance Process

Security Tokens



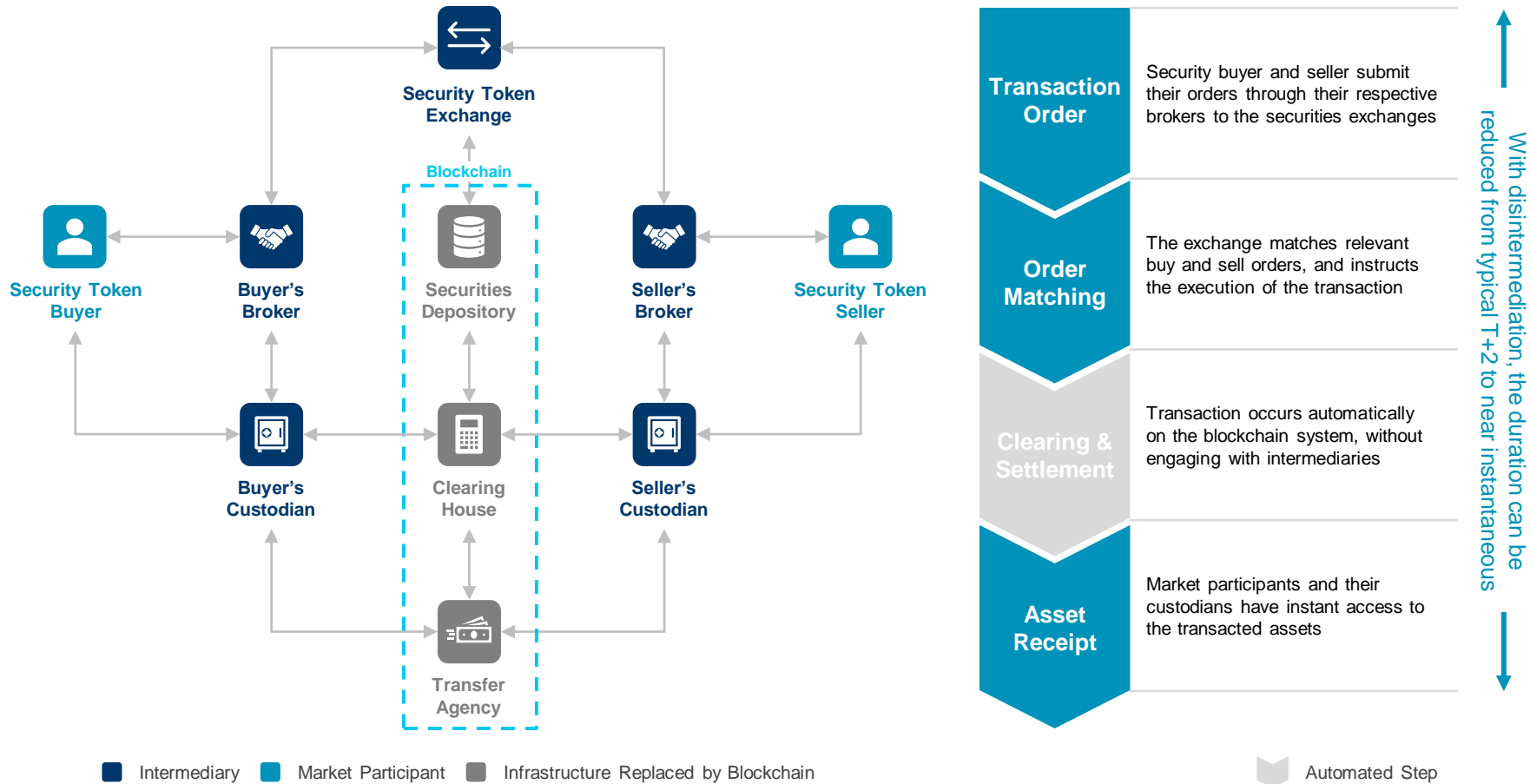
*All holdings are recorded on the blockchain in an immutable manner, creating a single source of truth which can be accessed by a regulator / auditor via a viewing key (for privacy and confidentiality purposes)*

# PROGRAMMABILITY – SECURITY TOKEN TRADING LIFECYCLE

Blockchain technology has the capacity to replace infrastructure and intermediaries, speeding up the clearing and settlement processes, from > T+1 to near instant

## Speed

Clearing & Settlement



## DIVISIBILITY – FROM A SECURITIES PERSPECTIVE

Security tokens can be fractionalised to as small as 0.000000000000000001 shares without having to go through sophisticated and laborious processes, such as a stock split

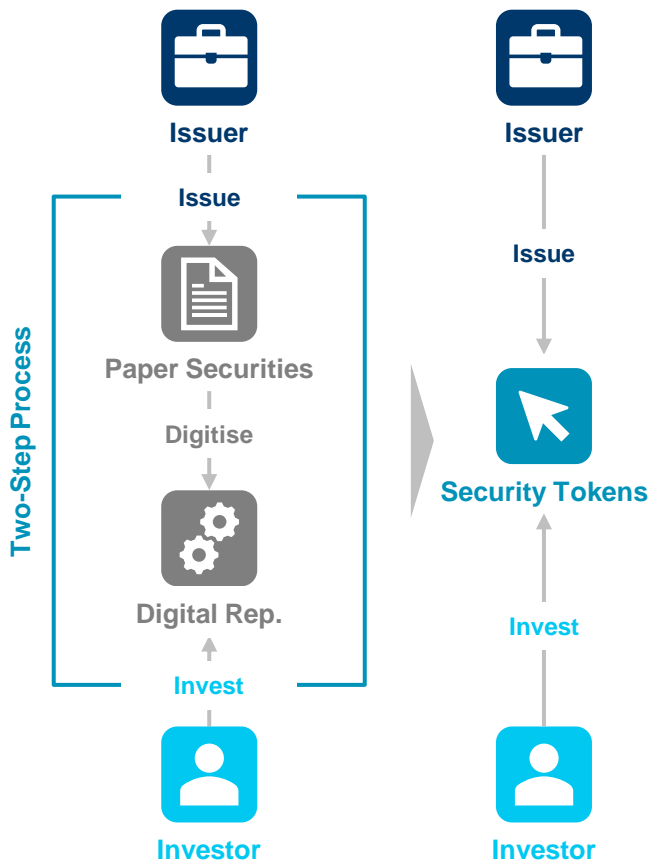





Denomination (Breakdown Unit)	Unit (in Wei)	ETH Price (in USD)	BRK.A Share Price (in USD)
<b>Wei</b>	1	0.0000000000000002	0.00000000000049
<b>Kwei</b>	1,000	0.00000000000231	0.00000000492
<b>Mwei</b>	1,000,000	0.00000002301	0.0000049197
<b>Gwei</b>	1,000,000,000	0.000023079	0.000491962
<b>Twei</b>	1,000,000,000,000	0.0023079	0.4919621
<b>Pwei</b>	1,000,000,000,000,000	2.3	492.0
<b>Ether</b>	1,000,000,000,000,000,000	2,307.9	491,962.1



# DEMATERIALIZATION OF PAPER-BASED SECURITIES

With many financial markets promoting dematerialisation, we see blockchain-based tokenisation as an ideal option for implementing such efforts in coming years



Market	Target Date	Regulation / Initiative
	March 2019	<b>Securities and Exchange Board of India</b> SEBI announced that no transaction or transfer of securities of a listed company can occur in physical certificate form, rendering physical securities illiquid
	January 2025	<b>European Securities and Markets Authority</b> The Central Securities Depositories Regulation (“CSDR”) mandates all issuances after January 2023 to be digital and all securities to be dematerialised by January 2025
	January 2025	<b>Financial Conduct Authority</b> Despite the U.K. heaving left the EU, it has been preparing for the implementation of CSDR and intends to continue following the implementation of dematerialisation

## KEY DIFFERENCES IN SECURITIES LIFECYCLE

With their potential to enhance many processes in the traditional securities lifecycle, security tokens are expected to experience a surge in market interest and adoption



### TRADITIONAL SECURITIES

A new contract needs to be drafted with the legal and compliance team whenever counterparties want to conduct a customised trade

Depending on the transaction condition, additional resources may be deployed to monitor movements of the underlying

If condition is met, counterparties have to initiate a transaction, which typically involves a third-party intermediary / clearinghouse

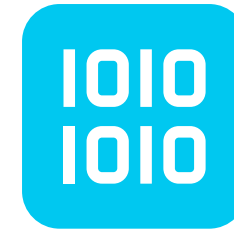
Asset / security transactions are cleared and settled via a range of financial intermediaries, which takes time and may be costly

Contract  
Drafting

Condition  
Monitoring

Security  
Transaction

Clearing &  
Settlement



### SECURITY TOKENS

Smart contract generators provide audited programs, and compliant contracts can be codified in a relatively intuitive manner

The smart contract automatically tracks underlying movement and can be extended to the movements of a basket of underlyings

Once condition is met, the smart contract automatically executes the transaction as programmed, without further instructions

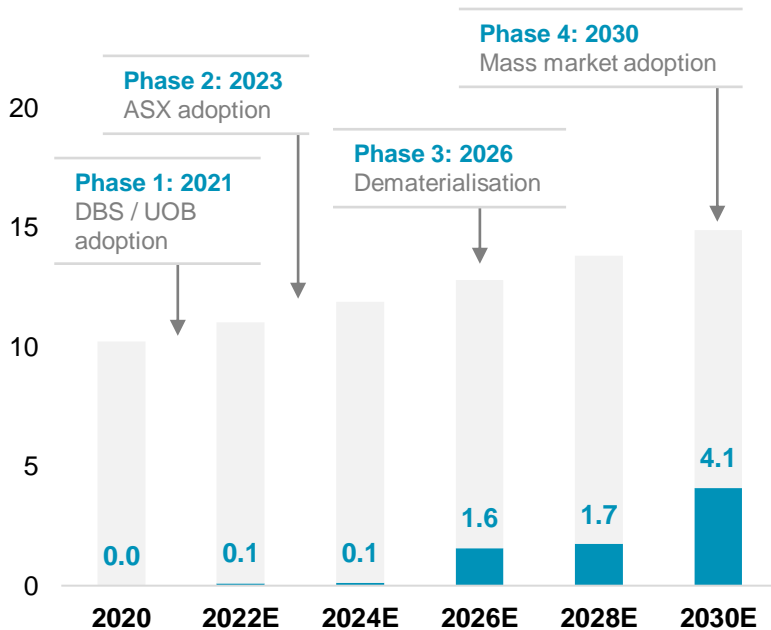
Transactions are executed through the blockchain system without engaging with any third-party intermediaries / service providers

# WALLET OPPORTUNITY

Expecting the rise of a well-regulated global security token regime, we estimate USD 4.1 trillion in issuance and USD 162.7 trillion in listed security token trading volume by 2030

## Issuance Volume Transition

Exchange Traded Products, USD trillion, 2020-30E



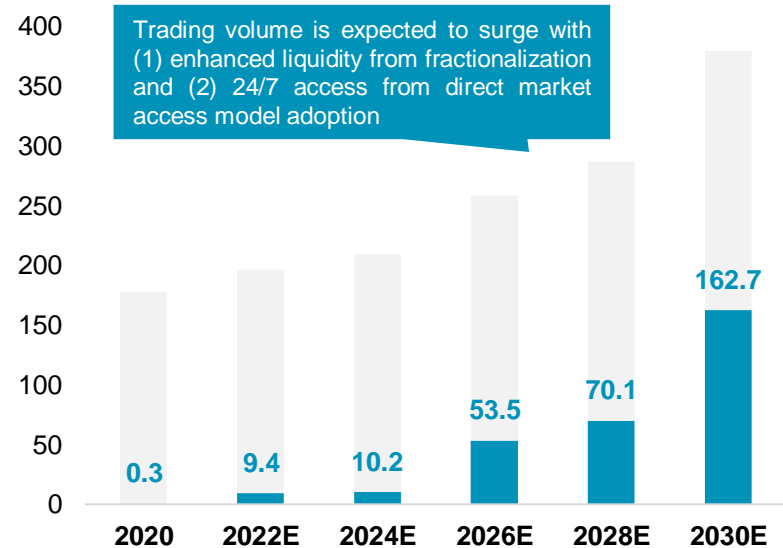
**0.04%**  
2020 Market Share

→

**27.4%**  
2030E Market Share

## Trading Volume Transition

Exchange Traded Products, USD trillion, 2020-30E



**0.19%**  
2020 Market Share

→

**42.9%**  
2030E Market Share

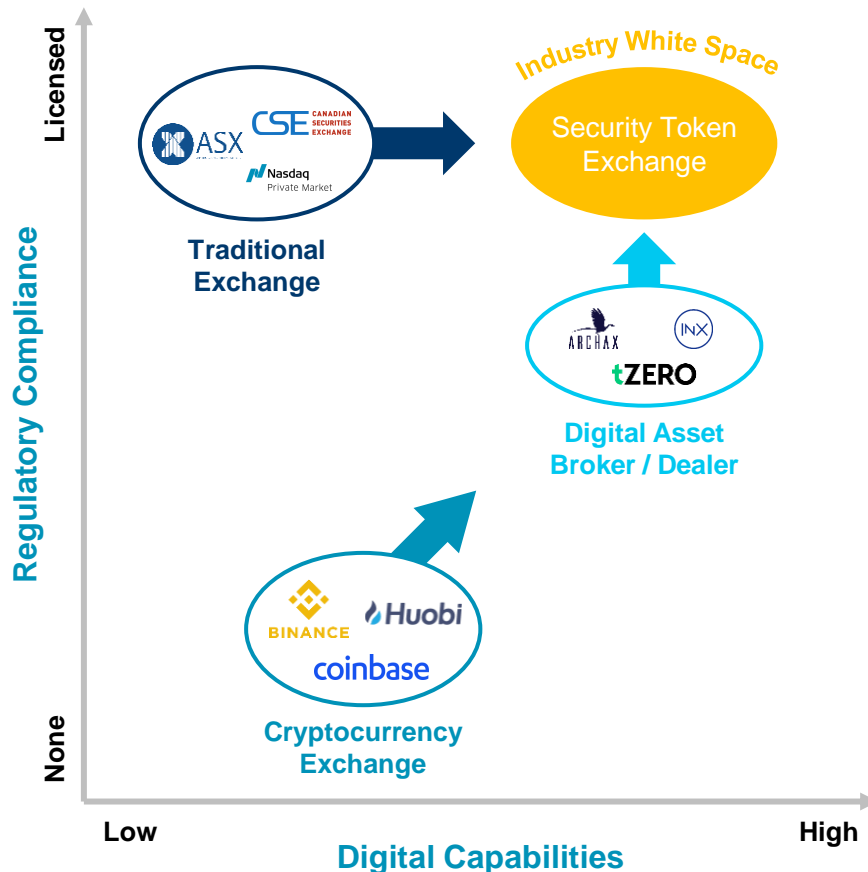
Traditional Securities Market    Security Tokens Market

## **SECTION 4**

## SECURITY TOKEN EXCHANGES

# THE RACE TO BECOME A SECURITY TOKEN EXCHANGE

Taking note of the benefits of blockchain technology and the opportunity on offer, various exchanges have begun a transformation towards becoming security token exchanges



1

## TRADITIONAL EXCHANGE

Securities exchanges, especially in developed markets, are digitally transforming towards blockchain-based back end operations

2

## CRYPTOCURRENCY EXCHANGE

Cryptocurrency exchanges are acquiring relevant regulatory licenses to transition from crypto specialists to digital asset generalists




3

## DIGITAL ASSET BROKER / DEALER

Players with broker-dealer or ATS / MTS licenses have been set up to support the issuance and trading venues of security tokens

## TRADITIONAL EXCHANGES

We have observed three traditional exchanges, in particular, who are rapidly adopting blockchain: (1) Nasdaq; (2) CSE<sup>1</sup>; and (3) ASX<sup>2</sup>, to enter the security token space




			
<b>Description</b>	Used its Nasdaq Linq blockchain ledger technology to successfully complete and record a private securities transaction	Launched an innovative securities clearing and settlement platform, promoting the use of Security Token Offerings	Released its new equities clearing and settlement system that will replace the legacy Clearing House Electronic Sub-register System
<b>Founded Year</b>	<ul style="list-style-type: none"> <li>1971 (Nasdaq)</li> </ul>	<ul style="list-style-type: none"> <li>2003</li> </ul>	<ul style="list-style-type: none"> <li>1987</li> </ul>
<b>Headquarters</b>	<ul style="list-style-type: none"> <li>United States</li> </ul>	<ul style="list-style-type: none"> <li>Canada</li> </ul>	<ul style="list-style-type: none"> <li>Australia</li> </ul>
<b>Blockchain Adoption</b>	<ul style="list-style-type: none"> <li>30 Dec 2015</li> </ul>	<ul style="list-style-type: none"> <li>13 Feb 2018</li> </ul>	<ul style="list-style-type: none"> <li>7 May 2019 – 2023E</li> </ul>
<b>Digital Asset Offerings</b>			
Digital Asset Securities	✓	✓	✓
Digital Asset Currencies	✗	✗	✗
Other Digital Assets	✗	✗	✗

✓ Offered
 - Dependent
 ✗ Not Offered

<sup>1</sup>Canadian Securities Exchange, <sup>2</sup>Australian Securities Exchange  
Source: Company websites, Quinlan & Associates analysis

## INCUMBENT CRYPTOCURRENCY EXCHANGES




Several notable cryptocurrency exchanges appear to be gradually shifting from a crypto-only proposition to becoming regulated blockchain-based security token exchanges

			
<b>Description</b>	Binance is an online centralized exchange, and is the largest cryptocurrency exchange platform by volume	Huobi is the world's leading Bitcoin and Ethereum trading platform offering trading services for over 100 digital assets	Coinbase is a fully licensed cryptocurrency exchange based in the US for buying, storing and selling cryptocurrency
<b>Founded Year</b>	<ul style="list-style-type: none"> <li>2017</li> </ul>	<ul style="list-style-type: none"> <li>2013</li> </ul>	<ul style="list-style-type: none"> <li>2012</li> </ul>
<b>Headquarters</b>	<ul style="list-style-type: none"> <li>Cayman Islands</li> </ul>	<ul style="list-style-type: none"> <li>Seychelles</li> </ul>	<ul style="list-style-type: none"> <li>United States</li> </ul>
<b>Digital Asset Offerings</b>			
Digital Asset Securities	✘	✘	✘
Digital Asset Currencies	✔	✔	✔
Other Digital Assets	✔	✔	✔

✔ Offered
 - Dependent
 ✘ Not Offered

## DIGITAL ASSET BROKER-DEALERS

There is also a slew of new entrants that have tried to set-up as ‘security token exchanges’ from scratch, to overcome the limitations faced by their aforementioned peers




			
<b>Description</b>	The first ever security token exchange regulated by the Financial Conduct Authority (“FCA”) in London	An alternative trading system regulated by the SEC and FINRA that offers digital asset trading platform	Building a cloud-based system for trading digital asset securities and cryptocurrencies that is regulated by the US SEC
<b>Founded Year</b>	<ul style="list-style-type: none"> <li>2018</li> </ul>	<ul style="list-style-type: none"> <li>2014</li> </ul>	<ul style="list-style-type: none"> <li>2017</li> </ul>
<b>Headquarters</b>	<ul style="list-style-type: none"> <li>United Kingdom</li> </ul>	<ul style="list-style-type: none"> <li>United States</li> </ul>	<ul style="list-style-type: none"> <li>Gibraltar</li> </ul>
<b>Digital Asset Offerings</b>			
Digital Asset Securities	-	-	-
Digital Asset Currencies	✓	✓	✓
Other Digital Assets	✗	✗	✗

✓ Offered
 - Dependent
 ✗ Not Offered



## LICENSING STATUS

However, none of these exchanges has successfully tapped into the industry white space and become a true security token exchange at present

	 <b>THE ADVENTUROUS TRADITIONAL EXCHANGES</b>	 <b>CRYPTOCURRENCY EXCHANGES</b>	 <b>DIGITAL ASSET BROKER-DEALERS</b>
<b>Registration Status</b>			
Securities Exchange	✓	✗	✗
Money Transmitter	✗	✓	✓
Broker-Dealer	✗	✓	✓
ATS / MTF	✗	✗	✓

✓ Offered
- Dependent
✗ Not Offered

## **SECTION 5**

## POTENTIAL WINNERS AND LOSERS

## ISSUERS AND INVESTORS (1/3) – IMPLICATIONS

The adoption of security tokens will help financial markets become: (1) cheaper; (2) faster; (3) more liquid; and (4) more efficient for both issuers and investors



### ACCELERATED ISSUANCE

By removing unnecessary intermediaries and automating admin. processes, friction costs and time to issuance are minimised

### WIDER PRODUCT SUITE

Traditionally restricted and highly illiquid products can be accessed and traded by retail investors



### WIDER INVESTOR BASE

Through fractionalisation of digital assets issued on blockchain, issuers could get access and cover long-tail investors

### INSTANT SETTLEMENT

Blockchain remove hidden admin fee associated with settlement, and reduce a traditional T+2 settlement time to T+0



### OPTIMISED COMPLIANCE / REPORTING

With the smart contract, administrative operations such as accounting, tax, and compliance reporting can be simplified

### 24/7 ACCESS

As no human labour is required to support trading activities, investors can trade security token 24/7 from any location










■ For Issuers ■ For Investors

## ISSUERS AND INVESTORS (2/3) – TRADING HOURS

The adoption of a direct market access model by security token exchanges could eliminate the restrictions posed by opening and closing times of traditional exchanges










### TRADITIONAL EXCHANGE

Exchange Name	Trading Days (Per Year)	Trading Hours (Per Day)
 NYSE	253 days	6.5 hours
 Nasdaq	253 days	6.5 hours
 London Stock Exchange	255 days	8.5 hours
 SGX	252 days	7.0 hours
 HKEX 香港交易所	248 days	5.5 hours
 ASX	255 days	6.0 hours
 CSE CANADIAN SECURITIES EXCHANGE The Exchange For Entrepreneurs	244 days	6.5 hours



### DIGITAL ASSETS BROKER-DEALER

Exchange Name	Trading Days (Per Year)	Trading Hours (Per Day)
 ARCHAX	365 days	24 hours
 INX	365 days	24 hours
 tZERO	365 days	24 hours
 Blocktrade	365 days	24 hours
 openfinance	365 days	24 hours
 STOGLOBALX	365 days	24 hours
 VNX EXCHANGE	365 days	24 hours

**1,672 hours**

Traditional Exchange Average



**8,760 hours**

Blockchain-based Exchange Average



**5.24x**

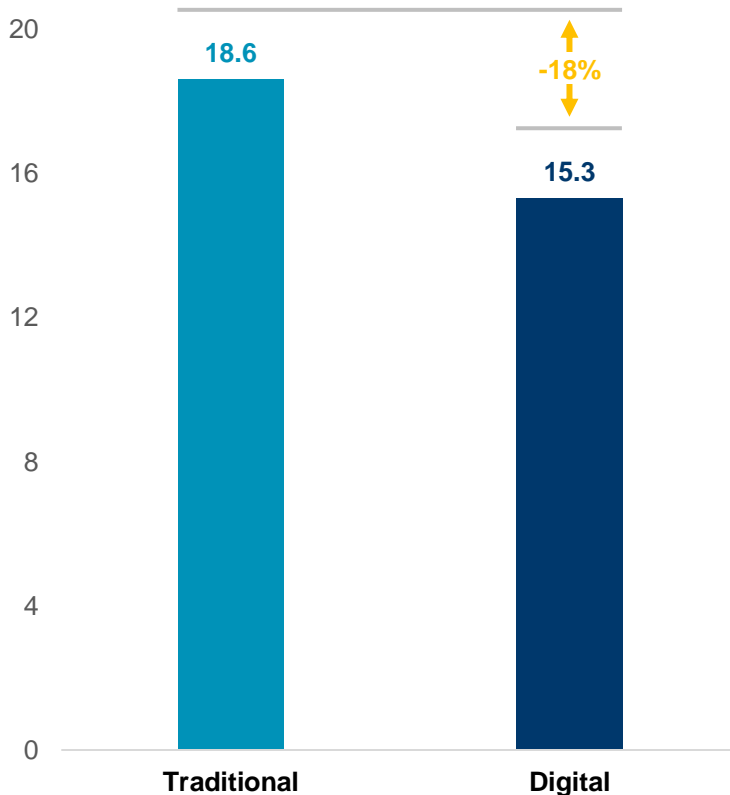
Annualised Difference Multiple

## ISSUERS AND INVESTORS (3/3) – COST

From a financial perspective, we should also see a reduction in the overall costs borne by both issuers and investors for issuance and trading respectively

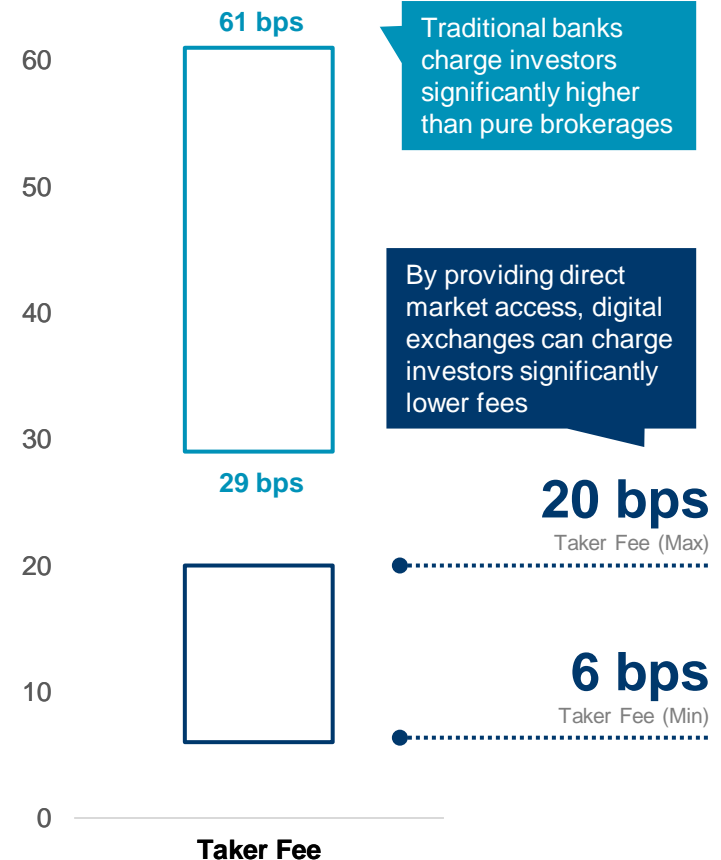
### Issuance Fees

For a USD 200 million raise, USD million



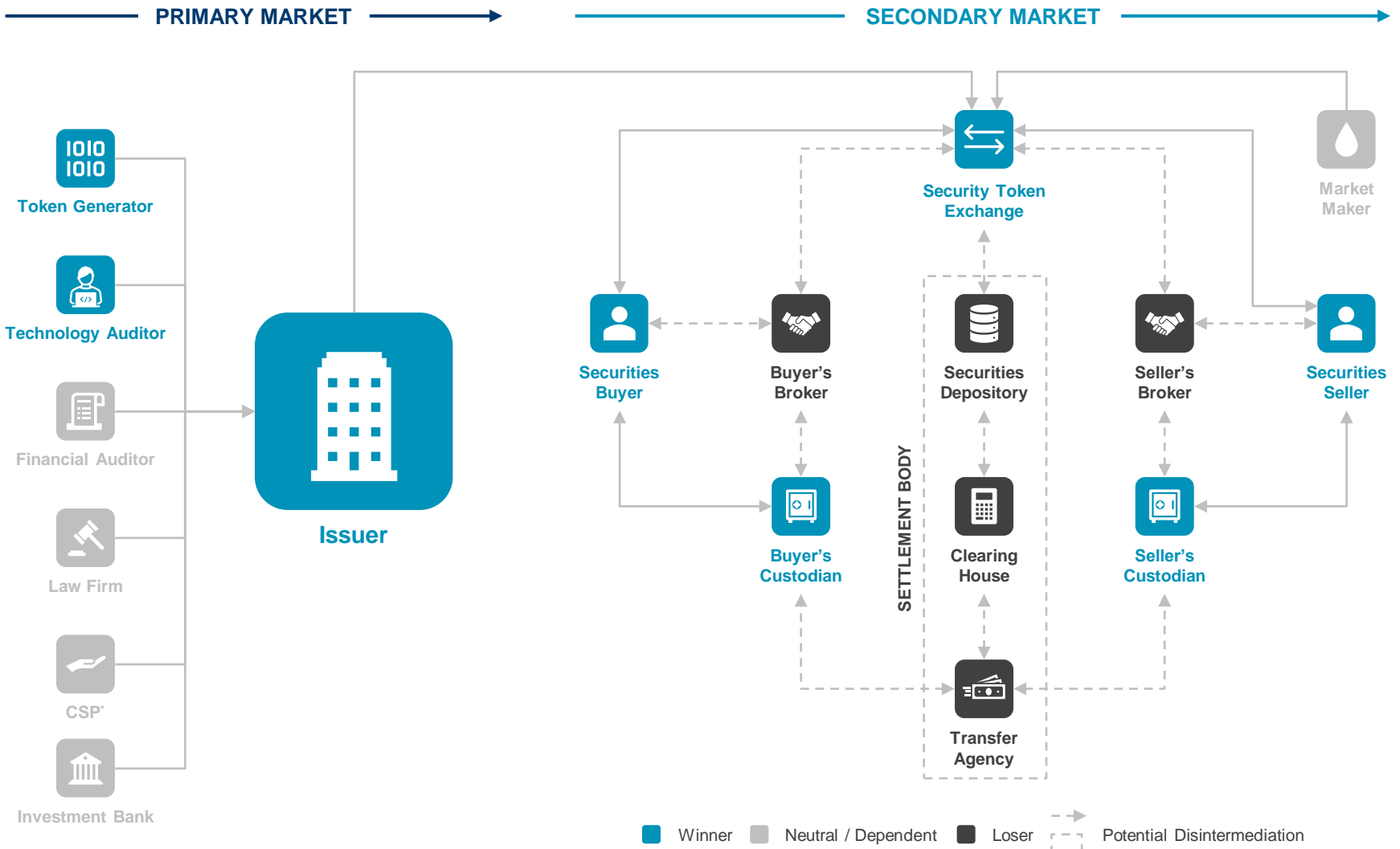
### Trading Fees

Bps, 2020















# MARKET PARTICIPANTS (1/2) – DIGITAL ASSETS MARKET LANDSCAPE

With a sizeable shift expected to take place, the role performed by various players could evolve as well, especially given the possible disintermediation potential



## MARKET PARTICIPANTS (2/2) – WINNERS AND LOSERS

Anticipating a shift from the traditional securities ecosystem to a security token ecosystem, we foresee a number of potential winners and losers

	Security Token Market Player	Revenue Impact	Level of Impact	Description	Key Consideration
PRIMARY MARKET	 Token Generators	↑	■ ■ ■ ■ ■	Expected to benefit with a growth in token issuance volumes	Potential tie-up with security token exchanges
	 Technology Auditors	↑	■ ■ ■ ■ ■	Growth of security token exchanges should help technology auditors	Brand building towards being recognised for strong audit quality
	 Financial Auditors	→	■ ■ ■ ■ ■	Not expected to experience significant impact	Develop relevant expertise in security token financial auditing
	 Corporate Service Providers	→	■ ■ ■ ■ ■	Not expected to experience significant impact	Develop relevant expertise in security token issuance needs
	 Law Firms	→	■ ■ ■ ■ ■	Not expected to experience significant impact	Develop relevant expertise in security token issuance needs
	 Sponsors / Underwriters	→	■ ■ ■ ■ ■	Not expected to experience significant impact	Develop relevant expertise in security token issuance needs
SECONDARY MARKET	 Security Token Exchanges	↑	■ ■ ■ ■ ■	May emerge as the big winners in the impending shift to security token	Attempt to become early to market, in terms of mainstream reach
	 Custodians	↑	■ ■ ■ ■ ■	Revenue growth potential from the growth in digital asset market cap	Develop capabilities to service a broad variety of digital assets
	 Market Makers	→	■ ■ ■ ■ ■	May be driven towards niche pockets with low levels of liquidity	Explore various digital asset instruments to build capability
	 Brokers	↓	■ ■ ■ ■ ■	Retail mass market may cut out brokers to capitalise on lower fees	Focus on institutions and professional investors
	 Settlement Bodies	↓	■ ■ ■ ■ ■	Settlement bodies may be disintermediated via blockchain	Try to either carve out an alternative value proposition or pivot
	 Transfer Agencies	↓	■ ■ ■ ■ ■	Transfer agencies may be disintermediated via blockchain	Try to either carve out an alternative value proposition or pivot

Favourable ↑ → ↓ Unfavourable Low ■ ■ ■ ■ ■ High

## SECTION 6

## HOW CAN WE HELP?



## HOW CAN WE HELP

Our consultants have extensive experience working with digital assets companies across the value chain, supporting them across their strategy and implementation needs



### STRATEGY / ROADMAP

- Review industry, product, customer, and regulatory developments to identify key opportunities and gaps in the digital assets ecosystem, including market sizing of specific revenue opportunities
- Conduct detailed competitor analysis, with benchmarking against relevant peers and industry best practices, to identify capability gaps and key white spaces
- Identify appropriate product development opportunities and expansion pathways (i.e. organic growth vs. acquisition), based on financial, strategic, and operational fit



### OPERATING MODEL

- Identify required policies, processes, and systems to support the client's growth strategy, including people / organisation, operations / processes, risk / compliance, and IT / infrastructure
- Help prepare the required application documents (including post-approval documentation) to acquire relevant licences (e.g. ATS, broker-dealer, etc.)
- Provide ongoing execution support around the design and implementation of compliance processes, regulatory engagement, and operations



### CORPORATE TRAINING

- Provide world-class corporate training programmes focused on developing employees' soft and technical skills through tailored learning and development solutions:
  - ✓ Leadership & Management
  - ✓ Sales & Marketing
  - ✓ Communication And Engagement
  - ✓ Creativity & Innovation
  - ✓ Cultural Change
  - ✓ Strategic Thinking

## CONTACT US

<b>WEBSITE</b>	<a href="http://www.quinlanandassociates.com">www.quinlanandassociates.com</a>
<b>EMAIL</b>	<a href="mailto:enquiries@quinlanandassociates.com">enquiries@quinlanandassociates.com</a>
<b>TEL</b>	(+852) 2618 5000
<b>ADDRESS</b>	Level 19 Two International Finance Centre 8 Finance Street Central, Hong Kong

## DISCLAIMER

Copyright © 2022 Quinlan & Associates.

All rights reserved. This presentation may not be distributed, in whole or in part, without the express written consent of Quinlan & Associates. Quinlan & Associates accepts no liability whatsoever for the actions of third parties in this respect.

The information and opinions in this presentation were prepared by Quinlan & Associates. This presentation is not financial or investment advice and should not be relied upon for such advice or as a substitute for professional accounting, tax, legal or financial advice. Quinlan & Associates has made every effort to use reliable, up-to-date and comprehensive information and analysis in this presentation, but all information is provided without warranty of any kind, express or implied.

Quinlan & Associates disclaims any responsibility to update the information or conclusions in this presentation. Quinlan & Associates accepts no liability for any loss arising from any action taken or refrained from as a result of information contained in this presentation or any reports or sources of information referred to herein, or for any consequential, special or similar damages even if advised of the possibility of such damages. This presentation is not an offer to buy or sell securities or a solicitation of an offer to buy or sell securities.

QUINLAN  
&ASSOCIATES

---

STRATEGY WITH A DIFFERENCE