



Unlocking Hong Kong's Real Estate Potential: The Case for Tokenization

Co-researched by MicroBit and University of Hong Kong

Authors: Anna Kam, Luqman Fairuz, Marco Ng

Disclaimer: Nothing in this article is intended to be nor should be construed as legal advice. This is an educational project created by students. Please consult your lawyer for legal advice.

Table of Contents

Introduction What is tokenized real estate? What do investors look for in tokenization? Structure of Tokenized Real Estate Fund I. Deal Structuring II. Technology Selection III. Token Creation & Distribution Examples of successful tokenized real estate Why Tokens Outshine REITs in Real Estate Investment Benefits of Tokenization 1. Greater liquidity 2. Diversification of investment 3. Risk management - operational efficiency and reduced costs What are the regulations like in Hong Kong? Definition of Tokenised Securities "See-through" Approach Issuance of Tokenised Securities Disclosure of Risks of Tokenised Securities Regulation of non-SFO-regulated structured investments product Aside from legal risks, what should investors be aware of? And how can these be mitigated? 1. Cybersecurity Prevention measurements 2. Ownership Conclusion References

Introduction

Whilst tokenisation has existed for more than 2 decades, its application towards Real World Assets (RWA) such as real estate, art and commodities has been a more recent phenomena. With the global real estate market expected to surge from USD \$29 trillion currently to USD \$48.9 trillion by 2031, it represents an immense opportunity for developers and fund managers to innovate and deliver new real estate products to clients and investors.

What is tokenized real estate?

Tokenization is the process of issuing a digital, unique, and anonymous representation of a real thing. In Web3 applications, the token is usually used on a private blockchain, which allows tokens to be used within specific protocols. Tokens can represent assets, including physical assets like real estate or art, financial assets like equities or bonds, intangible assets like intellectual property, or even identity and data.

At its core, the tokenization of real property involves the digital fractional representation of asset rights and ownership via blockchain technology. Real estate tokenization employs Distributed Ledger Technology (DLT) and smart contracts to execute and record transfers of real property ownership in ways that are faster, cheaper, and overall more efficient than what is currently available under the traditional framework. It is the combination of fractional ownership, smart contracts, and distributed ledger technology that translates into tokenization.

What do investors look for in tokenization?



In an ideal situation, tokenization will contain the following core properties that contribute to its functionality and effectiveness:

- Legal Rights for Token Owners: Tokens must link to the real world underlying assets, allowing token owners rights and/or ownership through appropriate legal documentation
 - **Investors must clarify the nature of the underlying asset**: In real estate tokenization, it's important to understand that the underlying asset is unlikely to be direct legal ownership of land titles, as the conveyancing process necessary for real estate transactions cannot be replaced by the mere transfer of tokens. Therefore, transferring ownership of real estate assets through token transfers is generally not

feasible. Instead, real estate tokenization projects typically involve the tokenization of funds or trust structures that hold properties.

- **Transfer to Third Parties**: The issuer can enter into a contract with the initial token owner to ensure that the token carries legal rights. However, due to the privity of contract, if the token owner transfers it to a third party, the third party will not be bound by the contract and cannot enforce the rights. To address this issue, issuers can create a private blockchain where only those who are parties to the agreement can hold and trade the token. Alternatively, they can rely on jurisdictions with relevant laws, like in Switzerland, where a contractual right may be securitized in an asset token, and once securitized, such rights can be transferred through the transfer of the asset token.
- **Decentralised**: A decentralised token refers to a digital asset that operates on a decentralised network, such as a blockchain, without the control or authority of any single entity. Unlike traditional centralised systems where a central authority governs the issuance, distribution, and validation of assets, decentralised tokens rely on a distributed network of nodes to validate transactions and maintain the integrity of the network.
- **Native**: Tokens should operate on its own native blockchain platform. Native platforms provide enhanced security through robust encryption and immutable recordkeeping, ensuring transparency and trust in transactions. Additionally, transactions can be processed faster and more efficiently, leading to quicker settlement times and improved liquidity.
- **International**: Tokens should be traded internationally to facilitate borderless transactions and promote global economic market
- Self-custody: Ideally, investors would have custody over their tokens directly, reducing reliance on third-party intermediaries for storage; and also possess legal title to the tokenized assets, ensuring ownership rights are secured independently from centralised entities.
 - **JPEX scandal**: In September 2022, the crypto platform, JPEX was frozen, due to allegations of misleading investors by claiming to have applied for a crypto trading licence and charging users exorbitant fees to withdraw funds. As a result, thousands of investors who purchased the JPC, a token issued by JPEX, could not get their money back. Investors are increasingly hesitant to deposit their tokens with centralised exchanges, as evidenced by the risk highlighted when these exchanges face insolvency, potentially leading to the loss of tokens.

As the tokenization industry continues to mature, there is a growing appetite among investors for tokenized products, which are emerging as viable alternatives to traditional stocks and bonds. Simultaneously, regulatory frameworks governing token issuers are becoming more robust, providing enhanced protection for investors, signalling a move towards greater legal clarity and recognition of tokenized assets. With these developments, the ideals of investor protection and reliability in the tokenization space are poised to transition from aspirations to concrete realities.

Why Tokens Outshine REITs in Real Estate Investment

Real estate investment has long been favoured for its potential to yield favourable long-term returns. However, accessing a diverse portfolio of real estate assets traditionally involves high costs and the market is characterised by significant illiquidity, with transactions requiring substantial time and effort. To overcome these barriers, investors have historically relied on Real Estate Investment Trusts (REITs), which pool funds to invest in income-generating properties like shopping malls and office spaces, providing a recurring income stream. Yet, the advent of tokenization marks a significant evolution, offering even greater liquidity, diversification, and efficiency in real estate investments. In the particularly challenging real estate market of Hong Kong, where entry barriers are notoriously high and liquidity is often low, Real Estate Tokens emerge as a revolutionary investment alternative. By leveraging blockchain technology, these tokens provide numerous advantages over traditional REITs, making them an increasingly attractive option for investors in Hong Kong.

1. Lower Barriers to Entry

Real Estate Tokens significantly reduce entry barriers, making real estate investment more accessible and liquid:

- Minimal Initial Investment: Real Estate Tokens significantly lower entry barriers for retail investors by allowing investments in smaller denominations, making the real estate market more accessible and liquid. This increased liquidity enables investors to adjust their investment positions more freely in response to market dynamics, compared to the restrictive nature of traditional REITs and direct real estate investments which often require substantial capital and are burdened with high minimum investment thresholds and upfront fees.
- No Management Fees: Traditional REITs typically charge management fees ranging from 9-10%, which can eat into investors' returns. In contrast, Real Estate Tokens often eliminate these fees by utilising blockchain technology for management tasks, thereby reducing operational costs and improving net investor returns.

2. Enhanced Liquidity Through Blockchain

Blockchain technology significantly enhances the liquidity of investments, a critical advantage in the typically illiquid Hong Kong real estate market:

- Ease of Transactions: Tokens are traded on digital exchanges, similar to cryptocurrencies, which means they can be bought and sold globally without the need for traditional brokerage services. This reduces transaction times from days or weeks to mere minutes or seconds.
- Market Depth and Accessibility: The global nature of blockchain platforms means that a broader market can access these tokens, increasing liquidity and providing more stable prices compared to the often volatile Hong Kong real estate market.

3. Broader Investment Scope

Real Estate Tokens offer a more flexible investment scope compared to REITs, which are often limited by strict regulations:

- Diverse Asset Types: REITs primarily focus on commercial properties, such as offices, malls, and multi-family residential units. Real Estate Tokens offer Hong Kong investors an opportunity to invest in a wider range of real estate asset classes beyond the typical offerings in a REIT, including infrastructure, development, and construction loans, thereby enhancing their portfolio diversification and providing a hedge against headwinds in the current challenging regional and global macroeconomic climate.
- Innovative Investment Structures: Hong Kong-listed REITs are subject to stringent legal limitations, requiring that 75% of a REIT's gross asset value must be from properties generating rental income, with only 25% allowed for minority-owned properties, property developments, financial instruments, and other ancillary investments. In contrast, Real Estate Tokens are not bound by these restrictions, enabling access to a broader array of investment

opportunities with different cash flows and risk profiles. These tokens can include underlying assets such as equities, options to use real estate, and alternative non-rental recurrent income streams. As the real estate investment landscape evolves, Real Estate Tokens are emerging as a dynamic and versatile alternative, offering investors more options to navigate market complexities and optimise their investment strategies.

4. 24/7 Trading Capability

The capability to trade Real Estate Tokens at any time significantly enhances their attractiveness:

- Global Trading Window: HK Investors can trade tokens across different time zones without waiting for a particular market to open. This is particularly advantageous in a globally interconnected market where real estate dynamics can change quickly due to economic, political, or environmental factors.
- Immediate Reaction to Market Changes: The ability to trade 24/7 allows HK investors to immediately react to news or market shifts, aligning their portfolios with their current risk appetite and investment outlook in real time.

In conclusion, Real Estate Tokens offer Hong Kong investors a modern, efficient, and flexible alternative to traditional real estate investments or REITs. By lowering entry barriers, enhancing liquidity, and enabling constant trading, these tokens not only make real estate investment more accessible but also more dynamic and responsive to the challenging regional and global macroeconomic climate. These tokens provide a unique opportunity to diversify portfolios beyond the traditional offerings of REITs, enabling exposure to a broader spectrum of real estate asset classes. This diversification is particularly valuable, serving as a robust hedge against the headwinds faced by REITs. As technological advancements continue to reshape financial landscapes, Real Estate Tokens stand out as a particularly beneficial innovation for the unique needs and challenges faced by Hong Kong investors, offering them a pathway to diversification and growth in the global real estate market.

Structure of Tokenized Real Estate Fund

I. Deal Structuring

The deal structure is determined by factors such as jurisdiction, asset type, shareholder types, and applicable regulations.

1. Asset selection - Conduct thorough due diligence on the properties, including title searches, valuation reports, and building inspections, to ensure a solid foundation for the tokenized offering, Also focusing on properties with stable rental income, strong potential for capital appreciation, and attractive yields to maximise investor returns.

2. Shareholder rights - Determine investors' rights based on the legal structure and consider offering multiple token classes.

3. Execution regulation - Ensure compliance with HK's securities laws and regulations, including the Securities and Futures Ordinance and any specific guidelines issued by the SFC regarding digital asset offerings. This includes requirements related to disclosure and investor protection measures. On top of that, compliance with Hong Kong's AML/CTF regulations, including conducting KYC checks on investors and monitoring for suspicious transactions needs to be achieved.

II. Technology Selection

1. Blockchain and token definition - Identify a blockchain that is secure, scalable, and compliant with HK's regulatory requirements. The token should be designed to meet project needs such as enabling fractional ownership, facilitating cross-border transactions, and ensuring compliance with AML and KYC regulations. One particular example used in other RWA tokenisation schemes is **Ethereum**.

2. Custody solution - Select a suitable physical custody solution for storing real estate tokens, considering investor needs. Custodians will need to be certified by the Hong Kong Trust or Company Service Provider as well as be certified to act as a virtual asset custodian.

3. KYC/AML vendor - Choose a KYC/AML provider that is familiar with Hong Kong's regulatory landscape and can ensure compliance with the city's AML/CTF requirements. More notable examples include **Refinitiv** and **Dow Jones**.

III. Token Creation & Distribution

1. Minting Tokens - Use a secure and auditable token minting process, ensuring compliance with Hong Kong's securities regulations and the SFC's guidelines on digital asset offerings. The minting process should be transparent and provide a clear record of the token supply and distribution.

2. Conduct investor onboarding and KYC/AML processes - Implement a robust KYC/AML process that complies with Hong Kong's regulatory requirements, including the SFC's guidelines on digital asset exchanges (DAX) and the HKMA's AML/CTF guidelines. Investors should be provided with clear instructions and support for completing the onboarding process and linking their digital wallets.

3. Distribute tokens to investors directly or via a primary issuance platform - Distribute tokens to investors using a regulated digital asset exchange or a proprietary issuance platform. Ensure that the distribution process complies with Hong Kong's securities laws and provides real-time updates to investors and the issuer. Licensed platforms include <u>OSL Exchange</u> and <u>Hashkey</u>.

Examples of successful tokenized real estate

1. Overview of Tykhe Capital Group's Prince Token

Tykhe Capital Group's Prince Token is a groundbreaking STO that leverages the company's virtual asset licences, technical expertise in Web 3.0, and an experienced execution team with a background in capital markets and operations. The funds raised through the token offering are earmarked for the acquisition of a five-unit retail property located in Prince Edward, a prime tourism district in Kowloon, Hong Kong.

The digital securities are offered by a closed-ended fund managed by Pioneer Asset Management, a subsidiary of Tykhe. The minimum subscription amount for the STO is set at HK\$1,000, significantly lower than the typical US\$1 million (HK\$7.8 million) threshold required by private real estate funds. Token holders are entitled to receive annual distributions of rental income generated from the property and benefit from the potential appreciation of the property's value.

2. Custody and Security

Pioneer Asset Management arranges for investors to open a digital wallet account with ON1ON Custody, another Tykhe subsidiary, for the allocation and secure storage of the tokens. ON1ON Custody is a licensed Hong Kong Trust or Company Service Provider and a virtual asset custodian.

The stored tokens are protected by virtual asset insurance provided AICPA SOC 2-certified by a Hong Kong insurer, ensuring the safety of investors' assets.

3. Blockchain Technology and Liquidity

Unlike traditional funds where shareholdings are recorded by a book entry maintained by fund administrators, the settlement finality of the Prince Tokens is recorded on the public Ethereum blockchain. This technical advantage enables an immediate secondary market through over-the-counter (OTC) trading.

Subject to regulatory approval, Pioneer also plans to list the tokens on HKbitEX, a Tykhe subsidiary operating a virtual asset exchange business. This listing would provide greater liquidity for investors through 24/7 automated trading, enhancing the overall investment experience.

Benefits of Tokenization



1. Greater liquidity

In the past, investors typically invested in Real Estate Investment Trusts (REITs) or acted as limited partners in close-ended real estate funds, which often necessitated substantial initial investments and required holding onto shares until the fund's eventual exit. However, the advent of tokenization has significantly reduced entry barriers, offering investors increased liquidity and flexibility. Through tokenization, investors can hold tokens representing ownership in real estate assets and trade them either over-the-counter (OTC) or through regulated virtual asset platforms, ensuring continuous access to markets around the clock, and not confined to the trading sessions in the securities market. Further, on a global scale, tokenization fosters liquidity by facilitating the secure transfer of shares among investors internationally. This allows investors to address liquidity needs or capitalize on asset appreciation by trading their tokens, thereby realizing value more efficiently.

2. Diversification of investment

Tokenization presents a compelling proposition for investors seeking greater diversity compared to traditional investment vehicles. One key advantage lies in the accessibility and flexibility it offers to owners of single assets or small portfolios. Through tokenization, these owners can efficiently offer investors the opportunity to participate in fractional ownership, thereby reducing barriers to entry in real estate investment. This fractional ownership model is facilitated by the seamless issuance of digital tokens, which represent ownership stakes in the underlying assets. Moreover, tokenization streamlines secondary trading, enabling investors to easily buy and sell these tokens on digital asset platforms.

Furthermore, tokenization empowers investors with greater control over their investment portfolios compared to REITs. In a traditional REIT structure, investors have limited control over the composition of the investment portfolio, as the management and allocation of assets are determined by the REIT managers. This lack of control may result in investors being exposed to asset classes or properties that do not align with their investment preferences or risk appetite. However, with tokenization, investors can choose specific assets or property types in which they wish to invest. For instance, if an investor is particularly interested in data centers due to their perceived growth potential, they can directly invest in tokenized data center assets. This level of customization and control over investment choices is a significant advantage of tokenization, offering investors the ability to tailor their portfolios to match their investment objectives and preferences more precisely.

3. Risk management - operational efficiency and reduced costs

Tokenization of real estate assets harnesses blockchain technology and smart contracts to revolutionize the investment process, yielding benefits such as enhanced operational efficiency, reduced costs, and decreased risks for investors. Smart contracts, acting as the foundation of tokenization, can ensure the seamless execution of compliance protocols, including due diligence, Know Your Customer (KYC), and Anti-Money Laundering (AML) procedures, in alignment with regulatory standards. These contracts also facilitate rapid transaction settlement, streamlining processes and bolstering efficiency. The immutable nature of blockchain transaction records, coupled with automated smart contract functionality, allows transactions to be settled nearly instantly.

In traditional real estate investment models like REITs or real estate funds, substantial expenses are incurred for managing asset portfolios, including salaries for licensed professionals and administrative overhead. However, blockchain integration in tokenization significantly reduces ongoing management costs by automating routine tasks typically handled by human intermediaries. Smart contracts execute predefined actions autonomously, eliminating the need for manual intervention in tasks such as transaction settlement and regulatory compliance. Moreover, blockchain technology ensures transparency and security through its decentralized ledger, recording all transactions related to tokenized assets and mitigating the risk of fraud or disputes. Therefore, not only does tokenization enhance the efficiency of transactions, but it also cuts out manual processes and reduces the chance of human errors, thereby managing the risk for investors.

What are the regulations like in Hong Kong?

In light of financial institutions' growing interest in tokenising traditional financial (eg bonds or funds) instruments in the global financial markets, Hong Kong's Securities and Futures Commission (SFC) 2 November 2023, issued 2 circulars addressing the regulation of tokenised securities, including for intermediaries and requirements for authorisation by the SFC.

Definition of Tokenised Securities

As per the SFC, **tokenization** involves "the process of recording claims on assets that exist on a traditional ledger onto a programmable platform, which includes the use of distributed ledger technology (DLT) in the security lifecycle".

Tokenized Securities are "traditional financial instruments (e.g. bonds or funds) that are 'securities' as defined in section 1 of Part 1 of Schedule 1 to the Securities and Futures Ordinance (Cap. 571) (SFO) which utilize DLT (such as blockchain technology) or similar technology in their security lifecycle". The definition of "securities" under the SFO is broad, encompassing various financial instruments such as shares, stocks, debentures, bonds, notes, interests in collective investment schemes (CIS), and SFC-authorized structured products. Tokenized Securities are subject to prevailing securities regulations in Hong Kong and come under the regulatory purview of the Securities and Futures Commission (SFC).

Tokenized Securities are a subset of **Digital Securities**. Digital Securities which are not Tokenised Securities may be structured in more bespoke, novel or complicated forms. Some exist exclusively on a DLT-based network with no links to extrinsic rights or underlying assets and may have no controls to mitigate the risks that ownership rights may not be accurately recorded. Digital Securities cannot be offered to retail investors. Whether a token can be offered to retail investors, and whether they are considered Tokenised Securities or Digital Securities depends on the underlying assets.

Example of Underlying asset	Classification	Can be offered to retail investors	Can be offered to institutional investors
Shares are offered by a close-ended fund that entitles holders to annual distribution of rental income and future appreciation in the value of the real estate	Tokenised Security		
Fractional ownership rights of legal title to the physical property,	Digital Securities		

"See-through" Approach

The SFC will adopt a "see-through" approach to regulate Tokenised Securities, as they are products that are "*fundamentally traditional securities with a tokenisation 'wrapper*". The SFC had also clarified that security tokens are not regarded as "complex products" by default. In light of this characterisation, consistent with the SFC's overarching approach of "same business, same risks, same rules", the existing legal and regulatory requirements governing traditional securities and related activities also apply to tokenised securities.

This means that, for example, unless an exemption is available:

- offerings of tokenised shares or debentures are subject to the prospectus regime under the Hong Kong Companies (Winding up and Miscellaneous Provisions) Ordinance ("C(WUMP)O")
- other tokenised securities are subject to the offers of investments regime under Part IV of the SFO.

Issuance of Tokenised Securities

When intermediaries issue Tokenised Securities, they remain responsible for the overall operation of the arrangement, including outsourcing key operations to third parties and custodial arrangements.

The SFC has also published a <u>list of non-exhaustive factors</u> for intermediaries' consideration, including the experience and track record of the third-party vendor used in the tokenisation arrangements, the technical aspects, in particular, any smart contract deployed, robustness of the DLT network, and the legal and regulatory status like the enforceability of the Tokenised Security.

Disclosure of Risks of Tokenised Securities

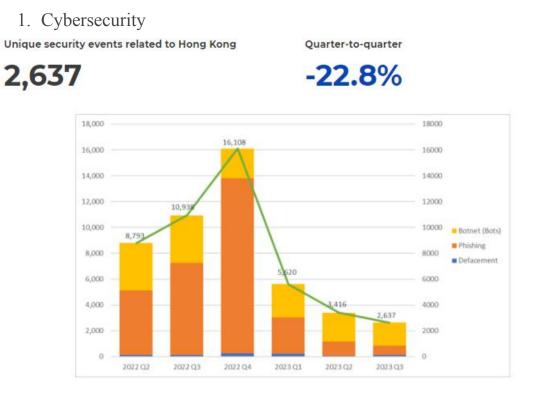
The SFC had identified new risks associated with tokenization that are not typically associated with traditional securities. These include ownership risks (e.g., how ownership interest relating to the Tokenised Securities is transferred and recorded) and technology risks (e.g., forking, blockchain network outages and cybersecurity risks). As a result, the SFC requires intermediaries involved in tokenised securities-related activities to effectively manage these risks. They are expected to have sufficient manpower and expertise to understand the complexities of such businesses, whether they are involved in issuance, dealing, advising, or managing portfolios investing in tokenised securities. Additionally, intermediaries must ensure that clients receive adequate disclosure of material information presented in a clear and easily understandable manner.

Regulation of non-SFO-regulated structured investments product

The Hong Kong Monetary Authority had also set out a Circular on the sale and distribution of tokenised products, outlining the supervisory standards expected of authorized institutions ("AIs") in the sale and distribution of tokenised products to their customers. The general principle is that the prevailing supervisory requirements and consumer/investor protection measures for the sale and distribution of a product are also applicable to its tokenised form as it has terms, features and risks similar to those of the underlying product, in addition to risks arising from the tokenisation itself.

For example, this will require AIs to conduct adequate due diligence for underlying products before offering them to customers, including the technology risks associated with the tokenisation arrangement.

Aside from legal risks, what should investors be aware of? And how can these be mitigated?



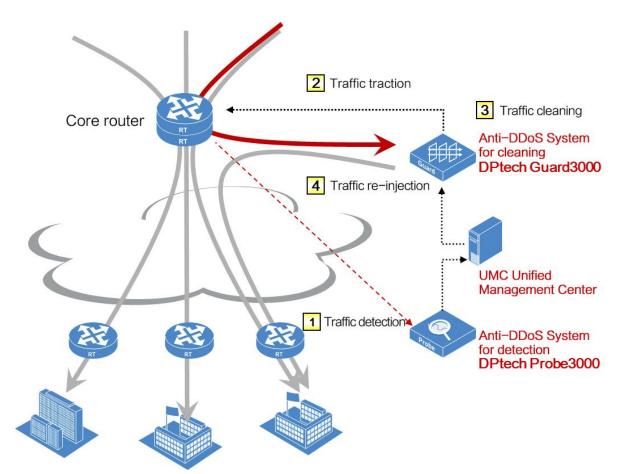
Event Type	2022 Q3	2022 Q4	2023 Q1	2023 Q2	2023 Q3	quarter-to- quarter
Defacement	113	249	233	69	132	+91.3%
Phishing	7,141	13,574	2,804	1,120	722	-35.5%
Botnet (Bots)	3,684	2,285	2,583	2,227	1,783	-19.9%
Total	10,938	16,108	5,620	3,416	2,637	-22.8%

There is a significant global problem of cybercrime that demands attention. In Hong Kong, the incidence of cybercrime has seen a substantial rise, with reported cases increasing from 2,206 in 2011 to 12,916 in 2020, and proliferated to 91.3% of defacement in the quarter-to-quarter period. The financial impact of these crimes amounts to HKD2.96 billion. Nevertheless, Hong Kong currently lacks a comprehensive cyber security law. However, the company may potentially violate the Personal Data (Privacy) Ordinance, as it mandates that companies must implement measures to safeguard data security. Additionally, the ordinance prohibits the transfer of data overseas without the user's consent.

There is ongoing uncertainty surrounding the issue of data security measures, as Cathay Pacific faced legal action due to allegations of inadequate steps taken to mitigate the risk of future

data breaches following a cyber attack. However, despite the company usually hiring cybersecurity experts to handle such protection, the judge's response to the hacking incident remains stringent. The judge holds the company accountable for the loss based on the findings of the security audit report.

Tokenisation platforms are highly dependent on technology and digital platforms. This reliance introduces the possibility of encountering challenges like cyberattacks, technical glitches, or operational errors. These issues can lead to financial losses and security breaches. Securing virtual assets during online transactions is a complex and costly endeavour. While using a cold wallet can help protect assets by keeping them offline, the moment they are connected to the internet, there are numerous unforeseeable risks involved. Unfortunately, there is no foolproof defence on online platforms, and the cost of defence is often much higher than the cost of cyberattacks.



For dealers, it seems crucial to invest in a system that offers a large storage capacity and realtime backup to prevent DDOS attacks and hacking. The tokenization data storage management system and hardcore can be quite expensive, but the benefits outweigh the costs. While the storage system may offer some protection against DDOS attacks, there remains a significant risk of being targeted by hackers. In the online world, no system is completely immune to breaches. If a hacker gains access to the core of the system, there is a possibility that the assets could be compromised or lost.

In addition to the threat of cyberattacks from hackers, such as DDOS attacks and hacking into tokenization systems, there is also a growing concern about cyber fraud cases, specifically phishing websites. These fraudulent websites trick clients into logging in to fake platforms, allowing the perpetrators to gain unauthorised access and transfer assets. Given the robust confidentiality and security measures of tokenization and blockchain, it becomes exceedingly difficult to trace lost funds.

Even if the perpetrator is identified, it is highly likely that they are beyond the reach of Hong Kong jurisdiction.

Measurements	How does it work?
1. <u>Beacons</u>	(ie imperceptible, remotely hosted graphics inserted into content to trigger a contact with a remote server that will reveal the IP address of a computer that is viewing such content). However, where the use of a web beacon involves processing personal data, the organisation's use of the web beacon must be in accordance with data protection laws.
2. <u>Honeypots</u>	Digital traps are designed to trick cyber threat actors into taking action against a synthetic network, thereby allowing an organisation to detect and counteract attempts to attack its network without causing any damage to the organisation's real network or data.
3. <u>Sinkholes</u>	Measures to re-direct malicious traffic away from an organisation's own IP addresses and servers are commonly used to prevent DDoS attacks.
4. <u>External electronic data</u> <u>storage</u> <u>(Google Cloud Platform)</u>	It sets out requirements for licensed corporations to engage an external data storage provider, including cloud services. It also reminds LCs to ensure the preservation and integrity of the records or documents they are required to keep under the Securities and Futures Ordinance (Cap 571 of the Laws of Hong Kong) (SFO) or the Anti-Money Laundering and Counter-Terrorist Financing Ordinance (Cap 615 of the Laws of Hong Kong).
5. <u>Guidelines for Reducing</u> <u>and Mitigating Hacking</u> <u>Risks</u>	Associated with Internet Trading, which sets out cyber security requirements for SFC-registered or licensed entities performing Internet trading.
6. HKMA's simulated Cyber-attack test (CFI)	Passing such a test designed by the HKMA would be strong evidence of having "reasonable prevention of cyber attack", and address public concerns.

Prevention measurements

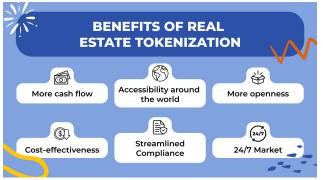
2. Ownership

This refers to the risks associated with how ownership interests related to tokenized securities are transferred and recorded. When real estate is tokenized, the ownership of that asset is converted into digital tokens and recorded on a blockchain. However, any errors or malpractices during this process could lead to disputes or losses of ownership as the aforementioned data storage and cybersecurity. If any errors or improper practices occur during this process, it could lead to disputes or losses of ownership. Furthermore, due to the decentralized and immutable nature of the blockchain, once ownership is incorrectly transferred, it may be difficult or impossible to revoke.

Conclusion

The tokenized real estate has effectively tackled the issues associated with REITs, streamlining secondary trading and enabling investors to trade with greater ease, this has resulted in reduced costs, improved operational efficiency, enhanced liquidity, and increased opportunities for diversification. Investors can benefit from tokenization by acquiring tokens that represent ownership of real estate assets.

These tokens can be easily traded at any time through the OTC market, providing a convenient and secure way to manage their investments. It's evident that tokenized real estate offers a greater range of options and can be tailored to individual needs. This allows owners of single assets or small portfolios to have more control over their investments and enjoy increased accessibility and flexibility.



Furthermore, in addition to the advantages of tokenized real estate, the smart contract enhances the rationale for clients to engage in trading, as it expedites transaction settlement and simplifies procedures, enabling immediate settlement of transactions. Looking at it from a dealer's point of view, tokenized real estate has the potential to greatly reduce costs by eliminating the need for salaries and management fees for licensed professionals. This is because the blockchain can take over routine tasks that were previously done by humans. The blockchain guarantees transparency and security through its decentralized ledger, which keeps a record of all tokenized asset transactions.



According to the Hong Kong government, the SFC has recently displayed a keen interest in the tokenization of traditional financial instruments in global financial markets. In November 2023, the SFC released a document specifically addressing tokens, which are now classified as "securities" and fall under the supervision of the SFC in accordance with the current SFO. The SFC will implement a transparent approach to oversee the financial activity associated with tokens that are not classified as "complex products" by default. This means that the tokens will be subject to the same rules and regulations as traditional securities, in line with the CSRC's approach of treating similar

businesses and risks equally it could be inferred that unless an exemption is available, offerings of tokenised shares or debentures are subject to the prospectus regime under the Hong Kong Companies (Winding up and Miscellaneous Provisions) Ordinance ("C(WUMP)O"); and other tokenised securities are subject to the offers of investments regime under Part IV of the SFO.



Tokenized real estate is highly vulnerable to cybersecurity threats due to its connection to the internet. The risk of hacking, data manipulation, and unauthorised transfer of virtual assets is a constant and serious concern. Therefore, it is crucial for the company to prioritise safeguarding its data security. Under Hong Kong law, dealers bear a significant responsibility for securely storing their clients' data and digital assets. Despite the company's online expansion and presumed expertise in handling such matters, the court has deemed the company liable for failing to provide adequate protection for their client's data. Therefore, it is highly recommended to engage the services of a seasoned professional to conduct a thorough security audit. It is also advisable to allocate sufficient resources towards hiring skilled cybersecurity personnel and implementing comprehensive preventive measures. Lastly, it is crucial to successfully complete the HKMA's CFI test to showcase the adoption of a robust security framework. Finally, it is crucial for the company to prioritise cybersecurity and take ownership. However, external factors, such as blockchain network outages, appear to be beyond the company's control.

References

- 1. https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-tokenization
- 2. <u>https://www.alliedmarketresearch.com/real-estate-market-A06029</u>
- 3. https://www.theasset.com/article/49956/tykhe-debuts-hk-s-first-security-token-offering
- 4. https://www.ledgerinsights.com/tokenized-blackstone-real-estate-fund/
- 5. https://www.finyear.com/First-regulated-Real-Estate-Fund-tokenized_a42010.html
- 6. <u>https://thetokenizer.io/2024/02/22/coreestate-io-pioneers-tokenized-real-estate-in-scandinavia-a-game-changer-in-property-investment/</u>
- 7. <u>https://www.forbes.com/sites/nataliakarayaneva/2024/03/21/blackrocks-10-trillion-tokenization-vision-the-future-of-real-world-assets/?sh=3d623d11535c</u>
- 8. <u>https://www.juliusbaer.com/en/business-navigator/business-navigator/regulation/tokenisation-of-assets-from-a-swiss-legal-perspective/</u>
- 9. <u>https://am.jpmorgan.com/ca/en/asset-management/institutional/insights/portfolio-insights/portfolio-strategy/allocation-spotlight/unlocking-liquidity-in-real-estate-the-strategic-case-for-reits/</u>
- 10. <u>https://www.scmp.com/news/hong-kong/law-and-crime/article/3237733/i-have-cried-many-sleepless-nights-victims-hong-kong-jpex-cryptocurrency-say-scandal-exposes</u>
- 11. <u>https://www.hkex.com.hk/Products/Securities/Real-Estate-Investment-Trusts?sc_lang=en</u>
- 12. https://assets.kpmg.com/content/dam/kpmg/cn/pdf/en/2020/04/real-estate-tokenization.pdf
- 13. https://www.pwc.com/ng/en/assets/pdf/asset-tokenisation.pdf
- 14. https://apps.sfc.hk/edistributionWeb/gateway/EN/circular/doc?refNo=23EC52
- 15. <u>https://www.allenovery.com/germany/-</u> /media/allenovery/2_documents/news_and_insights/publications/2021/06/a_guide_to_hong_k ongs_cyber_security_laws_and_practices_june_2021.pdf
- 16. <u>https://www.tannerdewitt.com/the-regulatory-framework-for-security-token-offerings-in-hong-kong/</u>
- 17. <u>https://asia.nikkei.com/Business/Markets/Property/Hong-Kong-REITs-down-26-this-year-as-investors-exit-China</u>
- 18. <u>https://www2.deloitte.com/cn/en/pages/audit/articles/real-estate-sto-whitepaper-1st-paper-report.html</u>