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**FROM REAL TO DIGITAL:  
ASSET TOKENIZATION AND THE CASE OF BRICKMARK**

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Securitization has now become common place in financial markets around the world. Put simply, it involves collecting assets in an asset pool, then dividing the ownership or cashflow rights of the pool as a whole to investors. Most traditional securitized products that are available on the public market (such as real estate investment trusts or REITs) are managed by professionals, and most of the investors into these funds are institutional investors. These multi-asset funds provide diversification benefits, and like their mutual fund counterparts, charge fees and commissions for operation and performance.

However, as demonstrated in the ABS and CDO markets during the Credit Crisis, these fund-based products can often be difficult to navigate, especially for individual investors. They lack transparency and investors are often at a loss as to where value is being generated and where critical risk factors may be at play. Furthermore, many of these securities are traded in units that are not palatable to the lay investor and involve archaic legal structures that make them only exacerbate opaqueness. As a result, liquidity in markets for these products can quickly dry.

Tokenization refers to the process of registering assets on a Blockchain and securitizing the rights to the ownership or cashflows of the asset in a related token. As pointed out by, Baum (2020) tokenizing essentially seeks to establish a secondary market in these assets where the existing alternative is inefficiency.

Blockchain technology has transformed many aspects of our daily life without us even knowing it, from payment transactions, information sharing, to purchasing a building or even art. Blockchain technology helps reduce cost, lower fraud risk, and improve certainty, trust, accuracy, and efficiency (Cohen et al., 2017; Collomb & Sok, 2016; Guo & Liang, 2016; Wu & Duan, 2019; Zhao, 2019). It enables companies to generate digital securities (tokens) embedded with data (including regulatory compliance) that use to require substantial human

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involvement. Through the use of tokens and smart contracts, blockchain technology is able to bind economic interest and convert legal rights from “real world assets” into programmable blockchain-based digital securities or tokens that are created and transferred by their issuer within applicable regulatory frameworks.

These characteristics are particularly interesting when applied to real estate investment. Real estate is the largest asset class in the world, yet only around 3% of investable real estate is available to public investors. Real estate, as an investment class, has high entry barriers. It is illiquid, has large capital requirement, long investment horizon with long transaction process involving multiple intermediaries. However, the advantages and benefits that blockchain promises through tokenization may be able to overcome many of these challenges.

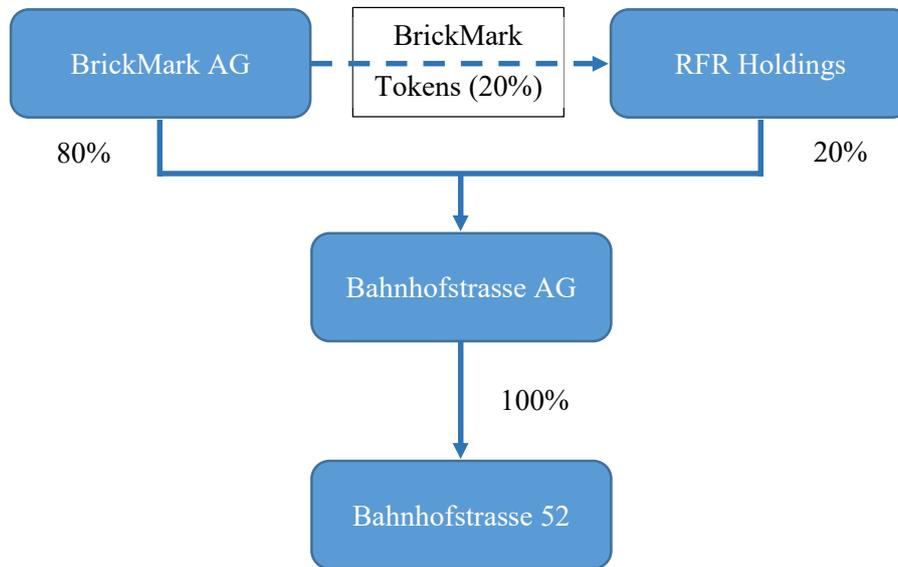
By examining the recent successful acquisition of a real estate property using tokens, we intend to illustrate the benefits of using blockchain to digitally securitize a real estate investment property. In the process, we hope to shed some light for future transactions.

### BrickMark and Bahnhofstrasse 52

BrickMark purchased a commercial property on the renowned Zurich Bahnhofstrasse for CHF 130 million in January 2020 from RFR Holdings, a reputable New York-based real estate investment group known for purchasing the Chrysler Building in 2019. The purchase price is equivalent to around CHF 81,250 (US\$ 89,700) per square meter. By comparison, in 2014, Swatch Group purchased the property on Bahnhofstrasse 30, the Grieder-Haus, for CHF 400 million from Credit Suisse, which amounts to CHF 53,800 (US\$ 55,000) per square meter (Oehm, 2017).

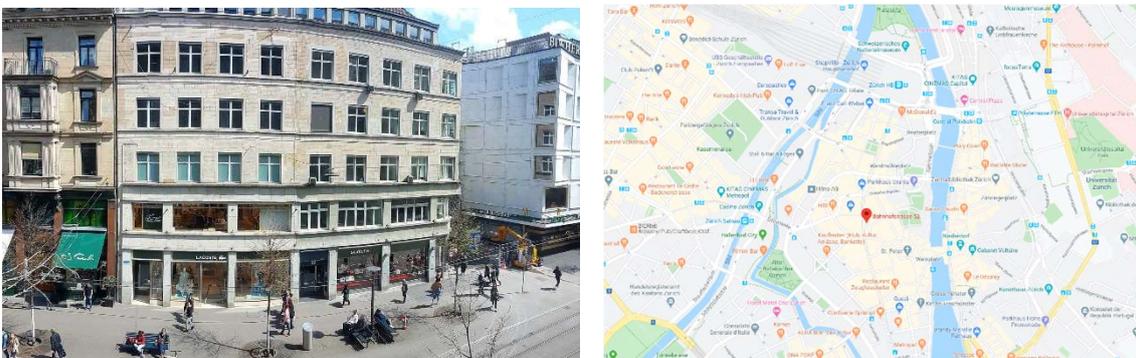
BrickMark acquired the building by purchasing 80% of shares of Bahnhofstrasse AG, the holding company and legal entity (SPV) that owns the property and funded the remaining 20% of shares with BrickMark tokens (BMT) with a call option exercisable by September 2020. This was at the time the largest blockchain token real estate transaction in history. RFR remains a 20% shareholder of Bahnhofstrasse AG from the rights received through BrickMark tokens.

Figure 1: Bahnhofstrasse 52 Ownership Structure



The property acquired by BrickMark is located at Bahnhofstrasse 52 in central Zurich, the heart of the central business district in one of Europe’s most important financial hubs and among one of the world’s most prestigious luxury shopping boulevard. The property has a net leasable area (NLA) of around 1,600 sqm, most of which is being used by office tenants and only around 15% along the ground floor level is being used for retail. By redesigning individual areas in the property, the retail space will be increased by six times, which would more than double the annual rental income without sacrificing any office space (Bloomberg, 2020). RFR will lead the redevelopment process scheduled to begin in early 2021. According to BrickMark, the purchase of this building will be the first of many that will be part their global real estate blockchain based portfolio.

Figure 2: Bahnhofstrasse 52, Zurich Switzerland



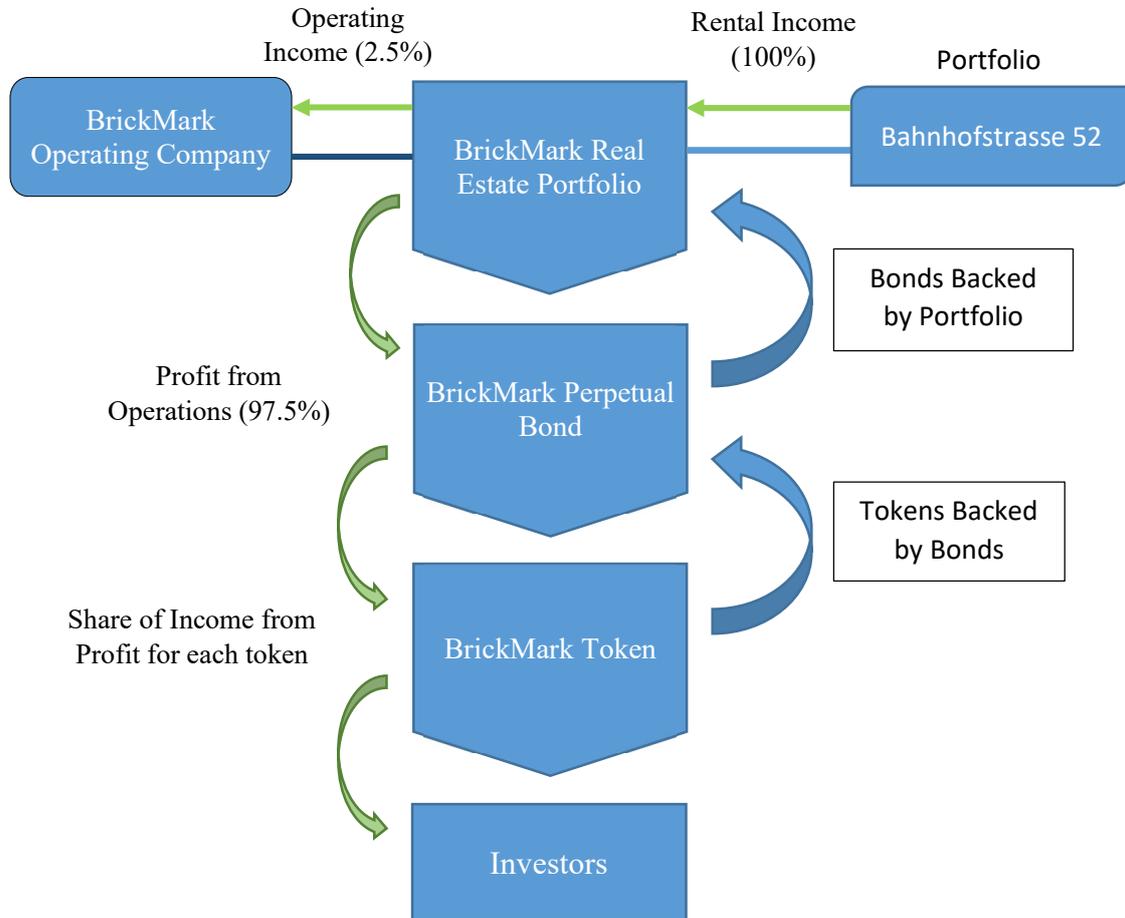
BrickMark AG is a global real estate investor, real estate asset manager, and a pioneer in real estate tokenization. The company is based in Zug, Switzerland with offices in Luxembourg and Berlin. BrickMark created and issued their own proprietary tokens, the BrickMark token, based on the ethereum blockchain ERC-20, a type of cryptocurrency blockchain protocol, and uses smart contracts, a computerized transaction protocols that execute terms of a contract (as defined by American computer scientists Nick Szabo). The tokens is an important part BrickMark's fund raising strategy and process.

### BrickMark Token

The most critical benefit unlocked by tokenization is the increase in market efficiencies as seen throughout the financing and operation phases (Uzsoki, 2019). BrickMark tokens are tokenized perpetual bonds backed by the property in BrickMark's portfolio, Bahnhofstrasse 52. Each token represents one share of the bond, which grants the token owners voting rights, the right to receive part of the rental income generated by the building, and any price appreciation in the property's value proportion to the amount of tokens owned. In other words, this bond represents 100% of all profit from the portfolio (which again, only consist of one asset) and all future increase in value.

The token owners will receive coupons based on 97.5% of the net income from the operating company net cash flow, 2.5% will be the operating company's management fee. The token owners also have the right to 97.5% of the property's (or portfolio's) capital value. These characteristics make the BrickMark token resemble more like an equity than a bond allowing investors to buy and trade their tokens. The recurring payments of the rental income are automatically executed and recorded and any transfer of ownership are recorded by the smart contract. The bond aspect of this structure protects the investors as the tokens can be retired and the assets sold in case the asset becomes illiquid.

Figure 3: Cash Flow Structure of the BrickMark Token



The BrickMark tokens uses smart contract functionalities that are embedded into the tokens to validate the rights and entitlements of its token holders. They are self-executing contracts with pre-determined terms and agreements written in the codes, making the transactions transparent, trackable, and irreversible. As Cointelegraph explains, it functions like an escrow service: both the money and the ownership right will be stored in the system and distributed to the participating parties at exactly the same time. Moreover, the transaction is witnessed and verified by hundreds of people, so the faultless delivery is guaranteed. As trust between the parties is no longer an issue, there is no need for an intermediary. All the functions that an estate agent does can be pre-programmed into a smart contract, while simultaneously saving both the seller and the buyer considerable amounts of money (Cointelegraph).

The smart contract enables BrickMark a high level of transparency and compliance for reporting as well as other efficiencies. Brickmark is a member of the European Public Real Estate Association (ERPA), which represents the leading real estate investment companies in the region and acts in accordance to the ERPA best practice guidelines. They report key

performance metrics consistent with ERPA’s best practice guidelines, and its accounting in accordance with international accounting standards and has adopted a governance code adhering to global institutional investor standards.

Tokenization creates liquidity for the issuer and the investor (RFR and other token holders). As discussed earlier, BrickMark used tokens to finance 20% of Bahnhofstrasse 52 thus creating liquidity for the purchase. Tokens provide token holders income from rental of the asset as well as any price appreciation from the increase in value of the property. The investors can then trade their tokens (which is a proportional representation of a section of the building), in a secondary market creating liquidity for the investors. The smart contract not only establishes the detailed rights and entitlement of the token holders, but it can automatically verify and execute the terms of a contract (such as paying out coupons and fees) in a transparent and efficient manner based on pre-determined parameters, provide governance and compliance in AML and KYC regulations, to name a few.

### Regulatory Framework

Switzerland’s federal government and the Swiss Financial Market Supervisory Authority (FINMA), the Swiss government body responsible for financial regulation including Swiss registered STOs and ICOs, holds a generally positive attitude towards cryptocurrencies, tokenization, blockchain and distributed ledger technology (DLT). The laws and regulations are flexible towards the recent technologies and business models.

FINMA classified tokens into three distinctive categories: payment tokens (cryptocurrencies), utility tokens, and asset (security) tokens. Tokens which qualify as asset tokens are classified as securities under Swiss financial market law “The ICO Guidelines” published by FINMA on February 16, 2018, defining asset tokens as tokens representing assets such as participations in real physical underlining, companies or earning streams, or an entitlement to dividends or interest payments. It also explicitly mentions that the economic function of these tokens are analogous to equities, bonds, or derivatives and are subject to the same regulations (FINMA, 2018).

The BrickMark tokens that were issued in the purchase of the Bahnhofstrasse AG are asset tokens and therefore will fall under the regulations of the relevant Swiss laws. Swiss securities laws are relevant for the issuance of asset tokens or any hybrid form of tokens which

function like asset tokens. Asset tokens are subject to the regulatory framework of the Stock Exchanges and Securities Trading Act of 24 March 1995 (SESTA) and the implementation of Stock Exchanges and Securities Trading Ordinance of 2 December 1996 as they qualify as securities.

The issuance of tokens, as well as any business activity in relation to tokens, by which assets accepted from clients for investment purposes are pooled, or where the clients' assets are managed by a third party on behalf of those clients, could be subject to the requirements of the CISA (Certified Information Systems Auditor) and – as of 1 January 2020 – the FinIA (Financial institute Act) must be analysed from the perspective of the Swiss regulation of collective investment schemes.

Security token offerings are characterized as tokens and required to meet FINMA's published guidelines. STOs are subject to the “Big Five” Swiss Banking Regulations, the Stock Exchange Regulation Act, the Anti-Money Laundering (AML) Regulations, Banking Regulations, Financial Market Infrastructure Regulations, and Collective Investment Scheme Regulations. The “Big Five” are designed to maintain a fair and ethical market, and FINMA is responsible for making sure that companies comply with them.

A Swiss banking licence would be required for a company like Brickmark. According to the Swiss Banking Act of 8 November 1934 (SBA), a banking licence requirement is triggered if a company conducting primarily a financial activity accepts deposits from the public (i.e., from more than 20 persons) or publicly advertises this activity. According to the Swiss Banking Ordinance of 30 April 2014 (SBO), entering into any liabilities would generally qualify as a deposit-taking activity,

Taxation of tokens in Switzerland is comparably lower than other countries. Currently, there are no digital service tax in Switzerland. If an asset token constitutes as a debt instrument, then secondary market transactions can trigger Swiss securities transfer tax.

Sales of crypto assets to the direct shareholder above market value may be subject to a 1% Swiss share issuance stamp duty. The issuance, purchase and sales of Asset-Backed-Tokens are not be subject to value added tax.

### Tokenization vs Securitization

BrickMark’s acquisition of Bahnhofstrasse 52 demonstrated a successful use case of blockchain technology in a financial application. Through the use of tokens and smart contracts, it helps the issuer and investors increase liquidity, transparency, and efficiency while also providing governance in compliance with regulatory demands.

The structure of the transaction is very much like a traditional securitization in that asset are converted into a security. However, instead of issuing standard “paper” certificates, the investors are given “tokens” which are a digital representation of the asset. These “alternative financial mechanisms” enable direct investment in commercial real estate assets without the requirement of typically siloed institutional investment opportunities, yet with all of the security of SEC/FINRA regulation (Hasenstab, 2019). Blockchain technology is able to make the entire transaction process faster, easier, safer, and more transparent.

In an interview with BrickMark CEO, Stephan Rind regarding the acquisition of Bahnhofstrasse 52, the interviewer concluded that this is not an asset tokenization, but the tokenization of the existing shares in an SPV (Baum, 2020). This structure fulfills land law in many jurisdictions and provides an immediate legal structure that can be applied to many real estate assets. Real estate is the world’s largest asset class with total asset valued at US\$ 250 trillion (Savills, 2019). The total investable real estate market is estimated to be around US\$ 80 trillion (Savills) and based on Cushman’s 2018 estimates only about US\$ 2 trillion is being traded annually. This gap simultaneously demonstrates the enormous potential for investment in the space, the overall illiquidity of the asset class, and the high barriers to entry. Real estate investment requires a large sum of capital, long investment horizon, proper skills and knowledge to value the properties, and is a cumbersome asset to own and to sell. Due to these characteristics, real estate investment isn’t suited for ordinary retail investors.

In fact, the majority of the players in the market are institutional investors. According to Preqin industry tracker, fewer than 500 institutional investors accounts for 84% of all real estate investment held in the industry. These institutional investors invest at least US\$ 1 billion into the real estate market, investing on behalf of other institutional investors or individual investors such as pension funds and insurance companies (Whyte, 2018). This is the same in the equities markets where it is estimated that institutional investors own about 80% of all equity market capitalization (Pension & Investment, 2020). In other words, institutional investors provides the majority of the liquidity in the market for both real estate and the equities market. They are not looking to acquire a single asset, but rather other funds that would fit their investment and risk profile as part of their overall portfolio allocation.

Note that, transaction efficiency is only one aspect that blockchains address. Perhaps more important, especially as regards the use of an Ethereum-type platform, is the use of smart contracts. Smart contracts can be programmed to digitally facilitate, verify, and enforce the transfer of value and automatically based on pre-determined agreements. It can be extremely useful when dealing with multiple investors from different jurisdiction, as the rules and regulation can differ for each jurisdiction. Hence, smart contracts become exponentially more valuable as the size of the portfolio (and number of investors) increases.

It is also important to note that Bahnhofstrasse 52 is in a prime location. Further, that a reputable firm is willing to take the tokens as payment cannot be overlooked and highlights the core difference in the investors' preferences. While institutional investors may have the bandwidth to conduct deep due diligence on potential investments, individual investors generally don't so that familiarity of the property and cornerstone investors is critical. They give the transaction credibility and validate this method of transaction as a viable alternative.

Importantly, recall that this transaction is classified as a share deal and hence is regulated under Swiss securities law, providing regulatory protections. Furthermore, should the asset become illiquid, the tokens can be retired and the assets sold. This is similar to liquidating the assets of a company in a traditional "paper" certificate transaction. In the case of default, recourse is clear and the regulatory mandate is ensured.

### Looking Ahead

Tokenization can, of course, also be used for a portfolio of assets, much like a REIT. With the success of this transaction, BrickMark has "proof of concept" and is said to be planning to expand its portfolio. The company's investment strategy is to target high-quality commercial properties in Europe and North America. According to public documents, BrickMark has already identified in their pipeline EUR 1 billion worth of prime commercial real estate properties and are in the due diligence process. BrickMark plans to create a large international real estate portfolio, or a "next generation digital REIT" to be more accurate (OECD, 2020), using the BrickMark token as an integral part of their funding process. The company plans to complete a round of financing from international investors with a target size of over EUR 50 million. Additional tokens will be issued to fund the new acquisitions for new investor participation without diluting the value of existing token holders (Bloomberg, 2020). Currently, the BrickMark tokens are only offered to accredited institutional investors and only

a handful are holding the tokens. BrickMark is currently planning to make the BrickMark tokens available to retail investors through a European-regulated security token offering (STO) (Baum, 2020).

BrickMark has stated that, with many more deals in the pipeline, they view themselves as a fund and that they intend to further tokenize as a multi-asset property fund.

### Final Thoughts

Traditionally, most of the liquidity in the market, particularly in real estate, is provided by institutional investors, who may make investments through their funds on behalf of their investors (other institutions and/or individual investors). Hence it is easy to conclude that an investment product which pools different assets (REITs and mutual funds) are preferred in the market over single asset investments. However, tokenization potentially creates more opportunities for ordinary retail investors to invest in assets that may otherwise require large sums of money by fractionalizing the “shares” of these assets into much smaller investment units.

It will be interesting to see how traditional securitization markets will develop given the introduction of tokenization.

## APPENDIX

Table 1 **Benefits of real estate tokenization**

Potential benefits	Details
Fractionalization	<ul style="list-style-type: none"> <li>● Assets such as real estate have high barrier to entry due to large upfront capital required</li> <li>● Fractionalizing such assets democratizes its access for smaller investors</li> </ul>
Customizability	<ul style="list-style-type: none"> <li>● Tokenization enables exposure to individual real estate assets. Thus, instead of investing in the whole sector, portfolios can be customized down to single buildings.</li> </ul>
Liquidity	<ul style="list-style-type: none"> <li>● Fractionalization increases the pool of potential investors and can unlock global investor base</li> <li>● Secondary markets also facilitate additional liquidity</li> <li>● Liquid assets command a premium and can increase asset value</li> </ul>
Automation	<ul style="list-style-type: none"> <li>● Smart contracts can automate steps such as compliance, document verification, trading, an escrow</li> <li>● Dividends and other cash flows can be programmatically paid when due</li> </ul>
Cost Efficiency	<ul style="list-style-type: none"> <li>● By removing certain intermediaries and increasing efficiency of processes, costs can be lowered</li> </ul>
Settlement Time	<ul style="list-style-type: none"> <li>● Tokens can settle in minutes or hours (depending on the underlying blockchain)</li> <li>● This unlocks the capital that is tied in the market which currently settles at T+3/T+2</li> </ul>
Data Transparency	<ul style="list-style-type: none"> <li>● Secure and visible recordkeeping on blockchain can increase transparency to the underlying data</li> <li>● Especially for complex derivative products, the ability to clearly link a security to its underlying value drivers</li> </ul>
Structured Products	<ul style="list-style-type: none"> <li>● Additional value can be realized once assets are tokenized and that enables the creation of additional layered financial products such as basket of assets and derivatives</li> <li>● Since the underlying is tokenized, creating complex products becomes simpler through coded smart contracts</li> </ul>

Source: MIT (2019)

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