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Real Estate Tokenization

How fractionalization via Blockchain can address liquidity problems in Commercial Real Estate Hospitality industry: A new Business Model Application Proposal

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Introduction

The goal of the paper is to analyze the real estate market, in particular the "Lodging and Hotel" sector, examining both the American and European panorama with a focus on the Italian market. Despite the qualities of this sector, it is necessary to focus on the several problems that afflict the Real Estate market. Starting from the biggest obstacle that does not allow all investors to access this market, the high immobilization of capital, arises a series of solutions that over time has tried to stem this problem. The first of these was the creation of Real Estate Investment Trusts (REITs), defined as mutual funds set up in the form of companies, which deal with the purchase, management and sale of real estate. Participation in REITs allows investors to expose themselves to the real estate market by investing even small amounts of capital. The objective, therefore, in addition to facilitating access to retail investors, is to create a liquid secondary market that allows the exchange of quotas without excessive limitations.

A viable alternative to REITs has arrived with the emergence of new decentralization platforms based on the blockchain that, with the characteristics that distinguish it, has allowed the creation and spread of digital tokens, opening the doors to new opportunities. In this paper we will analyze a possible application of this technology in the real estate market: the asset tokenization. The success of this innovation is to be found above all in the benefits it brings, including greater access to the market, greater liquidity, just to name a few.

The paper then continues with the analysis of the regulatory landscape, American, European and Italian, which regulates this type of investment trying to highlight the effort that regulators make in trying to fill the limits of existing regulations. Unfortunately, however, today one of the great limits for the mass adoption of tokenization lies in the lack of guidelines imposed by regulators and the low standardization of procedures related to this technology.

In order to understand whether this innovation can actually bring positive results to the sector, the paper focuses on the real problems that afflict the lodging sector, in particular the problem of fixed costs that heavily impact on hotel budgets, a problem that is exacerbated in a context of crisis. In this wake is inserted the asset-light strategy, adopted by many large hotel chains, based on the maximum reduction of the ownership of fixed assets, as opposed to the asset-heavy one, thus ensuring greater flexibility of the structure and allowing a greater focus on core business activities.

In order to implement this strategy, many hotel companies opt for REITs and during the course of this thesis we will specifically illustrate how these companies spin off and manage their real estate assets separately by creating a subsidiary company through an operation defined as a "REIT spin off". Unfortunately, however, the REIT route cannot be taken by small-medium sized hotels due to a series

of reasons that will be analyzed in the course of the thesis. At this point, the only viable option seems to be the fractionalization of assets through tokenization.

An empirical example that demonstrates the success of this technology applied to the hospitality industry is the tokenization of the St. Regis luxury hotel located in Aspen, Colorado. It allows us to compare this technology with the main way in which companies can increase their liquidity, the IPO, demonstrating the enormous differences in implementation costs, and not only, that the latter implies, leading the management of the St. Regis to withdraw the decision to list their company and opt for asset tokenization.

The paper concludes with a practical case that illustrates the business model of the tokenization of an asset located in Italy, specifically in the center of Rome. The intention of this practical illustration is to try to answer the question: can tokenization be an option for fractionalizing the ownership of real estate assets?

1. State of Real Estate Tokenization

1.1. Market Analysis

Beginning in the 19th century and continuing into the early 20th, the United States was a rapidly developing real estate market. From 1890 until the beginning of the Great Depression, home prices rose to a peak in 1929; this steep growth was made possible by the economic expansion and population growth that characterized the Roaring Twenties. From 1929 until the conclusion of World War II, there was a high correlation between the price of American property and the stock market[1].

Following the conclusion of the Second World War, a new phase of expansion began, driven by technological progress, which made new construction methods possible, and by the increase in domestic demand for commercial and residential housing. Alongside endogenous factors, there was an intense legislative activity aimed at supporting the development of the real estate market, first with the stabilization of mortgages through the Federal Housing Administration (FHA)[2], then with the establishment of REITs thanks to the intervention of President Dwight D. Eisenhower in 1960[3].

Since 1972, the US REIT market (identified here by the NAREIT index) has outperformed the stock market (S&P 500 index), as evidenced by the comparative analysis. It is only in the last 10 years that the trend has reversed: the average annual return of the S&P 500, in fact, has outperformed the average returns of the real estate market, also due to the crisis of 2008, the genesis of which can be traced back precisely to the real estate market.

TIME PERIOD	S&P 500 (TOTAL ANNUAL RETURN)	FTSE NAREIT ALL EQUITY REITS (TOTAL ANNUAL RETURN)
1972-2019	12.1%	13.3%
The last 25 years	11.9%	12.6%
The last 20 years	7.7%	13.3%
The last 10 years	14.2%	13.2%
The last 5 years	12.5%	9.0%
The last year (2019)	31.5%	28.7%

Figure 1- S&P 500 returns vs Real Estate (REITs) returns. Source: DiLallo, M. (2021, January 8). REITs vs. Stocks: What Does the Data Say? Millionacres. https://www.millionacres.com/research/reits-vs-stocks

[1] Nicholas, T., & Scherbina, A. (2013). Real Estate Prices During the Roaring Twenties and the Great Depression. Real Estate Economics. https://www.hbs.edu/ris/Publication%20Files/Anna_tom_59f6af5f-72f2-4a72-9ffa-c604d236cc98.pdf

[2] FHA is an agency whose is to stimulate the housing market by providing insurances to mortgage.

[3] Team, S. B. (2019, December 18). *A Quick History of Real Estate Investing*. Sherman Bridge Lending. https://www.shermanbridge.com/blog/history-of-real-estate-investing/

However, real estate investments continue to be preferred over stocks. Figure 1 clearly identifies a preference on the part of U.S. investors (except for the 35-44 age group). The reasons for this perception are not to be found solely in the greater apparent simplicity of the type of investment, but have their roots in financial psychology and, in any case, are beyond the scope of this work.

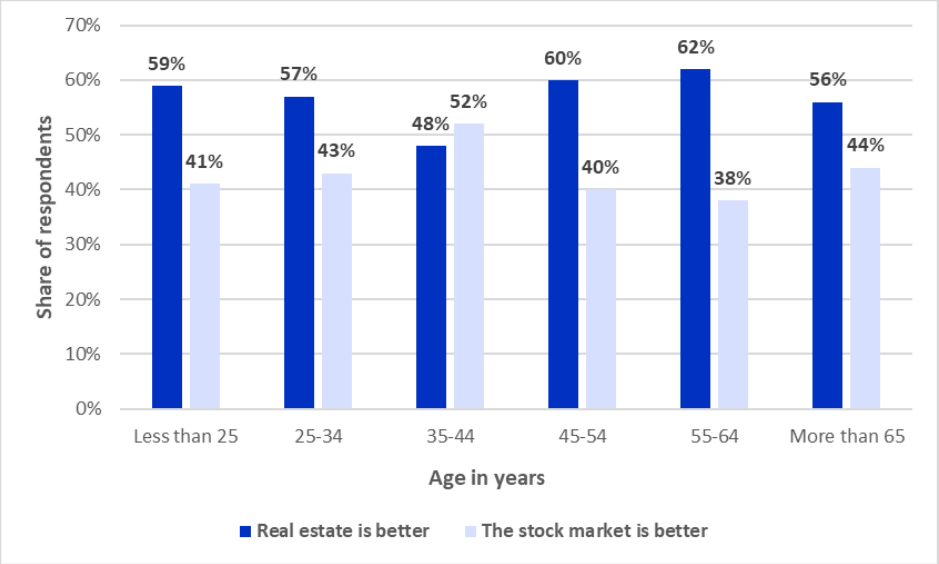

Figure 2 - Consumer perception of long-term investments. Source:Statista. (2020, November 6). Consumer perception of long-term investment in the U.S. 2018, by age. https://www.statista.com/statistics/955838/long-term-investment-real-estate-stock-market-usa-by-age

Nevertheless, it is worth pointing out that real estate investments return, and specifically commercial ones, are not represented only by the higher appreciation of the properties, but also by intermediate cash flows deriving from rents. Finally, one of the most appreciated characteristics of Real Estate is certainly the lower volatility of returns. According to a Morningstar analysis[4], from 1972 to 2017, a 10% portfolio[5] allocation in a REIT would have generated an additional return of 0.3% with unchanged risk, while a 20% allocation would have increased the return by 0.6%. It is clear, therefore, that the advantage in terms of lower risk (given the same return) brought by real estate investments can make this asset attractive not only to value investors, but also to growth investors.

Concerning the Italian market, it is necessary to highlight a general delay with respect to the USA. In fact, the Italian legislator only regulated the activity of Società di Investimento Immobiliare Quotate in 2007.

1.2. Fractionalization of Real Estate

As mentioned earlier, the term "Real Estate" includes within its other subcategories:

[4] Nareit. (2018–2019). *REIT Quick Facts*. Morningstar.
[5] The analysis considered a portfolio allocated as follows: 10% Treasury Bills, 40% Bonds, 50% Stocks.

- Residential
- Industrial
- Land
- Commercial (CRE)

The Real Estate market has many features that make it extremely attractive (low volatility, inflation hedging asset, presence of cash flow, high possibility of diversification within an investment portfolio, high leverage), but it also has many disadvantages, including continuous maintenance, impossibility of diversification within a single investment, large capital and high illiquidity. As has been pointed out[6], the high illiquidity and large capital requirements are also the reason why, in general, the real estate market is subject to low volatility and protects against inflation in the long run, making it more suitable for long-term investments. The biggest barrier is the high level of capital immobilization, which requires an investment in the Commercial Real Estate market, particularly in the "Lodging and Hotel" sector.

An initial attempt to overcome the obstacle posed to the entrance of retail investors into this market was the formation of Real Estate Investment Trusts (REITs). REITs are mutual funds set up in the form of companies, which deal with the purchase, management and sale of properties. Participation in REITs allows individual investors to gain exposure to the real estate market, without the need to invest sums that would otherwise be unavailable. Depending on the method of purchase and exchange of shares, these funds are divided into: 1) listed REITs (traded on the regulated market); 2) unlisted open REITs (private funds that raise funds among investors in a direct manner. Due to their nature, they are extremely illiquid and often have limitations on share trading of several years). However, the generic exposure to the (real estate) market and the illiquidity that characterizes these funds (especially closed ones), as well as the need to use a broker, have prevented the development of a liquid secondary market.

1.2.1. Fractionalization Types

The fractionalization of real estate investments is not limited to REITs, various countries have regulated various institutions such as joint ownership, timeshares, freehold/leasehold (especially in the UK), syndication. Finally, driven by the digitization of recent decades, equity crowdfunding platforms have emerged that allow for the financing and fractioning of real estate units. The possibility offered by these platforms has not, however, been accompanied by the development of a secondary market that is sufficiently liquid to allow their diffusion. The main problem with

[6] Baum, A. (2020). Tokenisation – The Future of Real Estate Investment? University Of Oxford.

crowdfunding platforms is the presence of constraints on the exchange of investment quotas that reduce the liquidity of investments, relegating this system to the role of "last resort" and, therefore, decreeing the failure of the financing campaign in line with the concept of adverse selection.

1.3. Blockchain and Tokenization

Technological development in recent years has allowed the emergence of new decentralization platforms based on the blockchain protocol. In 2008, a white paper was published outlining a new decentralized digital currency (Bitcoin) based on cryptography to solve the long-standing problem of double spending. The innovative scope of the new technology is not related to the cryptocurrency itself, but to the protocol on which it is based: the blockchain (generically meant, not the specific one of bitcoin). Blockchain is a distributed ledger built as chain of blocks containing information about all transactions, whose validation is entrusted to a consensus mechanism. Every node of the network (in a permissionless blockchain) or all the authorized nodes (in a permissioned blockchain) are required to take part in the process of validation of new transaction that are to be included in the ledger. If some transactions are manipulated, the new block is excluded from the blockchain; hence, the fairness of transactions is guaranteed. Immutability and security of transactions are ensured by a cryptographic algorithm (so-called hash) that makes it impossible to modify blocks without the consent of 50%+1 of the nodes participating in the blockchain. Every block of transactions is “closed” with a hash that compose the first line of the new block (that is why is called blockchain). The main features of this protocol are therefore: decentralization, immutability, transaction tracking, pseudonymity, disintermediation, transparency and programmability. It is precisely this last aspect, programmability, that has allowed the emergence and spread of digital tokens.

1.3.1. Asset Tokenization and Token Types

Asset tokenization can be considered an expansion of blockchain technology, which allows the digitization of a set of information related to the ownership rights of real assets recorded on the blockchain. When tokens incorporate additional rights (e.g., profit sharing rights), these can be managed through **smart contracts**.

Regardless of the type of asset being tokenized, the goals and benefits behind tokenization are the same:

- Increase the liquidity of assets that would otherwise be illiquid;
- Improve transparency of transactions through the automation of smart contracts and pseudonymity;

- make investments traditionally reserved for the wealthiest segments of the population accessible (see the phenomenon of crypto-art and NFTs);
- reduce the cost of transactions through disintermediation and automation of contracts;

Based on the function and type of rights they incorporate, four categories of tokens can be distinguished[7]:

- Payment tokens - are considered an alternative means of payment, but unlike fiat currency they are not legal tender, are not backed by the central government and have no traditional intermediaries. The purpose is therefore to be a decentralized tool for the exchange of goods;
- Utility tokens - grant the owner the right to access a function or service developed by the issuer without having the characteristics of a means of payment;
- Asset tokens - are similar to financial instruments, in fact they are also known as investment tokens, and generally grant the owner patrimonial rights such as, for example, the right of ownership or the right to a share of future profits or cash flows[8];
- Hybrid tokens - offer a combination of the various token categories.

This subdivision is not only relevant on a theoretical level, but also on a regulatory level, as will be seen in the regulation section.

1.3.2. Real Estate Tokenization

Before dealing with the advantages of the practical application of tokenization to commercial real estate, it is worth briefly examining the procedural aspect of tokenization. First, once the asset to be fractionalized has been identified, an SPV (Special Purpose Vehicle) is created to manage the asset. The intermediate step of the SPV is necessary given that most regulations do not allow the direct division of an asset, but only the company that manages it. Next, tokens are generated on the reference blockchain (usually Ethereum) and payment flows are automated via smart contracts. The platform that issues the tokens has the task of providing for the fulfillment of regulatory obligations (including the KYC - Know Your Customer - process) and information as required by the specific regulation on STOs based on the target investors. Finally, of particular importance is the mode of custody of the tokens' private keys, which can be entrusted to investors or managed by the platform itself.

[7] Planet Compliance. (2021). What is the difference between utility, security and payment tokens?
[8] Deloitte. (2020). Are token assets the securities of tomorrow? https://www2.deloitte.com/content/dam/Deloitte/lu/Documents/technology/lu-are-token-assets-the-securities-tomorrow.pdf

1.3.3. Tokenization Benefits

Undoubtedly, tokenization of real estate assets brings with it certain advantages that will be analyzed within this work: greater liquidity, greater access, greater transparency and lower transaction costs[9].

Increased liquidity – tokenization of assets enables secondary market trading of tokens, benefiting both sellers and investors. Investors have greater access to the market, thus providing greater freedom of exchange, which translates into increased liquidity. At the same time, sellers benefit from a more liquid market without sacrificing the so-called "liquidity premium"[10] granted to holders of assets that by their nature are indivisible. Unlike REITs, there are no minimum holding periods for units (nor repurchase at a lower figure[11]), so it is more likely that a more liquid secondary market will be created compared to the one that currently exists for closed REITs. Finally, a more efficient secondary market would also ensure a more accurate pricing mechanism.

Increased access – even if currently tokenization projects for Real Estate investments are almost exclusively targeted at accredited investors due to regulations, there is no reason to believe that in the future the democratization enabled by new technologies will not make them within everyone's reach. The Blockchain offers the possibility to make this market accessible also to small investors thanks to tokens that, being divisible, allow retail investors to buy even a small percentage of the underlying asset. The high capital required is, at the moment, the main obstacle preventing real estate investments from reaching various segments of the population.

Increased transparency - due diligence of real estate assets is a long and expensive process, and, in any case, the information asymmetries that exist between seller and buyer can hardly be leveled. On the contrary, traceability and transparency are two pillars of blockchain, so the huge amount of data (which is currently not available to anyone) can, in the future, be used to make assumptions of financial models more accurate thus improving transactions. Of course, how the data is entered on chain remains critical[12].

Reduced costs - since the trades of tokens are completed through smart contracts, part of the exchange process is guaranteed by an automated process. Unlike REITs, which have management

[9] Uzsoki, D. (2019). Tokenization of Infrastructure. The International Institute for Sustainable.
[10] Asset Tokenization: Bringing Real-World Value To Blockchains and DeFi. (2021, August 2). Chainlink Blog. https://blog.chain.link/asset-tokenization-bringing-real-world-value-to-the-blockchain/
[11] In REITs, discount to NAV is used to refer to the repurchase of units by the trust at a lower value than the net asset value (units are valued as assets less liabilities).
[12] For further discussion, see the "Oracle Problem".

costs and transaction fees both during the purchase and exchange of quotas, smart contracts have costs determined by the Exchange on which the tokens are exchanged and costs related to the network (gas fees). It follows therefore that this type of operation offers considerable advantages in terms of reduction of intermediaries and lower transaction fees which translate, therefore, into lower costs for both the issuer and the investors.

1.4. Security Token Offerings and Regulation

In recent years, the market has seen the creation of 2000 new tokens and cryptocurrencies[13], and this is mainly due to the emergence of a new way of financing innovative projects (based on the blockchain) known as Initial Coin Offering (ICO). During ICOs, projects raise funds to finance the development of their business by distributing tokens in the form of cryptocurrency. Unfortunately, as it often happens when a new market is flooded with unregulated instruments, many of these operations have turned out to be fraudulent; hence the need for supervisory bodies to act in order to regulate an instrument that is still in an immature stage, but that has the potential to establish itself as the standard of an exponentially growing market. This need has led to the affirmation of Security Token Offering as a new system (compliant with the indications issued by the regulators of the various countries) of offering tokens to the public.

Security Token Offerings are defined as a regulated offering of securities via blockchain technology. The instrument through which this offering is made possible are digital tokens, specifically asset tokens since the underlying asset offered is a security. Since the securities we are talking about are represented by tokens based on the blockchain, it is appropriate to make a distinction between Security Tokens and Tokenized Securities. Tokenized Securities are digitized securities that are exchanged in the form of tokens via blockchain, while Security Tokens are digital representations of the securities referred to the asset (also called equity tokens), they are therefore separate objects that grant rights. The difference takes on specific value in the regulatory framework because of the difficulty of defining security tokens.

Even if there are differences at the regulatory level between countries, there is uniformity in subjecting all tokens that incorporate equity and cash flow participation rights (tokens that represent an investment) to the regulations governing securities. In other words, legislators in the most advanced countries in terms of consumer protection (in the scope of this analysis reference will be considered US and European regulations) have decided to treat a security token as a form of investment, without considering the technological platform, following a so-called "technology

[13] Rugaard, M. J., & Sørensen, K. T. (2019). Tokenizing real-world assets- towards a regulated and stable token-driven economy. The Tokenizer.

agnostic" approach. Beside the specific regulation related to the material realization of a STO, it must be remembered that cryptocurrency exchanges, and therefore also token issuers, are subject to the KYC (Know Your Customer) and AML (Anti-Money Laundering) regulations. Compliance with KYC is required for two main reasons: first of all, it responds to the need for government agencies to be able to identify and trace the holders of certain investment assets at any time; secondly, it serves to identify the investor's level of awareness in relation to the type of investment. AML, on the other hand, is aimed at preventing the concealment and injection of illicitly obtained funds into the financial system through the constant monitoring of financial transactions by intermediaries.

1.4.1. US Regulation

In the United States, the Securities and Exchange Commission (SEC) is the supervisory body responsible for regulating securities[14]. The following is the formal definition of security:

The SEC has also adopted the classification of tokens into money-like, utility and security tokens. To identify whether an instrument belongs to the category of securities, the so-called Howey Test[15] is used. According to the Test, an investment qualifies as a security if certain conditions are met: 1) there is an expenditure of money; 2) the investment needs to be made in a common enterprise; 3) the investor expects to receive profits from the activity of a promoter or third party. If the asset meets the requirements of the Test, it is considered a security and subject to SEC regulation.

Returning to the regulation of securities, and more specifically STOs, the SEC has defined certain "rules" to cover a wide range of conditions[16]:

- Reg A
- Reg A+
- Reg CF
- Reg D (506b)
- Reg D (506c)
- Reg S

[14] For the formal definition of a security, see *Appendix – Definition of Securities*

[15] For further discussion, see SEC.gov | Framework for "Investment Contract" Analysis of Digital Assets. (2019, April 3). U.S. Securities and Exchange Commission. https://www.sec.gov/corpfin/framework-investment-contract-analysis-digital-assets

[16] For further analysis, see *Appendix - Regulation*

A. (2019, April 4). U.S. Securities and Exchange Commission (SEC) STO Regulations. STOAnalytics. https://stoanalytics.com/faq/u-s-securities-and-exchange-commission-sec-sto-regulations/

	Reg A	Reg A+	Reg Cf	Reg D (506b)	Reg D (506c)	Reg S
Issuer	US and Canadian companies not SEC registered	US and Canadian companies not SEC registered	US companies not SEC registered	All US and foreign companies	All US and foreign companies	All US and foreign companies
Investors	All investors	All investors	All investors	Up to 35 not accredited investors	Only accredited investors	All US and foreign investors
Offering	$20 millions	$50 millions	$107,000 - $1 million CPA revision $1 million - $5 millions audit	No limits	No limits	No limits
Limitations	Blue Sky Laws compliance	-	FINRA registered platforms	No general marketing	-	-

Table 1 - US Regulations; Source – personal elaboration

1.4.2. EU Regulation

In the case of the European Union as well, the distinction between security token, utility token and payment token is relevant for the purpose of identifying the appropriate regulatory framework. In 2018, with the FinTech Action Plan, the European Commission mandated the supervisory bodies (EBA, EIOPA and ESMA) to verify the degree of application of existing laws to new crypto assets. According to the EBA report[17], the majority of tokens fell outside the scope of financial regulation and therefore further regulatory activity[18] was required. Current regulations only apply to investment tokens (MIFID II) and payment tokens (EMD2), while residual categories, such as utility tokens and hybrid tokens, fall into a regulatory gap (at the European level) that must be filled by national regulators.

Additional fragmentation is generated also within the same category of investment tokens (or security tokens, to recall the term used by the SEC): as highlighted in the document accompanying the European Commission's Proposal for the Regulation of Crypto-assets Markets[19], even if security tokens fall within the category of "transferable securities" under MIFID II, each State is free to give a different definition. In addition, and this is the central point of the limited nature of the current regulations, even if a crypto asset qualifies as a security token under MIFID II, there are still grey areas that cause uncertainty since the entire framework was not conceived to regulate this type of instrument, and consequently the mere application of the regulations translates into a considerable

[17] European Banking Authority. (2019). Report on crypto-assets.
[18]Further regulatory activity is expressed by MiCA proposal (Markets in Crypto-Assets Regulation). For further reading see the Proposal developed by European Commission
European Parliament and Council of the European Union. (2017). Regulation (EU) 2017/1129 of the European Parliament and of the Council of 14 June 2017 on the prospectus to be published when securities are offered to the public or admitted to trading on a regulated market, and repealing Directive 2003/71/EC. Official Journal of the European Union. Published.
[19] European Commission. (2020). Proposal for a Regulation of the European Parliament and of the Council on Markets in Crypto-assets and amending Directive (EU) 2019/1937. https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SWD:2020:0380:FIN:EN:PDF

brake on market development. A clear example is the obligation imposed by the CSDR (Central Securities Depositories Regulation) to register transactions involving securities subject to MIFID II with a CSD (Central Securities Depositories), an obligation that also applies in the case of crypto assets based on a technology capable of replacing any register (DLT). These regulatory gaps emerge due to the technological and operational specificities of the new technology, which impose new challenges, such as the consideration of additional cyber risks or the definition of the custody of private keys. The need for a clearer and more uniform regulation does not only derive from the need to protect European consumers, but also from the opportunities that an adequate and productive regulatory framework can grant to a market that, although in its initial phase, presents enormous potential.

Apart from the challenges faced by the European regulator in building a new *ad hoc* framework, we will continue the analysis by briefly explain which are the reference regulations that currently govern Security Token Offerings.

As cited earlier, if a token is classified as a security token, it is treated as a financial instrument and therefore subject to MIFID II. However, in order to provide a holistic view of the status quo, it is appropriate to mention also the other regulations that rule financial instruments:

- Prospectus Regulation - if the token qualifies as a "transferable security", the issuer is subject to the obligation to publish a prospectus on the nature of the investment and related risks. According to the Prospectus Regulation[20], issuers wishing to raise more than €1 million are obliged to publish a prospectus, however, each member State has the option to increase this threshold up to €8 million. In any case, States may decide to require other types of disclosure requirements, as long as these are not excessively onerous. Furthermore, the Prospectus[21] is not mandatory if the securities offering is, *inter alia*: i) intended only for qualified investors; ii) intended for less than 150 non-qualified investors per State; iii) composed of tokens with a nominal value of not less than €100,000;
- European Crowdfunding Service Providers (ECSP)[22] – in October 2020, the European Parliament and the European Commission approved the proposed regulation of equity crowdfunding platforms, amending certain requirements set out in Prospectus regulation

[20] European Securities and Markets Authority. (2020). National thresholds below which the obligation to publish a prospectus does not apply.
[21] European Parliament and Council of the European Union. (2017). Regulation (EU) 2017/1129 of the European Parliament and of the Council of 14 June 2017 on the prospectus to be published when securities are offered to the public or admitted to trading on a regulated market, and repealing Directive 2003/71/EC. Official Journal of the European Union. Published.
[22] European Union law. (2020). Regulation (EU) 2020/1503 of the European Parliament and of the Council of 7 October 2020 on European crowdfunding service providers for business, and amending Regulation (EU) 2017/1129 and Directive (EU) 2019/1937. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020R1503

2017/1129. Specifically, the new proposal (which will come into force on November 10, 2021) reduces the maximum capital raising threshold to € 5 million (from the previous € 8 million) and introduces the obligation to publish a standardized document containing all the information related to the investment (Key Investment Information Sheet - KIIS).[23]

- Central Securities Depositories Regulation (CSDR) and Settlement Finality Directive (SFD) require that payments and settlement of transactions involving securities must be approved by intermediaries approved under the SFD. In addition, if the tokens are "transferable securities," they must be registered with a CSD;
- Safekeeping of securities - establishes that safekeeping of private keys is not a requirement currently recognized by European law;
- Market Abuse Regulation (MAR) - regulates that since tokens are traded on the primary and secondary market, the issuer has an obligation to prevent insider trading;
- Know Your Customer (KYC) and Anti Money Laundering (AML) - issuers and exchange platforms are required to collect personal data from investors for AML purposes.

1.4.3. Italian Regulation

In Italy, Consob has the duty to regulate financial markets, and always acts on the basis of the regulatory framework set up by European supervisory bodies. Italian law does not expressly contemplate the possibility of tokenizing an asset, however, the dematerialization of securities[24] is made possible through the centralized management companies.

In the context of STOs, the reference legislation is still MIFID II, implemented in Italy with the Consolidated Law on Finance (TUF). Since the TUF belongs to the laws of primary rank, Consob cannot in any way derogate from the general lines dictated by the European bodies (transposed in Italy as ordinary laws) but must limit its activity to issuing clarifications regarding the areas of manoeuvre provided for by MIFID II. In the specific case, therefore, security tokens must be equated with transferable securities and subject, therefore, to MIFID II. In March 2019, Consob published a consultation document[25] to clarify the constituent elements of tokens (especially tokens that cannot be assimilated to financial instruments) and the regulatory approach towards ICOs and the trading of

[23] "*In Article 1(4) of Regulation (EU) 2017/1129, the following point is added*:
*'(k) an offer of securities to the public from a crowdfunding service provider authorised under Regulation (EU) 2020/1503 of the European Parliament and of the Council (*3), provided that it does not exceed the threshold laid down in point (c) of Article 1(2) of that Regulation.*" European Union law. (2020). Regulation (EU) 2020/1503.
[24] Bonolis, P., & de Feo, I. (2019). STO regulation and law in Italy | CMS Expert Guides. CMS Law.Tax. https://cms.law/en/int/expert-guides/cms-expert-guide-to-security-token-offerings/italy
[25] Le offerte iniziali e gli scambi di cripto-attività. (2019). Consob.

these instruments[26]. In any event, as expressly indicated by Consob, security tokens linked to an "entrepreneurial project" are financial instruments within the meaning of MIFID II. Subsequently, the regulator has published the Final Report[27] (January 2020) in which it extends the application of the financial regulations also to asset tokens (a category that initially fell outside the discipline in that they were not part of the "entrepreneurial project"). Among the main indications, Consob has clarified that: the identifiability of the token holders must be ascertained by the administrator of the primary offer platform and guaranteed by the organizer of secondary exchanges, but not after the exchange phase[28]; as far as the exchange of tokens is concerned, the negotiability of the instruments must always be contemplated on platforms authorized by Consob or by foreign authorities that have stipulated cooperation agreements with Consob itself; no minimum capital or organizational requirements have been established, but given the nature of the instruments, particular attention has been requested to the transparency of white papers. On the other hand, platform managers are obliged to ensure the reliability of the technology used. Finally, the activities of "digital wallet service providers" (customer identification, crypto asset protection, identification and risk management)[29] need to be regulated.

As for the prospectus linked to the issuance of securities in compliance with the Prospectus Regulation, Italian law[30] establishes that companies are exempt from the obligation to publish a prospectus if the offer of securities is, *inter alia*[31]: i) intended only for qualified investors; ii) intended for less than 150 non-qualified investors per State; iii) relating to a total investment of less than €8 million; iv) composed of tokens with a nominal value of not less than €100,000.

From what has been said so far, it emerges the need for a clear and homogeneous discipline at European supranational level that is designed specifically, but not limited to, for the applications of DLT and Blockchain technology in the financial sector. The need to prepare general guidelines, is currently a limitation that national regulators have tried to remedy by acting within the spaces that the Treaties recognize. However, this partial autonomy does nothing but fuel the fragmentation that hinders the development of a market that undoubtedly represents the future. In this context, the Italian

[26] Che cos'è un Security Token Offering STO? (n.d.). Opstart.it – Equity Crowdfunding. Retrieved September 18, 2021, from https://www.opstart.it/security-token-offering-sto/
[27] Le offerte iniziali e gli scambi di cripto-attività. (2020). Consob.
[28] Morelli, C. (2020, January 13). Crypto-attività tramite DLT: il quadro normativo proposto da Consob. Altalex. https://www.altalex.com/documents/news/2020/01/13/crypto-attivita-tramite-dlt-quadro-normativo-proposto-da-consob
[29] Le offerte iniziali e gli scambi di cripto-attività. (2020). Consob.
[30] Consolidated Law on Finance (Legislative Decree 58/1998)
[31] Bonolis, P., & de Feo, I. (2019). STO regulation and law in Italy | CMS Expert Guides. CMS Law.Tax. https://cms.law/en/int/expert-guides/cms-expert-guide-to-security-token-offerings/italy

regulator's effort to cooperate with industry players in the preparation of a "regulatory sandbox" while waiting for total and complete regulation is worthy of praise.

2. Special Case of Hotels

As already mentioned, within Commercial Real Estate, there are various sub-categories relating to the purchase, sale and management of a property with the aim of making a profit from the increased resale value and/or intermediate cash flows. Since the purpose of this paper is to investigate, or rather, verify the possibility of applying tokenization to real estate assets for hotel use, we will continue the analysis by presenting a distinction between the typical operations of Real Estate (meant separately from the business activity) and those specific to the hospitality sector. Subsequently, the focus will be shifted to the hotel business model in its various forms, with particular attention to the Italian market, but always bearing in mind the European trend. Finally, spinoff operations through REITs will be considered.

2.1. Real Estate vs Hotel Operations

The operational management of a property typically places a different burden on the landlord than the management of the business conducted in it. Companies that own real estate assets are generally engaged in optimizing processes related to financing, purchasing, leasing, maintaining and in some cases even selling the asset[32]; while lodging firms are more focused on day-to-day management.

2.1.1. Real Estate Operations

The majority of operations are concentrated in the management of real estate assets, however, based on the processes on which owners focus and the size of operations, various types of players can be distinguished[33].

- **Real Estate Private Equity** – are closed-end funds that collect investments through private investors (Limited Partners - LPs). The activities of REPE follow the entire life cycle of investments in Real Estate (financing, purchase, development and management of the property), with particular attention to the exit of the investment. Usually REPEs are organized in funds with a specific investment mandate linked to certain characteristics of the assets; they in fact look for opportunities limited to a sector (hotel, office, industrial, etc.), to the size of the investment, to a geographical area, to a strategy (purchase and resale, purchase and renovation, etc.) or to the role in the deal (they can act as general or limited partner). Given

[32] PricewaterhouseCoopers. (n.d.). Real Estate Management – Strategy and operational business model for achieving greater efficiency. PwC. Retrieved September 18, 2021, from https://www.pwc.de/en/strategy-organisation-processes-systems/real-estate-management-strategy-and-operational-business-model-for-achieving-greater-efficiency.html
[33] Wall Street Prep. (n.d.). Real Estate Investment Firms: Who & What. Retrieved September 18, 2021, from https://www.wallstreetprep.com/knowledge/types-of-real-estate-companies-reits-vs-repes-vs-reocs/

the private nature of REPEs, they are subject to lighter taxation than their public counterparts such as REITs.

- **Real Estate Investment Management and Asset Management** – are investment funds that aim to finance the purchase and management of real estate assets to generate a return for investors. They can have an open or closed-end structure and create value through asset management.
- **Real Estate Development** – are companies that deal with the development and improvement of the acquired property in order to manage or resell it.
- **Real Estate Investment Trust** – are trusts whose purpose is to invest in real estate assets by raising capital from investors and may be organized in public (listed or unlisted) or private form.
- **Real Estate Operating Companies** – sono aziende che investono nel mercato immobiliare raccogliendo capitali nel mercato. A differenza dei REIT, i REOC seguono una strategia di investimento a lungo termine, comprando i terreni e costruendo le proprietà per rivenderle agli investitori.
- **Real Estate Brokerage** – are intermediaries that operate with the aim of connecting the two sides of the transaction; they also develop networks between other players and investors, to facilitate both the raising of capital and the phases of purchase and sale of assets.
- **Real Estate Lenders** – are agents whose function is to simplify access to credit for investors operating in Real Estate. Depending on the degree of risk aversion, the audience of fund lenders varies from insurance companies (more conservative) to debt funds (less conservative). Real estate loans are usually secured by the target of the investment.

Obviously, the type of operations performed by these companies varies according to the focus of the specific activity; therefore, REPEs will be more focused on the valuation, purchase and sale phase compared to RE Lenders whose purpose is to provide capital in the form of debt.

2.1.2. Hotel Operations

The operations inherent in the hospitality business, on the other hand, deal with the day-to-day management of hospitality facilities. In particular, the administration of a hotel is composed of the following activities:

- Food and beverages
- Marketing
- Rooms management
- Facilities maintenance

- Financial management
- Housekeeping and security (including cybersecurity)
- Human resources management

Each area includes its own operations, the management of which is not always delegated to the general manager; in fact, often, on the basis of the operating model adopted (as will be seen shortly), hotels decide to manage certain processes externally.

2.2. Hotel Business Models

The matching between a firm's strategy and its organizational structure is a fundamental requirement for its success and, therefore, for its survival. The two forces shaping and influencing this correspondence can be attributed to both internal and external factors. On the one hand, the decisions relating to the chosen organizational strategy determine the degree of flexibility and proactivity that the firm can exercise towards the elements of the market ecosystem (clients, suppliers, etc.); on the other, the immutable forces of the environment in which it operates influence these decisions. Thus, business organizations simultaneously influence and react to the external environment[34].

In the hospitality industry there are four main organizational models: independent, franchise, management agreement and lease agreement.

- **Independent (directly owned and managed)** – This category includes all hospitality businesses that are directly managed by a single party that also owns the real estate asset. Since the owner of the asset and the hotel business coincide, the alignment of interests between the parties is perfect, so no additional monitoring costs are incurred. Clearly, the advantage of direct management is the wide freedom enjoyed by the hotel owner/manager, both in terms of asset management and operations. This discretion, however, greatly reduces the flexibility of the business in the face of unfavorable cycles, placing a significant burden on the balance sheet of the business.
- **Hotel Management Agreement** – The management contract requires the owner of the real estate asset to cede the management of the hotel to an outside company, which may also be a hotel chain, in exchange for the payment of a fee. Generally, the owner is responsible for managing the asset, including maintenance and FF&E, while management is responsible for the day-to-day operations of the business. Given the nature of the contract, performance

[34] Chekitan, D. S., & Brown, J. R. (1990). Franchising and Other Operating Arrangements in the Lodging Industry: A Strategic Comparison. Hospitality Research Journal.

monitoring by the owner is more complex, but management's operational freedom can be reduced with specific clauses; in any case, ongoing collaboration between the parties is required. Despite the complexities associated with this business model, the asset owner can invest in the hospitality industry even if they do not have extensive experience. Finally, particular attention must be paid to the criteria for distributing cash flows, and to the fee structure, which can be composed of a fixed plus a variable portion based on results. Among the key benefits to the asset owner is undoubtedly the greater control over the management of the property and the right to a greater share of the revenues. In addition, the presence of qualified management makes it easier to find the necessary funding. In most cases, hotel brands prefer to expand through management contracts rather than leases (mainly due to the flexibility granted by an "asset light" strategy), leading to a greater use of this type of contract. The brand company responsible for managing the business benefits from expansion with a relatively low investment and low operational risk, as remuneration can only be partially linked to performance. The greatest risk taken on by management is linked to the loss of control over the asset; poor administration of the property could, in fact, lead to poor performance independent of the manager's skills.

- **Franchise** – The franchise agreement establishes that the owner of the asset (franchisee) manages the hotel according to the criteria imposed by the owner of the brand (franchisor), upon payment of a franchise fee. The owner of the hotel can manage it either directly or through an external management company, as in the case of third party operators (TPO)[35]. The franchise agreement allows the franchisee to benefit from the brand, direct access to the franchisor's network and an already developed and established marketing system, while assuming a relatively low operational risk. However, since the business owner operates in the market with the concession of a brand, he is required to comply with the standards and requirements of the franchisor brand and is subject to strict periodic controls. In the event that the operational management of the hotel is entrusted to a third-party company, a conflict of interest could arise between the work of the management, which is more oriented towards satisfying the interests of the business owner, and the interests of the franchisor, resulting in a dynamic known as the "agency dilemma". Obviously, the franchisor benefits from a low-cost expansion of its brand while losing operational control. In addition, the monitoring costs associated with the franchise agreement are lower than those associated with the management contract. As mentioned above, the franchisee gains access to an already tested business

[35] For further information, see the Appendix

system; the franchise agreement implies, however, the acceptance of commercial policies defined by the brand owner, who usually operates on a global scale, and which may therefore have a low return at the level of the individual hotel. In addition, the stringent requirements of the franchisor often demand the employment of an experienced management team. On the other hand, from the brand owner's perspective, the main advantage lies in the low-cost diffusion of the brand; furthermore, it should also be considered that the low monitoring costs and the possibility of cancelling the contract, should the franchisee violate the terms of the franchise, considerably reduce operational risks. The only negative aspects to be noted are the low share in the results generated (there is only a franchise fee) and the risk of image damage, which although minimal is always present, deriving from the possible poor management of the franchisee.

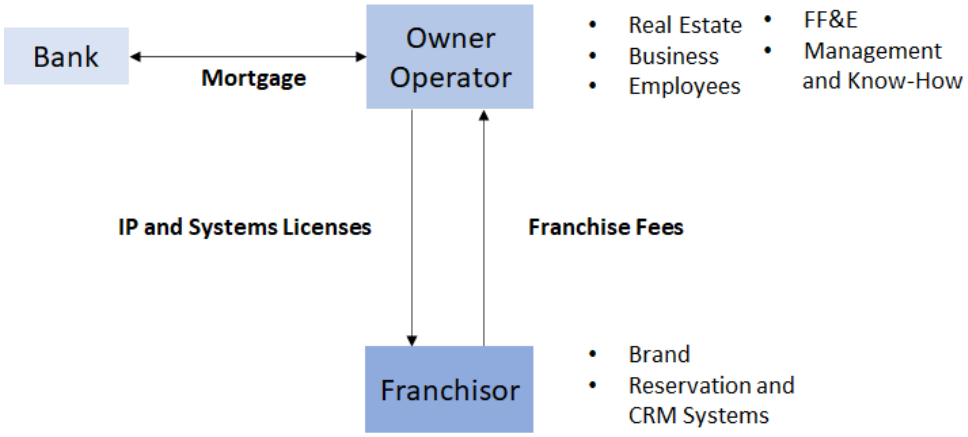

Figure 3 – Franchise Business Model. Source: AUTIN&Co (AUTIN GmbH). (2020, December 8). What Are The Hotel Operating Arrangements? Hospitality Net. https://www.hospitalitynet.org/explainer/4101983.html

- **Hotel Lease Agreement** – The leasing contract involves one party granting the other the use of an asset, for a defined period of time, in return for the payment of a periodic fee. In this specific case, the owner of a property leases it to the lessee who will manage it as a hotel. The main feature of this contract is that there is no operational relationship between the parties; in fact, the hotel operator has no obligations to the asset owner (other than those typically found in a standard lease, such as routine maintenance). At the same time, the lessor assumes no operational risk, merely receiving a fixed or variable rent. The lease contract business model provides that the management of the hotel can be outsourced to a third-party company. In recent times, the need to lighten the balance sheets of hotel chains, and more generally of operators in the sector, has led to the pursuit of so-called "asset light" strategies: sale-and-leaseback contracts are increasingly used, in which the hotel manager, who also owns the asset, sells the property to a financial intermediation company (often a bank) which, in turn,

leases it back to the manager upon payment of a rent[36]. Alternatively, there has been widespread use of leases with variable payments, which are not required to be recorded under corporate liabilities but may only be shown in the income statement[37]. From the owner's point of view, leasing has the great advantage of having stable, pre-defined cash flows, thus reducing the risk of the operation. However, hospitality brands prefer to use the franchise model, so there is some difficulty for smaller hotels in attracting capable managers. From the hotel manager's perspective, however, leasing allows for maximum control over operations, given the total separation of the roles of owner and manager. Therefore, since there is no sharing of operating results, in the case of a positive cycle, leasing allows for maximum profit generation (as opposed to management agreements and franchising) - everything remaining after payment of expenses belongs to the hotel operator; whereas, in the case of a negative cycle, the fixed costs of the fees must still be incurred.

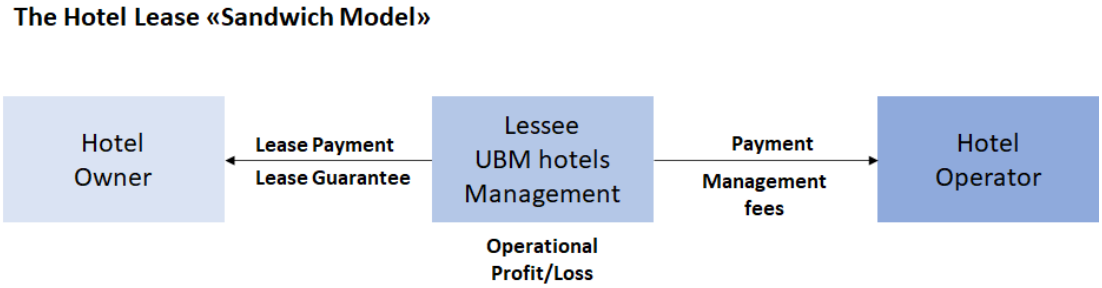

Figure 4 – Hotel "Sandwich Model. Source: AUTIN&Co (AUTIN GmbH). (2020, December 8). What Are The Hotel Operating Arrangements? Hospitality Net. https://www.hospitalitynet.org/explainer/4101983.html

Lastly, it was decided to mention briefly the case of hotel chains, i.e., a group of accommodation units located in different territories that operate under the same brand and management. This structure is not part of organizational models but represents an aggregate within which there can be various cases: it can be managed directly by the company that also owns the assets on which it operates (chain owned-and-managed); it can be managed directly by the corporate that uses the asset on the basis of a leasing contract (chain leased-and-managed); it can be managed by the company on behalf of investors on the basis of a management contract (chain managed).

The organizational models analyzed so far represent different degrees of vertical integration of the various operational activities: an independent hotel manages most of its operations externally (e.g., laundry, cleaning, etc.), and, as a result, has the lowest degree of vertical integration; on the other hand, a chain of hotels, given the management of all processes at corporate level, has the highest degree of vertical integration. Franchising and management agreements represent an intermediate

[36] This is the so-called "sandwich model".
[37] Grant Thornton. (2019). Insights into IFRS 16.

category. Obviously, a greater degree of vertical integration allows to take advantage of the economies of scale, so benefitting from a cost reduction, at the cost of greater investments.

The operational structure chosen influences, in particular, the flexibility and adaptability of the firm in facing the variability of the environment in which it operates. And it is precisely in this context that the analysis conducted by Chekitan S. Dev in the paper already mentioned fits in. As one would expect, the franchising model is more common in more volatile markets, due to the greater flexibility that this model allows. Compared to independent hotels and management agreements, franchising would seem to be the sole system capable of combining the relatively low investment of the management agreement with the reduced monitoring costs, followed then by leasing. In this sense, therefore, the franchise agreement is an excellent tool for avoiding the loss of control over management that plagues the management agreement. This result is reflected in the analysis of the current market: 53% of hotels are managed by brands through franchising, with five brands (IHG, Accor, Marriott, Hilton and Starwood) holding a 30% share of the rooms offered by franchised hotels and 65% of those soon to be opened[38]. It is clear that, globally, there is a shift from the more traditional independent management model to the more innovative franchise model[39]. However, this clear overall trend is not uniformly reflected across geographies. There are, in fact, big differences between the US and Europe, where, for example, franchised hotel rooms represent around 57% of the total, compared to over 90% in the US.

At this point it is worth introducing the last element in order to complete an evaluation of the situation of the European and Italian hotel market: the classification of accommodation facilities on the basis of their market target.

The proposed analysis is based on the classification of hotels according to stars; we distinguish between [40]:

- Upper Upscale & Luxury – 5 stars
- Upscale – 4 stars
- Midscale – 3 stars
- Economy – 2 stars
- Budget – 1 star.

[38] Hultén, S., Cavenati, M., Perret, S., & Miljkovic, N. (2021). 2021 European hotel valuation index. HVS.
[39] Hultén, S., Cavenati, M., Perret, S., & Miljkovic, N. (2021). 2021 European hotel valuation index. HVS.
[40] Wijtenburg, J. (2020, October 1). A Primer to Hotel Brands and Chain Scales - John Wijtenburg. Medium. https://medium.com/@johnwijtenburg/a-primer-to-hotel-brands-and-chain-scales-37eeacc43323

2.2.1. Europe Overview

The analysis of the European hospitality market indicates that the number of hotels has remained stable since 2009, with about 201,390 units in 2019[41] (a reduction of about 0.14% compared to 2018). On the other hand, there is an increase in the number of rooms (there were about 6,770,000 rooms in 2019, up 1% from 2018), indicating an increase in the average size of hotels in the European territory, from 30 rooms in 2009 to 33.6 in 2019. The reason for this increase is the expansion of large hotels that take advantage of economies of scale to reduce costs, while small hotels disappear under the weight of rising costs and increasingly tight competition.

On the European scene, Italy is the first country by number of hotels and rooms, followed by Germany and France, while Cyprus is the first European country by average hotel size (238 rooms per hotel), followed by Spain (94 rooms per hotel) and Denmark (83 rooms per hotel). France, Spain and Germany are the top three countries by number of hotel chains in Europe (3,385, 2,488 and 2,217 respectively).

Regarding differentiation on the basis of the business model adopted, it appears that hotels in the Luxury segment are mainly managed through management agreements, while in the Upscale & Upper Upscale and Midscale categories, the prevalent business model is franchise, with the difference being that in the Upscale category the management agreements is the second most widespread model, while in the Midscale category ownership is the second, followed by direct management. In the Economy class, the most common business model is ownership with direct management.

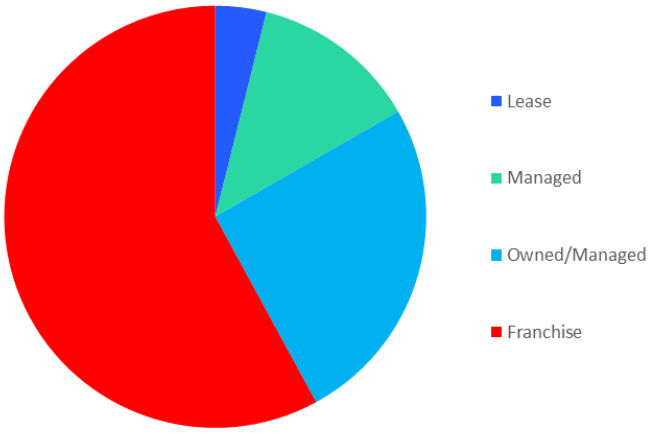

Figure 5 – Business Model Adoption. Source: Horwath HTL. (2019). European Chains & Hotels

The breakdown of the data shows that the expansion of hotels through franchising takes place mostly in the Upscale & Upper Upscale and Midscale segments, where brands are more concentrated; as far as the Economy class is concerned, the preference is still for direct ownership and management,

[41] Statista. (2021, July 5). Number of hotels and similar accommodation in the EU 2006–2019. https://www.statista.com/statistics/613620/number-of-hotels-and-similar-accommodations-eu/

especially since hotels in this category have a lower average number of rooms per hotel (91 - Economy, 110 - Midscale, 192 - U&UU, 204 - Luxury). In Europe, the franchising model (57.93%) is followed by direct management (25.37%) and management by TPO (12.79%). Finally, there is the lease agreement (3.91%). Therefore, from the data extrapolated, it appears that the flexibility offered by the franchise contract plays an important role in the choice of hotel management model, however, the regulatory and cultural differences mentioned earlier are still such as to prevent penetration similar to that which occurs in the North American market, where the franchise contract is strictly regulated and places information and transparency obligations on franchisors prior to signing the contract. In the EU countries, franchising is regulated differently depending on the country; in Italy, the legislator established it in 2004 (Law n.129/2004 - commercial affiliation contract[42]).

2.2.2. Italy Overview

The hospitality sector in Italy produces about € 119 billion (6.7% of total GDP) and generates 27% of all investments in the Real Estate market, which in 2019 stopped at € 3.3 billion (up 158% compared to the year before)[43]. The interest from foreign investors is confirmed both at the level of the number of international brands, up 9% compared to the year before, and at the level of international hotel chains present on the Italian territory, with a growth of 10% on 2018. In particular, hotels in the Luxury segment are those that attract the most attention from international brands, especially if they are located in the main cities of Rome, Florence and Milan (for instance, recently LVMH group has acquired the Belmond group for about € 3.2 billion).

Currently, the number of hotels located in the country is about 32,896 with 1,091,180 rooms[44]. As mentioned, the number of international brands present on the Italian territory has increased over the last year, from 97 international brands to 106; at the same time, the number of international and domestic chains has also increased, however the average size (measured as rooms per hotel) has decreased, from 123.6 to 119.8 for international ones and from 103.3 to 102 for domestic ones. The overall figure (including not only hotel chains in the analysis), however, shows an increase from 32.9 to 33.2 rooms per hotel, which is explained by the increase in size of hotels that are not part of chains. An analysis of the data on the reduction in the average size of hotel chains raises the question of whether this trend conflicts with the logic of economies of scale. In order to better understand the

[42] Incardona, R. (2014, February 3). Il contratto di franchising: la legge 129/2004 e diritto della concorrenza. Altalex. https://www.altalex.com/documents/news/2014/02/03/il-contratto-di-franchising-la-legge-129-2004-e-diritto-della-concorrenza

[43] Statistiche Istat. (n.d.). Istat. Retrieved 2021, from http://dati.istat.it/
Franzese, A., & Ribaudo, G. (2020). Hotels & Chains in Italy 2020. Horwath HTL; Associazione Italiana Confindustria Alberghi; Cassa depositi e prestiti.

[44] Data as of 2019, the latest year available.

specific dynamics of the sector, it is necessary to examine the Italian hotel context more closely; in general, the large chains are concentrated (especially the domestic ones) in cities of art, where there are structural limits to the size of the hotel units. In fact, the main investments are made through the restructuring (brownfield) and re-branding of existing structures, and almost never through new construction (greenfield)[45]. The discrepancy in size between Italian and international chains (102 vs. 119.8 rooms per hotel, a difference that increases dramatically in the specific case of hotels in the Economy segment - 36 vs. 182.7) is due primarily to organizational, cultural and strategic factors. Domestic operators are, in fact, more often organized in family groups with ownership and management often coinciding and with little, if any, international presence. This undoubtedly implies less brand recognition, but also less development of transversal skills and less ability to adapt. Beyond the differences in the business model adopted, which will be discussed below, Italian hotel chains are less inclined to invest in large-scale facilities, not only for cultural reasons, but probably also for reasons linked to the different structure of the capital market. Historically, the Italian banking system has financed the growth of real estate rather than that linked to the hotel business itself, with the result of feeding the expansion of Italian chains through acquisitions and leasing contracts. This modus operandi has weighed down the balance sheet of the business, worsening the financial situation and exacerbating the negative effects of economic crises. These differences in size translate into lower results: the top 5 international hotel chains have a market share of 62.88%, while the Italian chains have only 18.76%; furthermore, the larger structures are able to generate greater revenues from ancillary activities, with 76% of revenues generated by room management for hotels with fewer than 70 rooms, while the figure is 61% for the largest hotels.[46].

With regard to segmentation on the basis of stars, there are no major differences between the size of national and international chains, except, as mentioned, in the "Economy" category. The high average size of rooms per hotel (of the international chains) indicates that the competitive advantage is achieved through economies of scale, while, given the low number of chains present, it is clear that this is a market niche that is still developing. The category in which the greatest number of hotels is concentrated is Midscale (15.225), with an average market penetration by chains of 6.5%. The presence of chains, both domestic and international, in the market is positively correlated to the hotel segment: in Upscale, the penetration rate is 33.9%, while in Luxury it is around 51%. These figures testify to the high concentration of the market in segments where significant investments are required.

The following is a breakdown of hotel categories by business model:

[45] Of the 19 "Upper Upscale & Luxury" properties opening in 2019, only 2 are the result of a greenfield investment.
[46] Cassa depositi e prestiti. (2018). *Il sistema alberghiero italiano*.

- Economy – ownership (59%) and leasing (35%) models are predominantly used, a sign that interest in the segment is still low, and other operating models are struggling to become widespread;
- Midscale – the models used are management contract (2%), franchising (18%), ownership (36%) and leasing (44%);
- Upscale – management contract is used by 4% of facilities, franchising by 24%, ownership by 34% and leasing by 38%;
- Upper Upscale & Luxury – in this segment, franchising is the least used model (10% of hotels), followed by management contract (18%). Leased hotels account for 27%, while directly owned and managed hotels account for 45%.

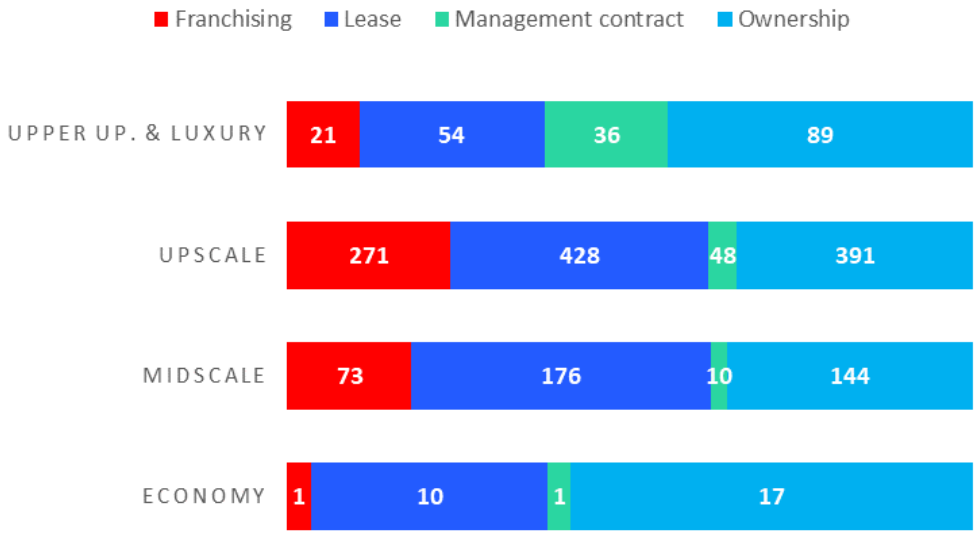

Figure 6 – Hotel Business Model by Scale. Source: Franzese, A., & Ribaudo, G. (2020). Hotels & Chains in Italy 2020. Horwath HTL; Associazione Italiana Confindustria Alberghi; Cassa depositi e prestiti.

In general, the management contract only prevails among large 5-star hotels. Facilities managed under contract are the largest (157 rooms per hotel vs. 110 leasing, 102 ownership and 101 franchising); it is probably also due to the scarcity of units of this size that management contracts struggle to spread. In any case, direct management models seem to be the preferred ones in the Italian hospitality sector. The comparison with the North American market is even more eloquent: where in Italy franchising stands at 2%, in the USA the percentage rises to around 69%, but as mentioned, these differences derive from cultural and regulatory factors.

2.3. Real Estate Transactions in Lodging Industry

The continuous search for greater returns on investment, given the persistent stagnation of interest rates, together with the spread of operating leases granted by banks, has created a favorable

environment for the growth of the hotel real estate sector. Beyond the magnitude of the numbers, which will be seen shortly, the growth of interest in the sector has produced an increasingly specialized class of investors, also attracting many institutional players, interested above all in the separation of returns from both the revaluation of assets and their management. This development has contributed to the creation of that division between real estate assets and hotel activities, which is especially noticeable in the analysis of operating models and which contributes to the growth in acquisitions recorded.

According to an HVS report[47], in 2019 the volume of transactions[48] in Europe reached € 27.1 billion, an increase of 46% compared to the year before. The transactions recorded relate to the sale of individual assets and portfolios of hotels. Specifically, deals in individual properties amounted to € 12 billion and those in portfolios to € 15.1 billion. In the lead among buyers are companies specializing in Real Estate investments (with € 7.6 billion, 32% of which invested in individual assets and 32% in portfolios), followed by institutional investors (with € 6.7 billion divided into 31% individual properties and 19% portfolios) and sector operators (who invested € 6.1 billion, 11% of transactions in individual assets and 32% of the total in portfolios). The countries with the highest transaction volumes are the UK (€ 5.3 billion), Germany (€ 4 billion) and France (€ 2.2 billion). The single largest M&A transaction that took place in 2019 was undoubtedly the acquisition of Belmond Group by LVMH for € 2.8 billion. The transaction involved 46 assets including luxury hotels, restaurants, trains and river cruise boats.

In **Italy**, the value of deals reached € 1.8 billion, with an average price per room of € 384,000, a value that ranks first among European countries. Most of the deals concluded concern properties in Rome (eight deals for a total value of € 188 million with an average price per room of € 229,000), however, the most expensive transactions were executed in Venice (Palazzo Giovanelli, sold for € 50 million - € 1.2 million per room and the Bauer Hotel, sold for € 400 million - € 2.1 million per room).

2.3.1. Covid-19 Impact on Lodging Industry

The spread of the coronavirus, with the consequent containment measures, has had a particularly violent impact on the hotel sector, especially in those countries that have adopted total or semi-total containment policies. Globally, losses are estimated at $4.5 trillion[49]. In the European Continent, hotels have experienced a decline in RevPAR (Revenues Per Available Room) of around

[47] Auer, N., Cavenati, M., & Patrick, S. (2020). 2019 European hotel transictions. HVS.
[48] In the metrics are included only property-based transactions whose value is greater than € 7 millions.
[49] Travel & Tourism Economic Impact | World Travel & Tourism Council (WTTC). (n.d.). World Travel & Tourism Council. Retrieved September 18, 2021, from https://wttc.org/Research/Economic-Impact#:%7E:text=WTTC's%20latest%20annual%20research%20shows,the%20global%20economy%20in%202020

70%, with an estimated loss in value of €1 billion (based on a sample of 350 hotels[50]). This pandemic has exacerbated some dynamics that were already in place, especially at the local Italian level:

- The forced interruption of activity, not backed up by an adequate support system, has highlighted the difficulties of those structures already weighed down by the real estate assets on the balance sheet.
- The general uncertainty regarding the timing of reopening and recovery has forced banks to reduce the amount of credit granted to businesses, making the situation in the hotel sector even worse.
- Due to the greater incidence of fixed costs compared to variable costs in hospitality businesses (an average of 57% compared to 43%), Italian hotels have not had many margins to exploit in order to absorb the damage caused by the protracted restrictions, reporting estimated losses of around 58.3% of revenues.[51].

Without expanding too much on the analysis of the impact that the pandemic has had on the entire sector, it would be opportune to dwell on some of the critical points noted. First of all, Italian hotels are generally very well capitalized, precisely because of the presence of real estate assets in the balance sheet. This characteristic can be a major disadvantage in periods of crisis, as was demonstrated during the past financial crisis, due to the illiquidity of the assets in question. On closer inspection, when the credit cycle stops, the only alternative solution to bankruptcy seems to be recapitalization. This observation provides an interesting insight into the future of the operating models of the entire sector: has the crisis of 2020 accelerated the process of abandonment of the more traditional models of direct ownership/management, even by small hotels? The answer to this question can only be revealed by future evidence; for now, we will limit the discussion to an analysis of the asset light strategy and how it can be adopted through the tokenization of real estate assets.

2.4. Asset Light Strategy

The asset light (AL) strategy is based on maximum reduction in ownership of fixed assets; the resulting vertical disintegration is intended to prioritize flexibility at the expense of control. In the hospitality industry, an asset light model generally translates into management contracts or franchises, however, operating leases are also part of this strategy, although they allow for less flexibility. The key point is that in a capital-intensive business, such as the hospitality industry, finding a balance in asset levels is not easy. The prevailing scenario in the 1980s suggested a vertically integrated asset heavy model that resulted in hotel companies incurring significant debt to acquire assets, thereby

[50] Hultén, S., Cavenati, M., Perret, S., & Miljkovic, N. (2021b). 2021 European hotel valuation index. HVS.
[51] Cassa depositi e prestiti. (2020). Settore alberghiero e Covid-19.

tying up a large amount of capital. A decisive turning point came with the economic recession of the 1990s: in moments of crisis, in fact, all the limitations of this model emerge. Due to the huge investments, the debt levels of companies reduce margins and limit the ability to adapt to changes in a dynamic environment. In addition, the illiquidity of the assets in question makes it impossible to quickly adjust the corporate structure. Today[52], on average, companies adopting an asset-light strategy have higher returns than competitors embracing asset-heavy models. Although the market offers numerous examples of companies that have achieved excellent results by adopting a strategy of maximum integration (e.g., Zara), it is not possible to generalize without falling into survivor bias.

In recent years, the scholarly literature has attempted to bridge the gap formed by the lack of a specific framework that considered the real impact of the asset light model on the Lodging industry. A step forward in trying to bridge this gap between theory and practice has been made by Seo and Soh[53], whose contributions will be taken up in the course of this paper; in particular, it will be analyzed the effects of the adoption of AL on several variables.

Due to the scarcity of available data, the analysis will focus only on large-listed hotel chains; therefore, it must always be considered that the evidence found cannot be generalized to all categories of hotels. In some cases, smaller hotels may prefer to hold the real estate asset to have stronger collateral to offer as security for a loan.

In order to holistically understand the extent of the influence of this strategy, the AL model was analyzed within Dynamic Capabilities (DC) theory[54]. The authors decided to adopt a DC approach as it is more appropriate to represent a strategy as an advantage in a changing market. According to the DC theory, in fact, the advantage of a company lies not so much in the scarcity of resources (as theorized by the Resource Based View approach – RBV), but more in its ability to adapt and reconfigure its resources in an unpredictable environment. In this context, the AL strategy represents an undoubted dynamic capability since it allows the company to free up resources to invest in the development of new skills or the readaptation of those already possessed, thus improving performance, especially in complex environments where hotels provide a wide range of services (spa, restaurant, swimming pool, etc.). Moreover, in a previous work Seo and Soh[55] have highlighted that hotels adopting an asset light strategy are able to generate more stable cash flows, reducing the need to rely on external sources. According to the Pecking Order Theory, in fact, a company favors its own

[52] Kachaner, N., & Whybrew, A. (2021, January 8). When "Asset Light" Is Right. Italy - IT. https://www.bcg.com/it-it/publications/2014/business-model-innovation-growth-asset-light-is-right
[53] Seo, K., & Soh, J. (2019). Asset-light business model: An examination of investment-cash flow sensitivities and return on invested capital. International Journal of Hospitality Management.
[54] The Dynamic Capabilities (DC) theory is an evolution of the Resource based view (RBV).
[55] Seo, K., & Soh, J. (2019). Asset-light business model: An examination of investment-cash flow sensitivities and return on invested capital. International Journal of Hospitality Management

funds as a source of financing, as opposed to credit; however, in the absence of external sources, investments become sensitive to the availability of cash flow as the only source of financing.

2.4.1. Asset Light Benefits

According to an analysis by BCG[56], companies that embrace the asset-light strategy have experienced higher returns than competitors who adopt a vertically integrated model because, although the former have lower margins on average due to the presence of commissions or royalties, they are advantaged by the benefits that derive from the AL strategy: higher return on assets, lower volatility, greater flexibility and greater savings in scale-related costs.

Greater return on assets – The lower the level of assets held, the greater the ratio between Net Income and Total Assets. Even if the weight of a fixed asset (considered as depreciation) is reduced (positively influencing Net Income), it must be considered that the AL firm will incur in greater rental costs to utilize the assets. In any case, according to the analysis, this trade-off has a positive impact on long-term results, particularly in hospitality. Specifically, the paper by Seo, Woo, Mun and Soh[57] reported an improvement (compared to asset heavy hotels) in the performance indicators measured (RevPAR, occupancy index and ADR). Similarly, Seo and Soh's[58] analysis identifies AL as one of the drivers of Return on Invested Capital (ROIC) growth. Consistently with what is expected, the use of the AL strategy is associated with a higher possibility of mitigating adverse economic conditions in times of crisis.

Lower volatility – The reduction of expenditures on fixed assets leads to lower operating leverage, aligning costs with business revenues. This effect is particularly evident in those environments where it is possible to convert asset usage costs from fixed to variable[59].

Greater flexibility – From a real estate management perspective, hotels are exposed to the risks associated with owning real estate assets, such as low liquidity, high debt and high depreciation. According to Seo and Soh analysis[60], the AL strategy allows hotels to reduce the sensitivity of operating cash flows, enabling better planning of investments in core activities. The end result is an increase in flexibility in conditions of reduced credit access (financial constraint), as in the case of a

[56] Kachaner, N., & Whybrew, A. (2021, January 8). When "Asset Light" Is Right. Italy - IT. https://www.bcg.com/it-it/publications/2014/business-model-innovation-growth-asset-light-is-right
[57] Seo, K., Woo, L., Mun, S. G., & Soh, J. (2021). The asset-light business model and firm performance in complex and dynamic environments: The dynamic capabilities view. Tourism Management.
[58] Seo, K., & Soh, J. (2019). Asset-light business model: An examination of investment-cash flow sensitivities and return on invested capital. International Journal of Hospitality Management.
[59] For instance, payments according to sale-and-lease back operations are classified as variable costs if performance-based.
[60] Seo, K., & Soh, J. (2019). Asset-light business model: An examination of investment-cash flow sensitivities and return on invested capital. International Journal of Hospitality Management.

recession, in line with what has been analyzed in relation to the franchising model. In fact, the prevalence of variable costs over fixed costs ensures a greater ability of the company to adapt to the variability of the context in which it operates.

Higher scale-driven cost savings – AL strategy allows the achievement of cost savings resulting from economies of scale without the need to invest in fixed costs to realize them. This advantage is especially evident for those companies that use franchising as a tool to expand their business.

Not all researchers seem to agree on the benefits of the AL model: in 2019 Bianchi e Blal[61] analyzed the performance (measured as EBITDA, ROE, and share returns) of six U.S. hotel chains over 16 years, finding that implementing the AL strategy has no impact in the long term. While the scope of these results is severely limited by the size of the analysis, the paper does offer some interesting insights. A possible explanation suggested by the authors for the contrasting results, compared to other studies, is the need for companies that embrace AL strategy to invest more resources on the coordination of the different business units. However, despite the need for more in-depth research on the subject, there is no doubt that, in the case of an exogenous shock such as that caused by a crisis, an AL approach can facilitate an effective response by allowing resources to be reconfigured in such a way as to cope with these changes.

2.5. REIT Spin-Offs

Within this dissertation we will analyze REITs as a tool used by some hotel companies to pursue an asset light strategy by spinning off and separately managing real estate assets. As we have seen extensively, the U.S. Congress established REITs in the 1960s as a tool to allow private investors to diversify and invest in the Real Estate market without the need of managing the asset.

Although a REIT definition has already been outlined, it is appropriate to focus here on the characteristics and legal requirements that an entity must have in order to be classified as a REIT[62]:

- hold at least 75% of assets in Real Estate;
- obtain at least 75% of gross income from rents, mortgage interest or sale of Real Estate;
- distribute at least 90% of its profits as dividends to its investors each year;
- be managed by a Board of Directors or trustees;
- have a minimum of 100 investors;
- have a maximum of 50% of its shares held by 5 or fewer individuals during the past year.

[61] Blal, I., & Bianchi, G. (2018). The asset light model: A blind spot in hospitality research. International Journal of Hospitality Management.
[62] SEC. (2011). Real Estate Investment Trusts (REITs). https://www.sec.gov/files/reits.pdf

From 1975 to 2019, the number of REITs in the U.S. increased tremendously from 46 to 219[63], reaching a market capitalization of over $1.3 trillion[64]. This growth has been mostly driven by the fact that REITs are exempt from paying taxes at corporate level, and this played a key role during the recession of the 1990s. In fact, with the tightening of tax laws, many companies were incentivized to exploit the tax advantages offered by REITs[65]. Currently, the managed volume has reached approximately $3.5 trillion in investments in a wide range of properties, including apartment buildings, cell towers, data centers, hotels, medical facilities, offices, retail centers, and warehouses[66].

Based on the assets in which REITs invest, three types of REITs can be identified:

- **Equity REITs** are those companies that manage and/or own real estate assets that produce income from the rental or sale of the properties. Shareholders of REITs receive dividends based on the income produced by the properties.
- **Mortgage REITs** (mREITs) are those companies that, through the purchase or issue of mortgages and mortgage-backed securities, finance the acquisition of Real Estate properties. The mortgages can be taken out on both residential (RMBS) and commercial (CMBS) properties and, regardless of the type of property considered, the profit of these companies is given by the difference between the interest that the mortgage generates and the cost of its financing. In addition, many mREITs use derivatives and hedging techniques to manage interest rates.
- **Hybrid REITs** are those companies that benefit from the investment strategies coming from both Mortgage Reit and Equity Reit.

As mentioned, the REIT instrument is functional to the implementation of an asset light strategy by some hotel chains. The operation of separation of real estate assets and creation of a trust is defined as a "REIT spin-off". Through this mechanism, the parent company (OpCo) transfers the assets to a subsidiary company (SpinCo), set up according to the requirements of a REIT, in exchange for 100% of the shares of the latter. The new company is a legal entity separate from the parent company and therefore has its own corporate structure and management, which over time may also develop different policies from the OpCo. In the hospitality industry, the OpCo will be able to continue to use the transferred assets through a long-term lease. In the case of an unlisted REIT, once the spin-off has

[63] Statista. (2020b, November 6). Number of REITs in the U.S. 1975–2019. https://www.statista.com/statistics/916661/reits-usa-number/
[64] Statista. (2020c, December 16). Market cap of REITs in the U.S. 1975–2019. https://www.statista.com/statistics/916665/market-cap-reits-usa/
[65] Ambrose, B. W., & Linneman, P. (1998). Old REITs and New REITs.
[66] What's a REIT (Real Estate Investment Trust)? (n.d.). Nareit. Retrieved 2021, from https://www.reit.com/what-reit

taken place, OpCo shareholders will also own SpinCo and receive dividends.

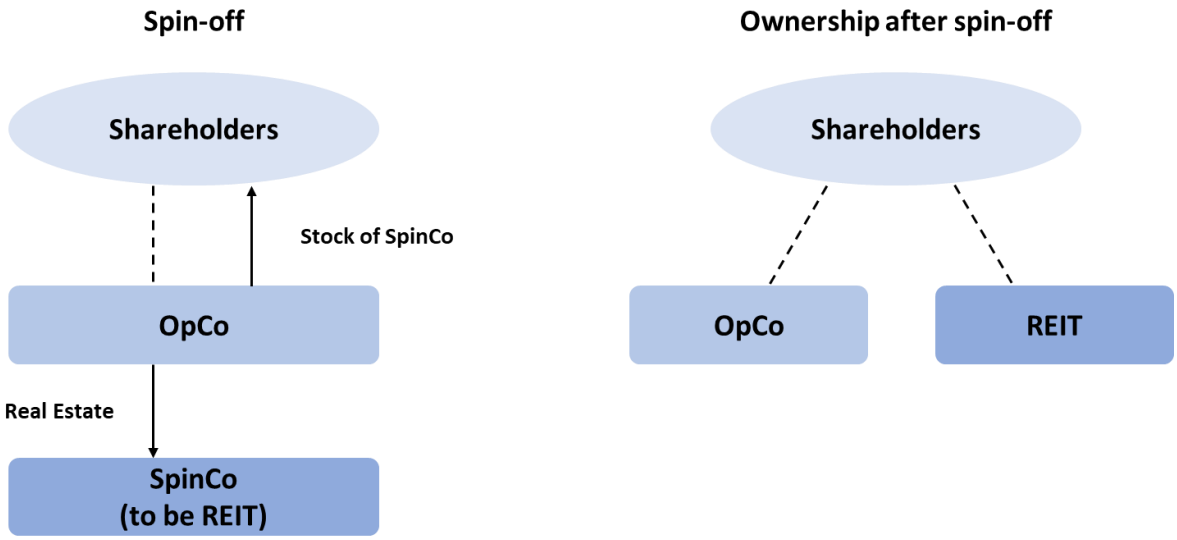

Figure 7 – Spin-Off Structure. Source: Goolsbee, A., & Maydew, E. (2002). Taxes and Organizational Form: The Case of REIT Spin-offs. National Tax Association

Until 2015, the spin-off REIT tool was primarily used for its associated tax advantages: cash flows from the operational management of Real Estate assets were not subject to any taxation since REITs are exempt from corporate taxation. The advantageous tax regime has created a REIT Spin-off-operations friendly environment over the years, however, increases in dividend taxation are expected under the newly proposed review of the U.S. tax system[67].

In some cases, the REIT spin-off mechanism is associated with an IPO in order to obtain greater liquidity from the real estate assets of the hotel business, without giving up the control over the real estate assets. In other words, from an asset light perspective, it may be convenient to separate the core hotel business activity from the management of the Real Estate, lightening the balance sheet and at the same time ensuring control over the assets. Although from 2013 to 2019 the number of REIT IPOs has steadily declined, from 19 in 2013 to the single IPO in early 2019, the cash raised has grown, reaching $3.3 billion in 2018, a signal of strong overall interest by the market. The main reasons that go along with a REIT spin-off are generally related to the profitability increase of the parent company:

Management improvement - Once the spin-off has taken place, the companies will behave as legally separate entities, with their own structure and growth strategy optimized on the basis of specific needs. Management independence is a relevant factor in the decision to undertake a REIT

[67] Carnette, J. (2021, April 28). REITs: the Perfect Investment Asset for Biden's Tax Plans? Millionacres. https://www.millionacres.com/real-estate-investing/articles/reits-the-perfect-investment-asset-for-bidens-tax-plans/

spin-off: the company has the possibility to take full advantage of the opportunities offered by the asset light strategy and to focus resources on developing the core business.

Higher overall valuation - The creation of a new entity can facilitate the valuation of the company that is often undervalued by investors who do not correctly perceive the value of the combined company. Through the separation, shareholders and the market should be able to determine more accurately the company's performance.

Tax Benefits - The exemption of REITs from corporate income taxes generates significant savings.

Among spin-off transactions that have occurred in recent years, two can be mentioned as examples. Between 2016 and 2017, Hilton Worldwide Holdings, which owns more than 6,000 properties, decided to create two spin-offs: Park Hotels & Resorts and Hilton Grand Vacations. As stated by Hilton Parent company management, the reasons that prompted this decision are focused on the tax advantages and the benefits of managing the two entities separately[68].

In 2018, La Quinta Holding Group also spun-off its real estate holdings prior to its acquisition by Wyndham Worldwide Group [69]. With the spin-off transaction, the Real Estate assets were transferred to the newly formed Core Point Lodging in order to manage the two business units separately. As a result of the separation, Core Point Lodging is endowed with 316 hotels active mainly in the midscale and upper-midscale segments. As in the case of Hilton Worldwide Holdings, the reasons underlying the decision to spin-off the company were primarily the possibility of diversifying strategies by focusing on the core business, the simplification of the corporate valuation process and the improvement of the fiscal efficiency of the corporate structure[70].

Although there are virtuous examples of pursuing the asset light strategy through the REIT IPO, it must be stressed that this mechanism suffers from multiple limitations. First of all, IPOs costs are extremely high: approximately 10% of gross proceeds (with fixed costs of around $2.5 million) are absorbed by regulator, exchange fees and brokerage costs. The second issue is related to the REIT size: there are not many examples of listed single asset REITs, so the market seems to prefer funds with a larger portfolio that can provide greater diversification. The resulting uncertainty about the performance of single asset REITs was one of the reasons behind the withdrawal of the Aspen REIT IPO, a matter that will be discussed later. Finally, the time required to list a fund is very long (from 6

[68] SEC. (2016). Hilton Worldwide Holdings Inc. https://www.sec.gov/Archives/edgar/data/1617406/000119312516745524/d102835dex991.htm#toc
[69] SEC. (2018). CorePoint Lodging Inc. https://www.corepoint.com/~/media/Files/L/LaQuinta-CorePoint/documents/form-10-amendment-no-2.pdf
[70] SEC. (2018b). La Quinta Holdings Inc. https://www.sec.gov/Archives/edgar/data/1707178/000119312518105195/d313441dex991.htm

months to 1 year[71]), with a huge number of documents and operations to be prepared for the IPO (external auditing of management, internal reporting structured according to the requirements of the supervisory commission, periodic reports to investors, etc.). Obviously, all these limitations mean that only the largest and most structured REITs can pursue the way of public listing, forcing all small and medium-sized hotels to look for other methods to spin-off and liquidate their real estate assets.

[71] Thomas, B. (2019, July 24). *A Critical Look At REIT IPOs*. Forbes. https://www.forbes.com/sites/bradthomas/2019/07/24/a-critical-look-at-reit-ipos/?sh=d413bc1622cc
Byron, C. J., & Wilkin, T. (2018). Roadmap for a REIT IPO or conversion. PwC.

3. St. Regis Fractionalization

The focus of the discussion will now shift to one of the first successful examples of tokenization in the Real Estate sector, in particular in the hospitality sector: Aspen Coin. The case of the St. Regis Hotel in Aspen represents a milestone in the innovative context offered by blockchain as the first attempt to overcome the limits imposed by the traditional mechanisms of fractionalization of Real Estate investments such as low liquidity, lock-up periods, discounts to Net Asset Value[72] and limited ability to choose which properties to invest in (REITs diversify their portfolio by investing in multiple properties). Following the presentation of the St. Regis business and context, the most relevant differences between the IPO and STO processes specific to the Hotel will be analyzed. The focus will then be on the more technical aspects of the tokenization process and the results in terms of token diffusion and market liquidity. Lastly, the final part of the chapter will be dedicated to the presentation of the features that led to the success of the project and the future prospects of tokenization.

3.1. Intro to St. Regis

The St. Regis in Aspen, Colorado, is a luxury hotel in the "full service" category (it is equipped with a wide range of services to meet the demands of customers); currently, it has 179 rooms, including 154 standard rooms and 25 suites, 14 conference rooms, two restaurants, one of which is open only during the summer months, and a space reserved for the "Chefs Club" of Aspen. In addition, the property features a spa and pool, both indoor and outdoor heated, and a gym. The variety of services offered also includes support for mountain-related activities, both winter and summer, such as private transportation and equipment rentals.

In 1998, the hotel was purchased by Starwood Hotels and adopted the name "St. Regis." In 2010, the 315 East Dean company purchased the St. Regis for $70 million ($390,000 per room), leaving its management to Starwood (which was acquired by Marriott in 2016).

3.1.1. Corporate Structure

Currently (taking into consideration tokenization), the corporate structure of the St. Regis at Aspen is broken down as follows:

- Aspen OP, LP (an operating partnership between Aspen Digital, Inc. and 315 East Dean Associates, Inc.) holds the ownership of the St. Regis and is directly controlled by Aspen Digital, Inc. for 18.9% and by 315 East Dean Associates, Inc. for 81.1%, reporting to

[72] Usually, REITs trade at a discount to their value measured as Net Asset Value (asset value of real estate properties less liabilities).

Stephane De Baets, holder of all the OP Units[73]. Aspen Digital, Inc. is the SPV whose shares have been fully tokenized. Interestingly, although the entire ownership of Aspen Digital, Inc. is widespread, it does not actually have any kind of control over the underlying assets (other than operational control), as the ownership of Aspen OP, LLC is divided between the aforementioned Aspen Digital, Inc. (of which Mr. De Baets holds the positions of Chairman, CEO and President) and 315 East Dean Associates, Inc., therefore the control remains centralized and granted to Mr. De Baets himself; moreover, any extraordinary transaction requires the approval of the majority of the OP Units.

- The management of the Asset is in the hands of ER-RE, LLC, which is linked to Aspen OP, LP through an Asset Management Agreement. ER-RE, LLC and its parent company Elevated Returns, LLC are also owned by Mr. De Baets.
- The operational management of the Hotel is entrusted to Starwood, while the "St. Regis" brand is owned by Marriott.

It should be noted here that Aspen Digital Inc. is registered as a REIT[74], but not under the Internal Revenue Code ("IRS"), as fewer than five individuals hold more than 50% of the tokens; therefore, Aspen Digital Inc. is currently classified as a C Corporation; however, as stated in the Whitepaper, the Board of Directors reserves the right to complete registration as a REIT under the IRS as well if all requirements are met in the future.

[73] For further details, see *Appendix – Operating Partnership Units*

[74] A Real Estate Investment Trust (REIT) is a company that collect funds to invest in real estate assets. In order to qualify as REIT, a company needs to satisfy certain requirements such as: invest at least 75% of its assets in real estate; derive at least 75% of its gross income from real estate-related operations (rents, sales and interest on financing); pay at least 90% of its taxable income as dividends; have no more than 50% of its shares held by five or fewer individuals; have a minimum of 100 shareholders. For further details, see section *2.5 REIT Spin-Off*.

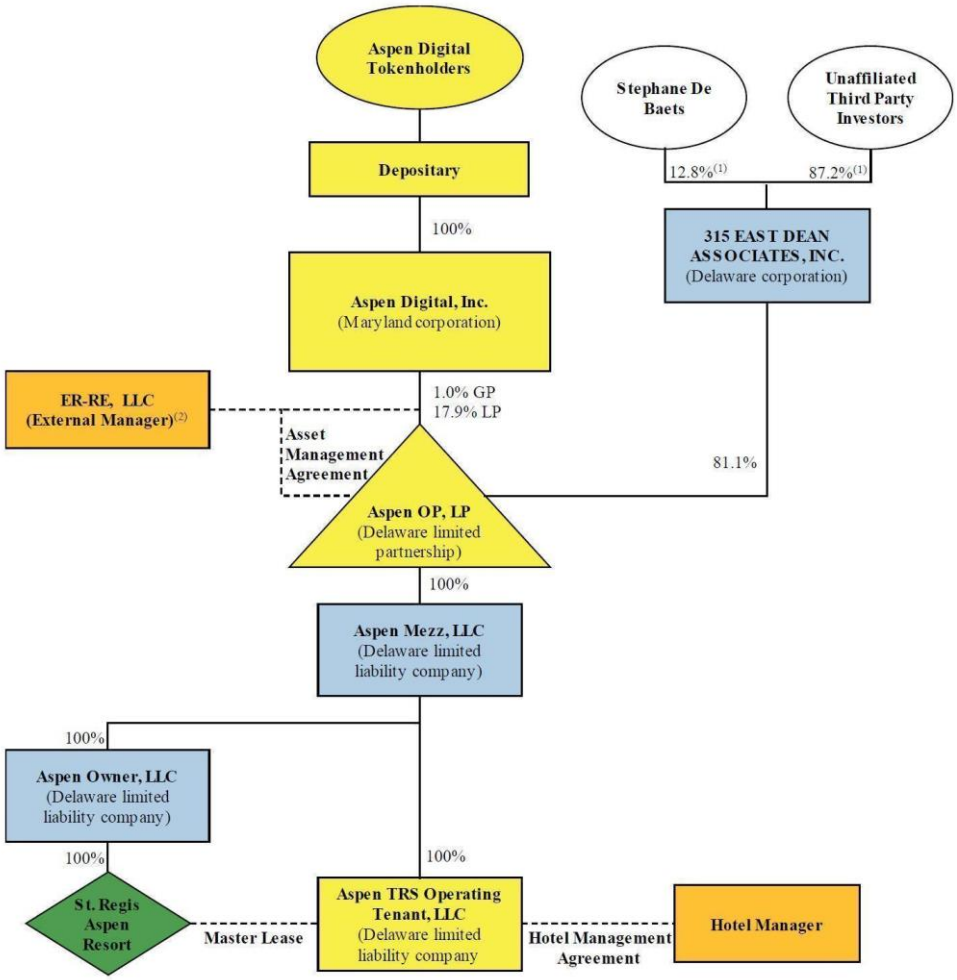

Figure 8 - St. Regis Corporate Structure. Source: Aspen Digital, Inc. (2020). Disclosure Statement.

3.1.2. Business

The St. Regis operates in a highly seasonal industry, therefore room occupancy and revenue per available room ("RevPAR") levels fluctuate based on the time of year, with peaks in the summer months of June and July and winter months of December and January. What's more, business is subject to weather conditions and the condition of snow on the various slopes of the mountain complex. The Resort's positioning in the luxury range allows for stabilization of operating results, making the balance sheet less subject to the business cycle. In addition, the main competitive advantages derive from customer loyalty, the location of the structure and the great experience gained by the management.

- The adoption of discount restriction policies to reduce room vacancies (aimed at not diluting the hotel's image), coupled with the wide range of services offered and events hosted by the St. Regis, has enabled the creation of a solid base of loyal customers that supports the maintenance and increase of RevPAR.

- The strategic location, both in terms of its proximity to downtown Aspen and its proximity to ski facilities, has allowed for the development of a significant competitive advantage, especially with respect to new entrants who cannot take advantage of the direct connection to major sites of interest in the area. In addition, restrictions on building in the vicinity of Colorado's National Forest Land poses a strong barrier to entry and limits competition.

3.1.3. Outlook

The competitive advantages developed over time allow the St. Regis to achieve an occupancy rate that fluctuates between 90% and 100% in high season (compared to competitors' average of 80%) and around 20% in low season (compared to competitors' average of 40%). The average daily rate ("ADR") charged varies from a minimum of $380 in the May and September periods to a maximum of $1600 in the December and January periods. A comparison with the average ADR of competitors clearly shows the advantage acquired by the St. Regis: the competitors' average ADR varies between $200 and $1200. Finally, the RevPAR reaches a maximum of $1200, while competitors stop at $1000.

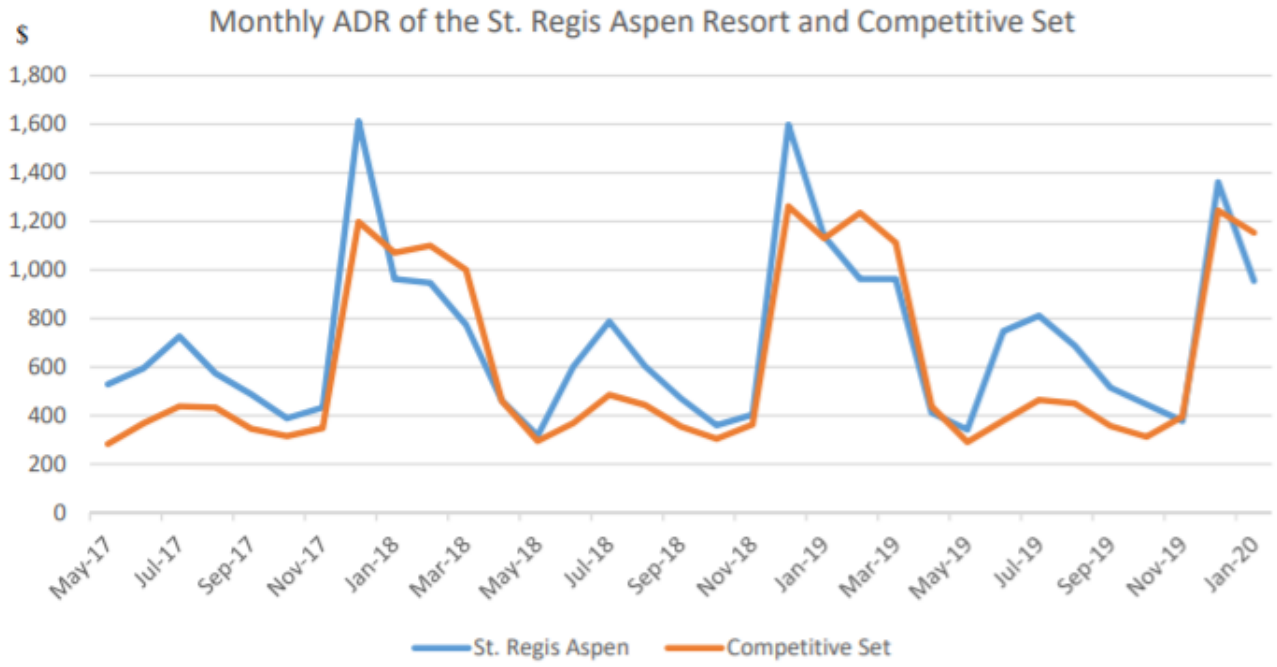

Figure 9 – St. Regis Monthly ADR – Source: Aspen Digital, Inc. (2020). Disclosure Statement.

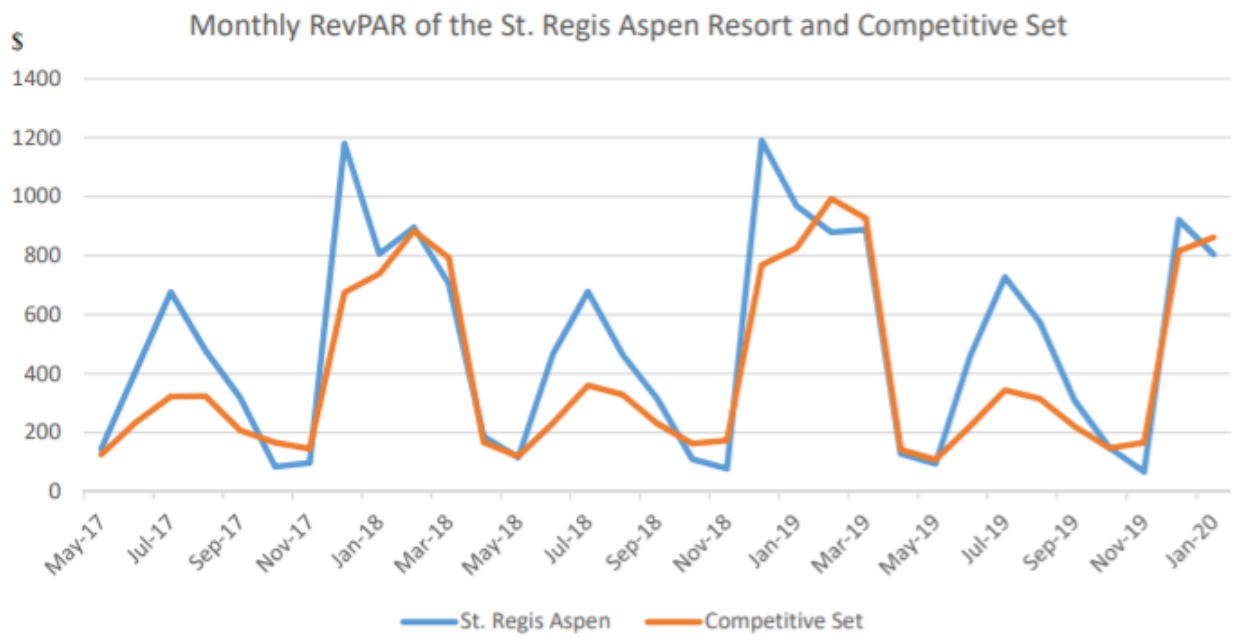

Figure 10 – St. Regis Monthly RevPAR. Source: Aspen Digital, Inc. (2020). Disclosure Statement.

Before the pandemic broke, the Resort's valuation was around $262 million. The forced closure as a result of the pandemic containment measures produced not only short-term effects on room occupancy levels, but also long-term effects; the St. Regis had to renegotiate some of its debt and finance working capital with funds previously allocated for capex. Although the signs of economic recovery in the U.S. are encouraging, the full recovery of lodging industry is still far away, and business segment of customers does not appear to recover anytime soon.

Before analyzing the tokenization process in detail, it is appropriate to review the steps that led management to prefer the blockchain route over the REIT's IPO. Indeed, as an analysis of documents filed with the SEC shows, the initial goal of 315 East Dean Associates, Inc. was to increase the liquidity of the Real Estate investment through an IPO.

3.2. IPO Process

On November 14, 2017, the newly formed Aspen REIT, Inc. announced that it had embarked on the IPO listing path by filing Form 1-A with the SEC[75]. Specifically, Aspen REIT, Inc. applied for registration to issue a security under Regulation A+[76]. The public offering included the sale of 1,675,000 stocks with a par value of $0.01 at a price of $20, for a total of $33,500,000 in funds raised. The listing of the first single-asset REIT would take place on the NYSE ("New York Stock

[75] SEC. (2018a). Aspen REIT, Inc. https://www.sec.gov/Archives/edgar/data/1694997/000110465918003656/a17-17001_5253g1.htm#bi40101_market_and_industry_data_and_forecasts
[76] For further details, see *Appendix – Regulation*

Exchange") under the symbol "AJAX". As stated by Mr. De Baets, who at that time held the roles of CEO, President and Chairman of Aspen REIT, Inc. through this transaction *"Today, any investor can subscribe to become a part owner in the St. Regis Aspen Resort, one of the world's finest luxury hotels. Through this first-of-its-kind offering in the United States, we are leveling the playing field for all investors, creating equal opportunity to participate in the upside associated with a first-class resort"*[77].

On January 26, 2018, Aspen REIT, Inc. obtained SEC approval for its initial public offering.

On February 21, 2018, management decided to postpone the IPO to a future date to change the structure of the offering.

On March 5, 2018[78], in an official statement Mr. De Baets announces the withdrawal of the company's IPO. According to what is reported by Mr. De Baets' lawyers[79], the practical reasons for this withdrawal are to be found in the impact of the real costs resulting from the public offering process: as per Mr. DeBaets' lawyers, the costs initially budgeted were exceeded, thus making the IPO no longer economically viable – *"We went to IPO, but realized halfway through the process that this will not be a scalable business because the cost of a listing on the NYSE is just so prohibitive that it just does not make sense for a single asset."*[80]. Looking closely, the whole thing falls within a series of legal disputes[81] that have arisen between Mr. Kirschenbaum, managing director of Elevated Return, LLC (asset manager of the St. Regis in Aspen), and Mr. De Baets himself.

3.2.1. IPO Prospectus

The IPO Prospectus[82] consists of 182 pages of business analysis and detailed descriptions of the Offering, plus an additional 48 pages presenting the financial statements and financial notes of Aspen REIT, Inc.'s parent/subsidiary companies. We will only outline an overview of the contents of the Prospectus herein, in order to then prepare a comparison with what is contained in the Whitepaper of the tokenization.

[77] Carroll, R. (2018). St. Regis Aspen public offering clears SEC, will open at $20 a share. The Aspen Times. Published.
[78] Business Wire. (2018). Aspen REIT withdraws its common stock from listing on the NYSE American. https://www.businesswire.com/news/home/20180305006252/en/Aspen-REIT-Withdraws-Common-Stock-Listing-NYSE
[79] Carroll, R. (2019). Legal fallout over St. Regis Aspen sell-off. The Aspen Times. Published.
[80] Tokenized Real Estate: A $17 Trillion Opportunity. (2019, November 21). Hacker Noon. https://hackernoon.com/tokenized-real-estate-a-dollar17-trillion-opportunity-dm5t32y6
[81] Casetext. (2020). Kirschenbaum v. De Baets. https://casetext.com/case/kirschenbaum-v-de-baets?__cf_chl_jschl_tk__=pmd_yUNA4PInoGj4HxCisvZQLMjA0WNaqds14SNeR86o4Ek-1631517931-0-gqNtZGzNAjujcnBszQiR
[82] SEC. (2018a). Aspen REIT, Inc. https://www.sec.gov/Archives/edgar/data/1694997/000110465918003656/a17-17001_5253g1.htm#bi40101_market_and_industry_data_and_forecasts

The Prospectus therefore contains detailed information about: business and target market, outlook and key risk factors, description of the corporate structure, composition of the Board of Directors and Committees, description of capital and its composition, use of funds raised, dividend distribution policies, updated financial statements and management's notes on operating performance, regulations relevant to the business (environmental, regulatory, staffing, insurance), existing contracts and financing terms, terms of issuance of new financial instruments and new shares, specific considerations on the tax treatment of the shares given the international nature of the Offering, Maryland corporate law regulations.

Given the breadth of the topics dealt with in the document approved by the SEC, it was deemed opportune to go into detail only on those elements pertaining to the purpose of this paper, not only for the purpose of comparison mentioned above, but also to give a clear picture of the IPO of the first single asset REIT.

The initial public offering is based on the "best efforts/all or none" mechanism, therefore, for it to be valid, the entire free float offered must be allocated to investors. The minimum amount of shares that can be subscribed by US investors is 100 common stocks, while for foreign investors it is 500 common stocks. Under the terms of the Selling Agent Agreement, expenses related to the offering are the responsibility of 315 East Dean Associates, Inc. and include: Financial Industry Regulatory Authority ("FINRA"), registration fees and commissions, NYSE registration fees, legal and accounting fees. The Lead Selling Agent's fee for its services is a 7% commission of Gross Proceeds.

Following the approval of the Offer by the SEC, investors (accredited, since the Offer meets the requirements of Reg A+) may express their interest to the Selling Agents and the Lead Agent.

3.2.2. Corporate Structure in IPO scenario

The organizational structure of the IPO scenario mirrors the current (post tokenization), with the only difference being that management of the operating partnership (Aspen OP, LP) would be entrusted to Aspen REIT, Inc. (a publicly traded company) for 49% and to 315 East Dean Associates, Inc. for 51%, in exchange for the sale of the St. Regis at Aspen. The hotel is then leased to Aspen TRS, Inc. which will be managed by Starwood.

Although 315 East Dean Associates, Inc. is listed as a Limited Partner (with limited control over the management of the operating partnership (Aspen OP, LP), Mr. De Baets serves as President, CEO and Chairman, thus ensuring operational control. In addition, all extraordinary transactions must be approved by a majority of the holders of the OP Units, which are wholly owned by MR. De Baets.

3.2.3. Contracts' Terms

Regarding management contracts, a differentiation is made between the Manager and the Hotel Manager. The Manager is ER-REITS, LLC (asset manager) which manages the St.Regis asset through an operating partnership; the Hotel Manager is the Starwood company which is materially responsible for managing the Hotel.

Management Agreement

The management agreement was entered into directly between Aspen REIT, Inc. and ER-REITS, LLC for the purpose of managing the property. This double step was necessary to comply with the requirements for REITs.

The management agreement establishes the right to certain fees:

- Base fees calculated as a percentage of the facility's operating income, and in any event greater than $500,000.
- Management fees calculated on the basis of the performance achieved by the manager; these are part of the incentive mechanisms.
- Disposition fees calculated as a percentage of the eventual sale of the St. Regis Aspen.
- Termination fees due only in the event of termination of the contract not attributable to the Manager's actions.

Hotel Management Agreement

Day-to-day management of the hospitality business is entrusted to Starwood under a 30-year hotel management agreement, renewable twice for a further 10 years. The management contract also includes the use of the "St. Regis" brand. In return for its services, the Hotel Manager is entitled to a fee consisting of a base (variable according to operating results, and in any case not less than $ 500,000) and an incentive part linked to the operating result achieved.

3.2.4. Cash Flow

The primary source of funds to manage the St. Regis' routine operations comes from the core business (Cash flow from operations). Short-term operations that absorb cash are:

- Routine maintenance
- Interest on debt
- Payment of fees
- Taxes
- Payment of dividends
- Day-to-day operations related to the core business

3.2.5. Transaction

Pre-IPO transaction involved the sale of Aspen's St. Regis, previously held by 315 East Dean Associates, Inc., to the newly formed Aspen REIT, Inc. 315 East Dean Associates, Inc. will be compensated with the payment of $32,500,500 raised through the IPO plus 51% of the equity shares of the new company and all of the OP Units (1,743,368)[83].

3.2.6. Distributions

In order to maintain its REIT status, Aspen REIT, Inc. is required to distribute 90% of net taxable income. The initial intention expressed in the IPO charter was to distribute annually $ 1.16 per share ($ 0.29 per share each quarter), corresponding to a yield of approximately 5.8%; however, it is stated that the amount of dividends is linked to the change in cash flow.

3.2.7. Main Risks

With regard to the risk section, the IPO prospectus is certainly more detailed than the Whitepaper and describes each risk in abundance[84].

The following highlights the main risks identified that are not attributable to general economic trends:

- Single-asset REIT - the fact that the REIT's purpose is to manage a single asset poses a risk to investors due to the lack of diversification.
- Management - the future performance of Aspen REIT, Inc. depends mainly on the active role of Mr. De Baets (as CEO of ER-REIT, Inc. - asset management company) and his network; therefore, in case of termination of the contract, the company would suffer a great loss.
- Cost structure - in the hospitality market, as already mentioned, the cost structure sees the predominance of fixed costs over variable costs, so in periods of revenue volatility there is a clear deterioration in margins. Unstable cash flows in turn translate into a reduction in the ability to distribute dividends.
- Indebtedness - the risks associated with the level of indebtedness include the automatic activation of certain clauses when certain thresholds of leverage are exceeded that apply to both Aspen REIT, Inc. and the guarantors of the debts assumed (including 315 East Dean, Associates Inc. and other companies under Mr. De Baets). The restrictive covenants would

[83] It can be useful to recall that equity shares and operating partnership units are different securities. For further details see *Appendix – Operating Partnership Units*

[84] It will be discussed in detail in section *3.3.1 – Whitepaper. Section 1: Aspen Digital, Inc. Activity.*

directly affect the company's ability to pay dividends. In addition, since the company owns only one hotel, revenues are forcibly tied to the performance of a single asset.

- Reduced ability to pay dividends - the dividend policy is closely tied to the company's operating and management situation. The Prospectus identifies various scenarios that would affect the dividend policy such as the loss of tax status as a REIT which would result in higher taxes and therefore reduced cash flows.

In addition, the prospectus repeatedly emphasizes the liquidity risk that investors could face if an active market for the shares does not develop.

3.2.8. Lock-Up Agreement

The Company's statute establishes limitations on the transfer of OP Units and shares: since 315 East Dean Associates, Inc. has entered a loan agreement in April 2017, even if the loan has then been acquired by the new operating partnership, Mr. De Baets is still the guarantor and may not transfer his units throughout the term of the loan without seeking written consent; however, express provision is made for the OP Units to be converted into common shares or for the Company to repurchase the units.

3.3. Tokenization

With the IPO chapter over, management decided not to give up on the idea of fractionalizing the ownership shares of the St. Regis in Aspen and embarked on the project of tokenization via blockchain. This process is undoubtedly an incredible innovation: at the time it was not only the first single-asset REIT to go to market, but also the first Real Estate asset to be tokenized. Mr. De Baets commented: *"We believe many people secretly want to own a piece of the St. Regis Aspen hotel. Owning a digital token is the equivalent of owning a share and is a digital security. We saw that doing an IPO was not scalable through the traditional route. Seeing where the blockchain market was heading, we saw the opportunity to be first-movers with our token offering for the St. Regis Aspen."*[85].

On August 8, 2018, Templum Markets[86] announced the launch of the Tokenized Asset Offering (TAO) of a digital token named "Aspen Coin." Concurrently, Indiegogo[87] officially opened the

[85] Carroll, R. (2018a). In $18 million deal, nearly one-fifth of St. Regis Aspen sells through digital tokens. The Aspen Times. Published.
[86] Templum Markets, LLC is a SEC and FINRA registered broker-dealer that operates as ATS (Alternative Trading System).
[87] Indiegogo is a crowdfunding platform that acts as a marketing partner for STO.

crowdfunding page for the tokenization's capital raising. Therefore, the Whitepaper[88] containing all the information about the company, the tokenization process and the Aspen Digital Coins is published. The STO was intended for accredited investors[89] only – therefore, the number of potential investors is reduced compared to an IPO – and included an offering of securities (tokens) in accordance with Regulation D 506c[90]. Each Aspen Coin, valued at $1.00, represents an indirect interest in Aspen Digital, Inc, which, on the organizational chart, has taken the place of Aspen REIT, Inc.

In October 2018, the placement ended with the achievement of the funding goal, $ 18,000,000 (with a minimum investment of $10,000), a signal of the great interest from the market.

On July 22, 2020[91], following the issuance of the Aspen Coins, it was decided to change[92] the architecture of the tokens by adopting the Securitize system and to manage the exchanges on the tZERO[93] platform; at the same time, the tokens were renamed to "ASPEN".

3.3.1. Whitepaper

The document that accompanied the Security Token Offering was published directly on Indiegogo and on Templum Markets' page. The 119-page Whitepaper is significantly shorter than the IPO Prospectus (230 pages long in total), and is divided into only 4 sections:

- Section 1: General Information about the business of Aspen Digital, Inc.
- Section 2: Management Contracts and Composition of the Board of Directors.
- Section 3: Description and composition of capital of Aspen Digital, Inc.
- Section 4: Financial Statements and Notes to Financial Statements.

The first three Sections are packed into 37 pages (as opposed to 182 pages in the IPO Prospectus), and although the same topics are covered, the document is much less detailed. The following analysis follows what was done in relation to the Prospectus and will focus on the main differences with particular attention to the most important aspects of tokenization.

[88] It should be noted that the Whitepaper found and used in this paper is the version published on August 24, 2020, at the same time as the migration to the new tZERO exchange platform.
[89] In US, accredited investors must comply with the following rules: annual income greater than $200,000 (or $300,000 for joint income) for the last two years, with equal expectations for the current year or net worth greater than $1,000,000 (excluding the value of the primary residence).
[90] For further details, see Appendix.
[91] Business Wire. (2020). tZERO Partners with Aspen Digital Inc. to Enable the Trading of the St. Regis Aspen Digital Security. https://www.businesswire.com/news/home/20200722005476/en/tZERO-Partners-with-Aspen-Digital-Inc.-to-Enable-the-Trading-of-the-St.-Regis-Aspen-Digital-Security
[92] Alois, J. D. (2019, January 16). Aspencoin Migrates Over to Securitize with $18 Million Security Token. Crowdfund Insider. https://www.crowdfundinsider.com/2019/01/143318-aspencoin-migrates-over-to-securitize-with-18-million-security-token/
[93] tZERO, LLC is a SEC and FINRA registered broker-dealer that operates as an ATS (Alternative Trading System).

Section 1: Aspen Digital, Inc. Activity

The first part of the document presents the main information about Aspen's St. Regis, its business, its history and the organizational chart of Aspen Digital, Inc. 's parent/subsidiary companies, information already presented at the beginning of this chapter.

Notably, only a few lines are devoted in the Whitepaper to the presentation of the major risks incurred by Aspen Digital, Inc. and faced by investors; the lack of emphasis on liquidity risk is particularly noteworthy. Also, the financing agreements (in the description of the terms and conditions) do not enjoy the same level of detail found in the Prospectus. It has been chosen to deal with the risks in a separate paragraph as tokenization exposes investors to additional risks not mentioned in the IPO document.

Risks

The main risks are related, in addition to the prolongation of the restrictive measures caused by the pandemic, to the proper functionality of the technology underlying the token management process. A further risk is posed by the digitization of ownership: cybersecurity issues or issues relating to the interruption of the functioning of the platforms for exchanging and storing tokens could undermine investor confidence and slow down the process of adopting the innovation. The same confidence is also linked to the state of health of the entire ecosystem of cryptocurrencies and the blockchain (on which they are based); an excess of euphoria could, in fact, lead investors to take excessive risks, just as an excess of fear would cause a slowdown in development and a loss of important opportunities.

Section 2: Contracts

The second section of the Whitepaper provides details of the management contracts signed: the Hotel Agreement was entered into for the routine management of the property, while the Hotel Management Agreement sets out the terms for the management of the hotel. Beyond the information on the contracts, the main difference with the Prospectus lies in the absence of the compensation policies and the composition of the various Committees.

Hotel Agreement

The St. Regis, Aspen is leased to Aspen Resort TRS Operating Tenant, LLC, which manages the asset through ER-RE, LLC (Manager) led by Mr. Baets. The Manager has the obligation to manage the Asset (renovation operations, extraordinary maintenance, financing, external relations with Hotel Manager, banks and investors). The management agreement provides for the payment of a base fee (calculated as a percentage of operating revenues) plus a variable incentive (calculated as a percentage of operating profits).

Hotel Management Agreement

The hotel is managed under a management contract with Starwood, with a duration of 30 years renewable for another 10 years twice. Since the contract's terms are the same as those presented in the IPO Prospectus analysis[94].

Section 3: Capital Structure and Digital Tokens

The third section of the document is divided into two parts: the first describes the "traditional" securities (the share capital is in fact composed of common stocks and preferred stocks) and the methods of issue and transfer; in the second part, however, the paper describes the nature and functioning of digital tokens, the rights associated with them and the methods of issue, transfer, and storage.

Ownership

Aspen Digital Inc.'s ownership is divided into 18,000,000 common stocks, 125 preferred stocks (in both cases allocated by private offering), and 18,000,000 issued digital tokens that represent patrimonial rights (i.e., rights to receive dividends), but are defined as a separate instrument from the stocks. Ownership of the common stocks grants the holder voting rights at shareholder meetings, including the ability to nominate directors, while ownership of the digital tokens grants only patrimonial rights. The common stocks were offered at a par value of $0.0001 per share, with a premium of $0.99; the preferred stocks were allocated at a par value of $0.0001 with a value of $1,000 per share, for a total raised of $125,000, are subject to sale and exchange restrictions and have no voting rights.

Digital Tokens

Issued tokens ("ASPDs") are digital representations of common stocks that replicate their price movements.

Initially issued digital tokens ("Aspen Coin") were created by Templum Markets, LLC on the Ethereum blockchain[95] and comply with the ERC-20 standard. In August 2020 the migration to the new tZERO platform took place. The new "ASPD" tokens were issued by Securitize using their Digital Securities compliance protocol (an ERC-20 compliant standard) and are traded on the Tezos blockchain, which is compatible with the tZERO infrastructure.

[94] See section *3.2.3 Contracts' Terms* for further details.
[95] Aspen Coin Token | ASPD Price. (n.d.). Security Token Market (STM). Retrieved 2021, from https://stomarket.com/sto/aspencoin-st-regis-aspd

Buying and selling of the tokens was done through Dinosaur Financial Group, LLC (broker), while custody services for the broker-traded securities were provided by Electronic Transaction Clearing, Inc. (now active as Apex PRO)[96]. Commissions on the purchase and sale of tokens are collected directly by Apex PRO on behalf of Dinosaur Financial Group, LLC and then paid to tZERO.

Custody

The 18,000,000 digital tokens issued are held and managed, on behalf of the tokenholders, directly by Computer Share, Inc. (hereinafter referred to as the "Depositary"), pursuant to a deposit agreement. Fees will be paid to the Depositary for the safekeeping and management of the tokens and common stocks and the payment of dividends. In addition, the Depositary is required to maintain and record trades involving Aspen Digital Tokens and shares.

As stated above, ownership of Aspen Digital, Inc. is held by the token holders who exercise it in the manner and within the limits set forth in the Whitepaper and through the Depositary. Specifically, voting power is vested solely with the holders of the common stocks, and only exceptionally may be extended to the tokenholders through a voting request issued by the Board of Directors and transmitted through the Depositary.

Distributions

Holders of tokens are entitled to share in the profits of the company in the form of dividends; such dividends are normally paid (net of transaction fees) through the Depositary in the form of cash or cryptocurrency. With respect to distribution and conversion into cryptocurrency, the Depositary will use the market conversion rate and, in the event that it is impossible to convert dollars into units of cryptocurrency chosen by the token holder, will distribute dividends in the form of cash. The distribution of dividends in the form of stocks is a case provided for in the Whitepaper and occurs in any case through the issuance of digital tokens by the Depositary. The transfer and sale of digital tokens may be restricted by the exchange platform for legal reasons: from the time that the Board of Directors deems it appropriate to be able to complete registration as a REIT, Aspen Digital Inc., and its shareholders, must comply with requirements imposed by regulators and bylaws (such as prohibiting a single individual from owning more than 9.8% or fewer than five individuals from owning more than 50% of the company's shares), accordingly, the exchange and depository platform have the ability to restrict trading.

As of December 31, 2019, dividends declared and paid result in (for the year 2019) $1,080,000 for token holders, equivalent to a 6% annual return on initial investment.

[96] Both broker-dealers (Dinosaur Financial Group and Apex PRO) are registered with SEC and FINRA.

Preferred stockholders, on the other hand, received a dividend of $13,834 on an initial investment of $125,000, for an annual return of 11%. This information, as well as all financial instrument and balance sheet item information, is contained in the Notes to the Financial Statements of Aspen Digital, Inc. so it is not immediately accessible as it is in the IPO Prospectus.

Section 4: Financial Statements

The last section is devoted to the presentation of: financial statements of Aspen Digital, Inc (2019), consolidated financial statements of Aspen OP, LP and 315 East Dean Associates, Inc. (2018), financial statements of Aspen OP, LP (2019). In terms of comparative analysis, there are no particular differences in the degree of detail of the documents presented in the IPO Prospectus and Whitepaper.

Finally, an "Aspen Performance Update" document is released each month on the tZERO exchange platform website[97] in which key information on Hotel's performance trends and benefits reserved for token holders are discussed. The monthly data release includes key industry metrics (Occupancy Rate, ADR, RevPAR), revenues and profits divided by Room department, Food and Beverage department, Spa department and Minor Operating department, and a report containing the most important items of expenses and revenues.

3.4. Ipo Prospectus vs Tokenization Whitepaper

The different structures of the two documents have a particular influence on the explanation of the risks connected with the investment; it must be remembered, in this regard, that the presentation of risks is a subject particularly felt by national regulators, the ultimate aim of the SEC is, in fact, to oblige companies that are listed to define as precisely as possible the characteristics and risks of their business so that investors can make a coherent decision. The same need is felt, therefore, in the case of securities offerings - being instruments similar, and in some cases alternative, to regulated instruments, regulators have had to intervene to define a reference regulation, which, as we saw in the first chapter, is still in the embryonic stages of development.

The IPO Prospectus is composed of 230 pages divided into 182 pages on the analysis of the business, the company's structure and the major risks, and 48 pages dedicated to the analysis of the financial statements of Aspen REIT and its associated companies. The Whitepaper, on the other hand, proves to be a more versatile document with the 182 pages on business analysis reduced to only 37, for a total of 119 pages (including financial statements). In this way, the different length of the two documents is immediately apparent. In terms of content, there are no particular differences between the two examples, although the lesser degree of detail regarding the risks is noteworthy. What I would

[97] tZero. (n.d.). ASPD. Retrieved 2021, from https://www.tzero.com/asset/ASPD

like to underline is that, despite the fact that the IPO prospectus is very long on certain aspects, I would not define the white paper as "incomplete"; on closer inspection, the most scarce part of the document - compared to the IPO prospectus - is the one concerning the composition of the various committees. Furthermore, the reference to the specific law of the State of Maryland (where Aspe Digital, Inc. operates) is totally missing. The business data, starting from the description of the activity, up to the analysis of the outlook and the industry, are present and satisfactory. What, on the other hand, is slightly odd is the decision to relegate the analysis of certain aspects linked to company management (such as the presentation of financing terms or the valuation of tokens and common shares) directly to the Notes to the Financial Statements. This choice makes the general analysis of the STO slightly more complicated, however, it is necessary to bear in mind that these instruments are intended for accredited investors, therefore certainly more attentive than an average investor; moreover, the issuing company is obliged, for reasons of transparency, to periodically publish reports on the management performance, even if - and it must be emphasized here - the obligation is required by the token exchange platform (in this case tZERO) and the reports are not certified by an auditing company. Although even listed companies are not required to certify quarterly financial statements (10-Q), they have much more stringent disclosure obligations than their tokenized counterparts: annual audited report (10-K), current report (8-K) in which all extraordinary transactions are indicated, changes in management, proxy statements in which issues that will be submitted to a vote at the shareholders' meeting are anticipated. This is certainly the most critical aspect as it contributes to a certain diffidence towards STOs compared to IPOs (from the investors' point of view). Undoubtedly, the supervisory bodies have ample room to increase the request for documents and improve the transparency of the data published. Another point I would like to emphasize concerns the rights associated with holding tokens, which can differ substantially from the rights embedded in common stocks. Tokens are fully programmable and automatable through smart contracts, as opposed to common stocks, which represent well-defined and standardized financial instruments. In this specific case, ASPDs only incorporate equity rights and not voting rights, however, thanks to the use of smart contracts, voting rights can be temporarily extended to tokenholders. Finally, a positive note concerns the fact that, surprisingly, the STO paper did not insist too much on the blockchain or on the technical aspects: you can understand the willingness of the issuer to focus on the innovation made possible by the blockchain, and not on the underlying technology; it is also true that, with the passing of time, the market has become much more familiar with the concept of tokenization and with the birth of the first exchanges and authorized broker-dealers there is no longer the need to "convince" investors.

In conclusion, I believe that the specific ASPD whitepaper contains enough information to allow investors a complete and transparent analysis, and I believe that any shortcomings that are found can be remedied with the definition of clear and mandated guidelines by the regulators. The use of registered broker-dealers represents a step forward in the right direction: the regulation to which they are subjected is the basis of market confidence that, no longer needs to worry about technical details and can evaluate more carefully the fundamentals of projects.

3.5. Current and Future Opportunities

Finally, after having outlined the main characteristics of the tokenization project, we can now move on to analyze its implications in terms of liquidity and future scenarios. If it is true that tokenization represents an unprecedented innovation in the Real Estate investment landscape, it is equally true that the real scope of this innovation must be measured through its degree of adoption and diffusion. To borrow the concepts expressed by Geoffrey A. Moore in his "*Crossing the Chasm*", regarding the adoption cycle of technologies, it would be said that a technology is established when it crosses the "chasm" that separates the *early adopters* from the *early majority*. Thus, in order for the majority to be interested in this novelty, it must first meet the initial promises of overcoming the limitations of typical forms of fractionalization.

3.5.1. Liquidity

The starting point of the tokenization process applied to the Real Estate market is to increase the liquidity of an investment that is traditionally associated with illiquidity. Measuring the liquidity of an instrument is not a simple task, but in this context we can refer to the parameters that are traditionally used to assess the liquidity of a market: depth, breadth and elasticity. Depth is the ability of the market to absorb large buy/sell orders without altering prices; breadth is measured as the spread between the bid and ask (the larger the spread, the more uncertainty there is in the market, therefore the less liquid the instrument); elasticity relates to the speed with which the market manages to return to a level of equilibrium following large exchanges.

Thanks to the data provided by tZERO, it is possible to analyze the volume of ASPD trades that occur daily on the platform as well as the bid-ask spread; the extrapolated data are referred to the period August 24, 2020[98] – September 22, 2021, and contain the information related to the opening price, maximum, minimum, closing price and trading volume. The highest volume of 137,720 tokens traded in a day was reached on August 24, 2020, the day the token started trading, at an average price of $1.41 (calculated as the average between the maximum and minimum price), with a closing price

[98] Date the migration to the new platform was completed.

of $1.32. The average trading volume stands at 2,581 tokens traded per day over 273[99] days, while the median is 545 tokens. tZERO operates as a broker-dealer, so it can send orders both on behalf of clients and for its own account. Compared to a market where market makers operate by buying and selling all time to ensure market liquidity, it is clear that in this case liquidity remains a very important issue. However, thanks to the switch to the new tZERO platform, the number of investors participating in the project has increased from the original 13 (who bought tokens in the primary offering) to about 550 today[100]. As of 23/09/2021, the breadth of the token was quite large in comparison to more liquid securities): bid was $1.12, while ask was $1.14, with a bid-ask spread of $0.02.

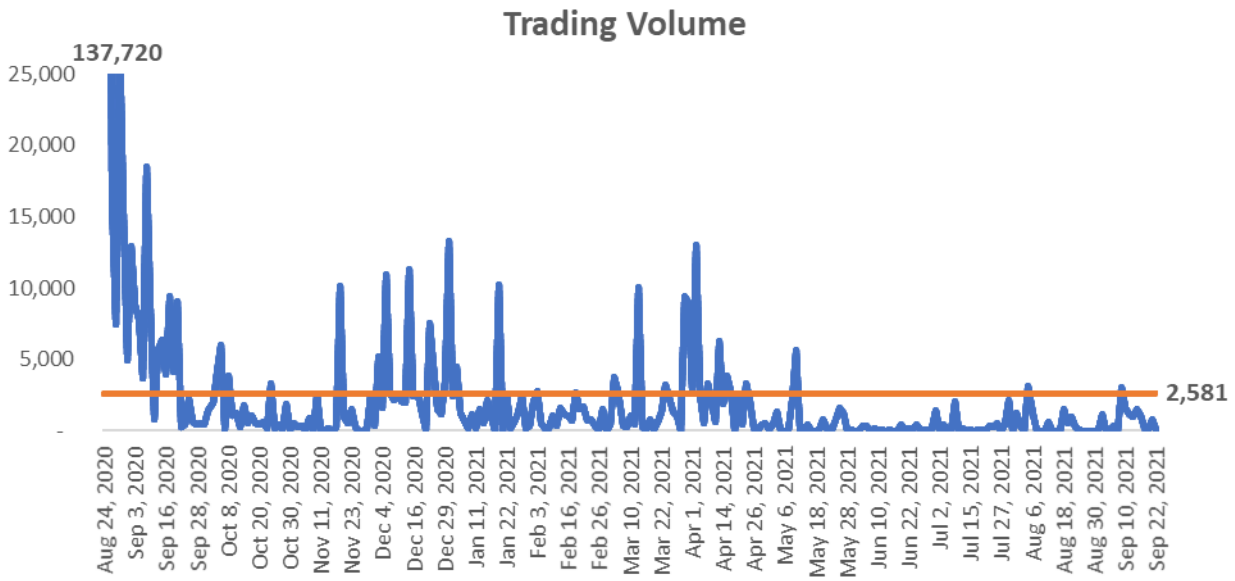

Figure 11 – ASPD Trading Volume. Source: personal analysis based on tZERO data: https://www.tzero.com/asset/ASPD

An analysis of the price trend deserves a separate mention. ASPD tokens were issued at a unit value of $1.00, however, as early as the days following issuance, they reached a high of $1.33 per token on September 25, 2020. The minimum closing price reached by tokens was $0.94 on August 18, 2021, so it traded at a discount of 6%. The average price at which ASPDs have traded is $1.23, a premium of 23% over the value of issuance.

[99] Updated to 22/09/2021.
[100] Tesfaye, S., & Harttraft, T. (2021, June 24). The Tokenization of Real Estate Investing. MarketSpace Capital. https://marketspace.capital/the-tokenization-of-real-estate-investing/

Figure 12 – ASPD Price Evolution. Source: personal analysis based on tZERO data: https://www.tzero.com/asset/ASPD

It can be concluded, therefore, that tokenization has achieved at least its initial purpose of overcoming the illiquidity of these instruments, even if the development of a flourishing secondary market is still a long-term objective. It is true that, although the trading volumes reached are not yet close to those of traditionally more liquid instruments, such as stocks, the success of this first example should be noted. Stocks (and Bonds) are, in fact, the most liquid assets – after cash – because they can be converted into cash in within days. To get a broader view of the comparison, the following is a graph of the trading volumes of ASPD (in green) against those of Hilton Worldwide (ticker: HLT – in blue) and DiamondRock Hospitality Company (ticker: DRH – in red), a US REIT that owns 31 premium hotels and resorts.

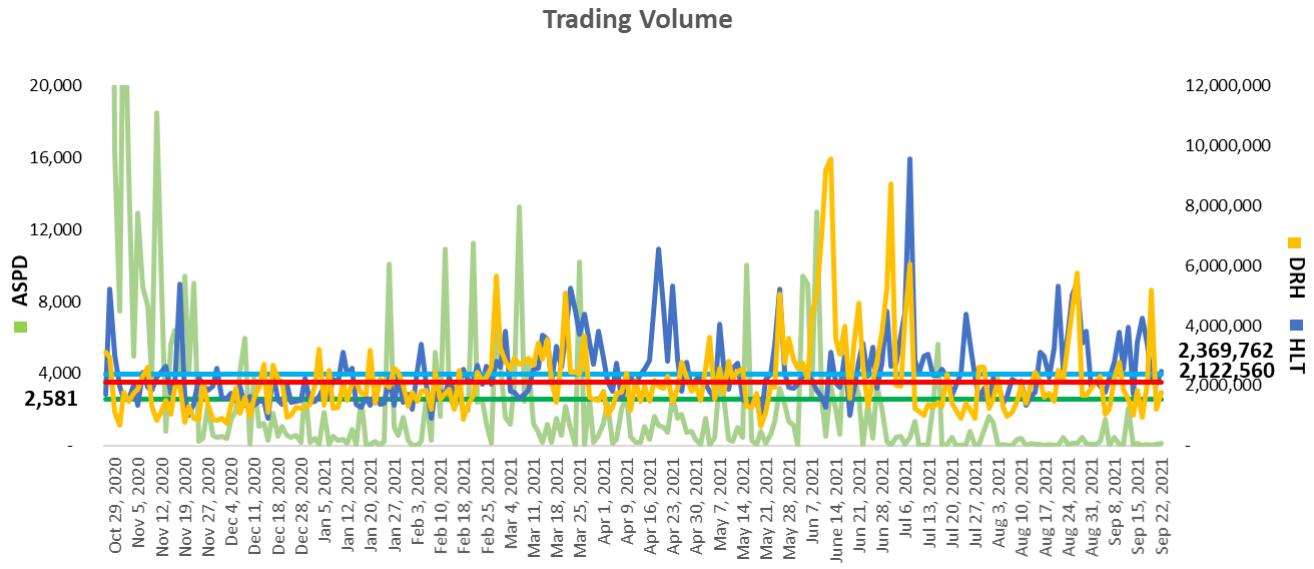

Figure 13 – Trading Volume Comparison. Source: Personal elaboration on data from nasdaq.com

As you can see, stocks' volumes are far higher than Aspen Coin; for the period August 24, 2020 – September 22, 2021, the average of trading volumes are 2,581 for Aspen Coin, 2,122,560 for DiamondRock, and 2,369,762 for Hilton.

Future opportunities and scenarios made possible by technological innovation will be explored in greater depth later, but for now it is worth examining the key drivers that led to the success of the tokenization of the St. Regis in Aspen.

3.5.2. Key Drivers of Success

The success of the tokenization of Aspen's St. Regis depends on several factors, some related directly to the characteristics of the asset, while others stem from the complex ecosystem around the digitization process itself.

Endogenous Factors

The high attractiveness of the hotel has played a major role in catalysing the interest of investors. Beyond the "St. Regis" brand (owned by Starwood), the asset itself represents a very important hub in the context of Aspen, both as a center of aggregation of the country's social life and as a holiday destination.

Predictable results and relatively stable cash flow generation are two key characteristics of the hospitality business that have helped mitigate investor perceptions of risk given the long track record of operating results.

Exogenous Factors

One of the main strengths of the project is undoubtedly the role of tZERO, a platform we have already introduced and which it is now appropriate to explore in greater depth. Even if, as we have seen, tokenization provides a comprehensive and promising answer to the problems afflicting the Real Estate market, the idea alone is no guarantee of success; therefore, among the factors that have led to success we must also mention the services and network of the exchange platform. The biggest obstacle to the spread of tokenization as a system of liquidity creation in the Real Estate market (compliance with various regulations) seems to have been overcome thanks to a network of companies that collaborate and take care of the entire process: legal advisory, due diligence, tokenization, custody of tokens and secondary trading. Performing the initial pre-screening and due diligence activities helps to reduce, if not eliminate, transaction costs that previously only occurred between private parties: by removing all information asymmetries between parties, there is no longer a need for investors to spend time and resources analyzing the asset and its legal history; this speeds up transactions and reduces costs (resulting in increased ROI). Obviously, platform managers ensure a minimum level of disclosure of asset performance, which is usually comparable to that required by limited partners[101].

In this specific case, tZERO is not only a broker-dealer, but also provides a series of services, following clients throughout the tokenization process, or assisting them even in the capital raising phase. In addition, thanks to a system defined as "blockchain agnostic", the platform integrates seamlessly with whatever blockchain is requested by clients and allows the creation of smart contracts that are fully programmable from scratch.

For the St. Regis, tZERO[102] handled token management and migration to a new purpose-built platform to enable token exchange and facilitate the development of a secondary market. The liquidation (intended here as the development of liquidity) is, therefore, the most important service rendered by this kind of platform which, in the absence of market makers, generates liquidity through a "private" network of broker-dealers who are in constant contact with thousands of investors, both accredited and non-accredited. In addition to this, there is also the presence of a dedicated proprietary platform that can be reached directly by anyone and, thanks to the same day settlement of trades, investors can continuously trade their tokens.

3.5.3. Future Opportunities

The goodness of the operation is testified not only by the great success achieved, but especially by the number of projects in the pipeline, both by Elevated Returns, LLC itself, and by other

[101] tZERO, to cite an example, requires a monthly performance review.
[102] Tesfaye, S., & Harttraft, T. (2021, June 24). The Tokenization of Real Estate Investing. MarketSpace Capital. https://marketspace.capital/the-tokenization-of-real-estate-investing/

companies that are interested in the tokenization of Real Estate assets. If we consider that the potential market for Commercial Real Estate is approximately $60 trillion, it is easy to see the scope of opportunities that "liquidity optionality" can generate in the coming years.

Mr. De Baets has announced his intention to proceed with the tokenization of a portfolio of Commercial Real Estate assets worth approximately $1 billion[103], while tZERO has recently signed a partnership with crowdfunding platform NYCE with the intention of tokenizing $18,000,000 of Real Estate assets[104]. Currently, tZERO holds 70% market share among security token exchanges, with 3 tokens present (ASPD, OSTKO, TZROP). In 2020, exchanges on tZERO's platform[105] amounted to approximately $58 million, while in the first part of 2021, it was more than $30 million; in addition, about 30% of the tokenized assets traded on the platform are Real Estate assets. As of May 2021, the trading volume was approximately $4,800,000 with a total capitalization of $504,848,306[106]. Also in 2020, Vertalo, a company that deals with the issuance and management of digital securities, announced[107] that it has embarked on a project to tokenize Real Estate assets worth $300 million on the Tezos blockchain via the tZERO platform.

The blockchain revolution does not stop only at tokens representing equity, some industry players have in fact hypothesized a new dual token structure to represent the interests of both shareholders and debtholders[108]. Combining this structure with a waterfall model, a fair division of risks and profits between the holders of the different classes of tokens is achieved.

In conclusion, what emerges from this analysis is that blockchain integration in this industry is working and does not appear to be slowing down. The adoption of a token-based economy still seems to be in its early stages, but the continued attempts and experimentation with new models seem to be moving in the right direction, even if we are still at a stage where the market is mostly made up of *early adopters*. The great challenge we face, therefore, will be to overcome that "*chasm*" mentioned at the beginning and convince the majority of investors. In this regard, there is a need to remark a

[103] Bloomberg. (2021). tZERO Partners with Aspen Digital Inc. to Enable the Trading of the St. Regis Aspen Digital Security. https://www.bloomberg.com/press-releases/2020-07-22/tzero-partners-with-aspen-digital-inc-to-enable-the-trading-of-the-st-regis-aspen-digital-security

Business Wire. (2020). tZERO Partners with Aspen Digital Inc. to Enable the Trading of the St. Regis Aspen Digital Security. https://www.businesswire.com/news/home/20200722005476/en/tZERO-Partners-with-Aspen-Digital-Inc.-to-Enable-the-Trading-of-the-St.-Regis-Aspen-Digital-Security

[104] Business Wire. (2021). tZERO Joins Forces with Real Estate Crowdfunding Company, NYCE, to Digitize & Trade $18 Million of Securities in the Company's Common Stock. https://www.businesswire.com/news/home/20210630005345/en/tZERO-Joins-Forces-with-Real-Estate-Crowdfunding-Company-NYCE-to-Digitize-Trade-18-Million-of-Securities-in-the-Company%E2%80%99s-Common-Stock

[105] Tesfaye, S., & Harttraft, T. (2021, June 24). The Tokenization of Real Estate Investing. MarketSpace Capital. https://marketspace.capital/the-tokenization-of-real-estate-investing/

[106] Security Token Market. (2021, June 24). Security Token Market Report: May 2021 - Security Token Market Blog. Medium. https://blog.stomarket.com/security-token-market-report-may-2021-481b5873d89f

[107] DiCamillo, N. (2020). Vertalo, tZERO Are Bringing $300M in Real Estate to the Tezos Blockchain. CoinDesk. https://www.coindesk.com/business/2020/04/17/vertalo-tzero-are-bringing-300m-in-real-estate-to-the-tezos-blockchain/

[108] Lippiatt, T., & Oved, M. (2018). The Two Token Waterfall.

"limitation" of the organizational structure of the model of Aspen Digital, Inc. The fact that the tokenization involved the company that manages the property - although not directly - nevertheless implies an, although minimal, volatility of results, linked to the performance of the hotel management. This makes the distribution of dividends more variable, increasing the implicit risk in the type of investment. Ultimately, this model achieves a tokenization of the hotel activity - even if appropriately conducted within the property - rather than of the Real Estate asset itself.

The next step will be the opening up of primary offerings to the retail public (an objective that tZERO seems to have already understood, given its partnership with Robinhood[109] to exchange tokens on the platform), and for this to happen it will be necessary to work in conjunction with national regulators who will have the arduous task of channeling the innovative forces within a regulatory environment that is sufficiently regulated but not such as to inhibit the growth and development of this model.

[109] Robinhood Markets Inc. is a popular online trading platform that allows users to invest in financial markets even in small amounts. In recent times it has become famous because it has been the protagonist of short squeeze actions by traders who met on Reddit.

4. Practical Implication of Tokenization

After having described, on a theoretical level, the main benefits related to the application of the tokenization process, we will now try to identify whether this innovation really meets the needs of the market, and whether it can represent a possible trend in the evolution of the business model in the lodging industry. For the moment, we have chosen to focus on the main problems underlying business in the lodging industry, in particular, the strong presence of fixed costs and the inability - or impossibility - of reconfiguring resources rapidly in crisis scenarios. This is especially true if we consider that small and medium-sized hotels adopt an asset-heavy strategy that limits the resources available to develop the core business. In other words, what we will try to establish in the course of this chapter is whether and how, in practice, fractionalization via blockchain can propose itself as a solution to those problems that have already been widely highlighted, and bring new benefits to the hospitality sector, also with reference to situations in which the company is already in a state of crisis (distressed situations). Finally, the analysis will conclude with a brief discussion on the best practices of the tokenization implementation process.

4.1. Liquidity and Strategy

The problem of liquidity has already been discussed, as well as the benefits linked to the adoption of an asset light strategy; what we want to highlight at this point is the real weight that fixed costs have on this type of business model, and we will do this by observing the impact that the recent pandemic crisis has had on hospitality structures, no longer only at a general level (as anticipated in paragraph *2.3.1 Covid 19 Impact on Lodging Industry*), but specific by geographic area.

Historically, hotels had to adapt their management structure to the evolution of the competitive environment, moving from integrated models (what has been defined as "Independent Hotels") to separate models (such as franchising and management agreements) in order to achieve maximum efficiency in the use of resources. The so-called asset light strategy is not, however, universally applied, with differentiation based on both geography/culture. The so-called asset light strategy is not, however, universally applied, with differentiation on a geographical/cultural basis - in this context, Europe, and even more Italy, still show themselves to be quite anchored to traditional models built on vertical integration (in which ownership of the business and the property coincide), - and size[110] (the small average size of hotel businesses lends itself less to expansion through franchising/management contracts) - tendentially, as the size of the hotel increases, there is greater

[110] Rather than size, perhaps it would be worth mentioning the category to which it belongs as a key factor: hotel chains are mainly concentrated in the Upscale category - source: Franzese, A., & Ribaudo, G. (2020). Hotels & Chains in Italy 2020. Horwath HTL; Associazione Italiana Confindustria Alberghi; Cassa depositi e prestiti.

use of separate business models. And it is precisely this last concept that will be the common thread of the discussion in this chapter: having established the benefits of an asset light strategy, can tokenization represent the way to innovate the operating models of those categories of hotels that are forcibly excluded from the separation of ownership and management due to the size factor? Clearly, at this point, the business model that is thought to benefit most from fractionalization via blockchain is the one in which the same party owns the asset and the hotel business; therefore, even if a generalization is always possible, we will try to refer mostly to this category - which represents, however, the second most populous at European level and the first at Italian level[111].

The starting point for this reasoning will be the recent pandemic crisis which, with the consequent restrictive measures, has highlighted the critical aspects of the sector. Analyzing, therefore, the dynamics of the impact on the budgets and the reactions of the accommodation facilities, it will finally be possible to give an answer to the effective validity of tokenization as a means of adopting an asset light strategy.

4.1.1. Covid Impact

As seen in paragraph *2.3.1 Covid-19 Impact on Lodging Industry*, there have been three main directions through which the pandemic has exhausted its effects - sometimes exacerbating dynamics already in place, especially in the Italian economic context:

- High impact of fixed versus variable costs;
- Tightening of credit policies by banks;
- Presence of real estate assets on the balance sheet.

At a closer look, the underlying problem actually has a single genesis: the huge presence of real estate assets creates an imbalance in the balance sheets of hotels (here the reference is already to independent hotels) that translates into a net worsening of liquidity and leverage ratios when an exogenous factor, such as a crisis, affects costs and revenues in an unequal way. In the 2020 report on the impact of Covid-19 on the Italian hotel sector prepared by CDP in collaboration with EY and Luiss Business School, this issue is clearly expressed: "*The small size of the hotel structures is accompanied by a limited availability of capital, often represented by the hotel properties themselves, which obliges the companies to expose themselves to external financing, especially from banks*"[112]. The natural consequence is, therefore, a tightening of the credit policies operated by the banks which, at the moment in which uncertainty takes over in the markets, reduce capital lending. In such a

[111] Horwath HTL. (2019). European Chains & Hotels.
[112] Camerano, S. (2018). Il sistema alberghiero italiano. Cassa depositi e prestiti.

context, it is easy to imagine how the possibility of liquidating part of the assets becomes an unavoidable necessity.

US Data

Returning to the numerical data, the pandemic crisis erupted when the US market was already experiencing a slowdown: after about a decade of growth, from 2010 to 2019, 2019 saw the first negative data with the number of rooms requested growing less than the number of rooms offered[113] (+1.9% vs. 2.0%), while ADR grew only 1%, a value lower than the inflation rate of 2.3%. During 2020, occupancy has fallen by 33.3% reaching 47%, ADR by 21.3% standing at about $103 and RevPAR by 50.5%, dropping from $86.64 to $42.88. However, the outlook for 2021 and 2022 remains positive:

- Expected demand growth is 5.4%, while supply growth stands at 18% for 2021. In 2022, operators expect demand and supply to grow by 2.4% and 25.2%, respectively, with a clear excess in demand.
- Occupancy rate growth is expected to be 53.3% in 2021 and 60.1% in 2022.
- Expected ADR growth is 6.3% to approximately $109.47 in 2021 and 7.2% to approximately $117.34 in 2022.
- Expected RevPAR growth for 2021 is 36.2% to approximately $58.39, while 2022 is expected to be 20.9% higher than 2021 at the level of $70.57.

European Data

European data[114], on the other hand, outline a far more alarming situation: the imposition of more restrictive policies than in the US has caused the occupancy rate to fall to 13.7% in 2020 and 31.6% in 2021, with Germany in last place. In this context, however, there is a fluctuation in market demand for rooms linked to vaccination trends - and therefore to the progressive relaxation of measures, even if, with the emergence of the Delta variant of the virus, many countries have been forced to impose restrictive measures again. In general, demand in the sector is currently supported by domestic demand, given the difficulties and uncertainties in travel, even within the European Union itself. The average ADR plummeted by 18% compared to 2019, reaching €93 in 2020, while RevPAR fell by 62.5% to €30[115]. After the peak of the autumn months of 2020, in which the slowdown in contagions gave hope for the recovery of the economy, the situation at the beginning of 2021 seems to have even worsened: the average values of reduction of RevPAR in Europe vary from

[113] Cummings, M., & Keegan, R. (2021). United States: Hotel Market Trends & Analysis. Horwath HTL.
[114] R. (2021, July 14). Europe hotel occupancy update. STR. https://str.com/whitepaper/europe-hotel-occupancy-update
[115] STR. (2021). STR: Europe hotel performance for 2020. https://str.com/press-release/str-europe-hotel-performance-2020

-70% to -90% (compared to January 2020)[116]. The general sentiment of operators now testifies to the realization that full recovery will not occur until 2023[117], assuming a scenario in which the cyclical trend of the virus will allow a slow recovery of the economy, with an expected occupancy rate of 72% (same as 2019), an expected ADR of €109 (versus €111 in 2019) and an expected RevPAR of €79 (versus €80 in 2019). In any case, a recovery is expected to be driven mainly by the tourism and domestic business segment; the international business segment, on the other hand, will take longer, while the MICE (Meetings, Incentives, Conferences & Exhibitions) segment will be the last to recover.

Italian Data

Regarding the domestic situation, according to a survey conducted by Howrath Italia in collaboration with the Associazione Italiana Confindustria Alberghi[118], around half of the Italian hotels in the study experienced a drop-in occupancy rate, ADR and total revenue of more than 80% in the first half of 2020. It should be noted that approximately 17% of respondents reported a reduction in ADR of between 0 and 25%. In the first months of 2020, as a result of the restrictive measures, approximately 70% of the hotels surveyed remained open, while still limiting the services provided. The outlook in any case remains negative with 46% of respondents expecting to return to normality in a time horizon beyond 12 months, with a prevalence of the domestic tourism and corporate segments. On the contrary, the MICE segment will be the last to recover.

Therefore, it is in this context that the response of the Italian hotel sector to what has proven to be a crisis that has affected the productive sectors with varying intensity must be placed. The policies available to facilities to stem the damage of closures depend directly on the resources available; before the pandemic, Italian hotels were, on average, well capitalized (around 0.5 measured as Net Equity/Fixed Assets[119]), however, the loss of turnover on the one hand - with a loss of marginality (EBITDA/turnover) of 8. 4% in the Basic scenario and 26.4% in the Severe scenario - and the strong prevalence of fixed costs over variable costs (around 57% compared with 43%), on the other hand, contributed to the exhaustion of liquid resources, severely limiting the capacity to respond to the crisis. Establishments with a historic marginality of less than 5% (EBITDA/turnover) are those that

[116] Hospitality ON. (2021). January 2021: the European hotel industry remains stuck in a hole. https://hospitality-on.com/en/statistics-trends/january-2021-european-hotel-industry-remains-stuck-hole

[117] Krishnan, V., Mann, R., Seitzman, N., & Wittkamp, N. (2020, November 5). Hospitality and COVID-19: How long until 'no vacancy' for US hotels? McKinsey & Company. https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/hospitality-and-covid-19-how-long-until-no-vacancy-for-us-hotels

Kett, R. (2020). The Impact of COVID-19 on the European Hotel Sector. HVS. https://www.hvs.com/article/8876-the-impact-of-covid-19-on-the-european-hotel-sector

[118] Bačić, Z. (2020). Italian Hotel Market: Covid-19 Impact. Horwath HTL.

[119] Cassa depositi e prestiti. (2020b). Settore alberghiero e Covid-19.

suffer most from the worsening of capitalization indices due to the lower margin to be used to absorb the drop in turnover. The worsening of these conditions is reflected, therefore, in the strategies adopted: 73%[120] of hotels have invested in the adaptation of hygiene and sanitary conditions, 37% have decided to rationalize their organizational structure, about 30% have renegotiated the terms of contracts with their suppliers and have increased their investments in digital marketing. Notable, however, are the 11% who have decided to defer Capex and the 1% who are considering affiliation with a brand/chain.

In a similar context, the main measures adopted by the structures concerned the creation and update of security protocols, above all in relation to the indications issued by health bodies[121]. However, the effort made by some hotels/chains to invest in new technologies for managing customer relations should not be ignored: starting with the digitalization of check-in/check-out procedures, through the mechanization of catering services. It is clear that the pandemic has accelerated the development of those innovation trends that had recently emerged in the hospitality landscape, such as the integration of artificial intelligence or machine learning and data science applications. This wave of technology-driven investment, which has been in place since before the pandemic, has been driven primarily by large chains, which are twice as likely to prioritize technology investments as independent hotels[122]. In 2019, the Expedia Group surveyed between 1200 hoteliers and found that small independent hotels are more reluctant to adopt new technology than large chains due to entry barriers (entry costs associated with tech investments are better amortized by large hotels) and to integration with their current systems. Moreover, small hotels believe that they can extract more value from room renovation, that they are 1.5 times as likely as chain hotels to prioritize.

According to Hospitality Technology report in 2019[123], about 53% of hotels surveyed planned to increase IT investments, while 38% noted no change and only 8% expected a reduction. The hope for the near future is, therefore, that the recent crisis can also become an opportunity for independent hotels to invest in technologies that can make management more efficient.

In this regard, among the measures proposed to trigger and encourage the restart of the Italian tourism/hotel sector, CDP[124] highlights the need to contribute to the (financial) consolidation of facilities and the aggregation of small hospitality businesses, also thanks to the action of real estate funds. In other words, the age-old issue of the slowness and/or inability of small and medium-sized

[120] Bačić, Z. (2020). Italian Hotel Market: Covid-19 Impact. Horwath HTL.
[121] For further discussion about Covid-19 guidelines, refer to Appendix section 6.4 – Covid-19 Safety Measures.
[122] Expedia Group. (2019, October 1). New Study Reveals Technology Investment Priorities for Hotels. Cision. https://www.prnewswire.com/news-releases/new-study-reveals-technology-investment-priorities-for-hotels-300928398.html
[123] Hospitality Technology. (2019). Hotels gear up for the age of augmented authenticity.
[124] Cassa depositi e prestiti. (2020a). Settore alberghiero e Covid-19.

independent hotels to manage their resources in order to cope with sudden changes in the external environment is highlighted.

In the light of the implications highlighted, there are not many paths that can be taken in the short term to try to contain the catastrophic effects of the reduction (if not zeroing out) of cash flow. In many cases, central governments have had to intervene with policies to support the hardest-hit categories, including subsidized or non-repayable loans, freezing of mortgage maturities and deferment of rent payment terms. For example, in Italy, the Government has stepped in since the beginning of 2020 with measures to support the businesses and workforce most affected by forced closures[125]. With the Decree Law "Cura Italia" (converted into law on April 24, 2020), the Government introduced the Cassa Integrazione (Wages Guarantee Fund) and the moratorium on mortgages and loans, in an attempt to lighten the costs of companies and avoid waves of layoffs. Subsequently, the Decree Law "Liquidità" (converted into law on June 5, 2020) sought to increase the liquidity available to businesses through the creation of loans partly guaranteed by the Italian State. With the Decree Law "Rilancio" (converted into law on July 17, 2020), liquidity measures were strengthened through the provision of non-repayable grants and by boosting the Cassa Integrazione. Finally, with the Decree Law "Agosto" (converted with Law October 13, 2020) and the Decree Law "Ristori" (converted with Law December 18, 2020) a series of tax policies were implemented, such as the cancellation of the 2019 IRAP balance and the 2020 down payment for certain categories of self-employed businesses, the strengthening of non-repayable grants, the disbursement of tax credits for workplace upgrades, the introduction of a 60% tax credit for rentals of property for non-housing use (for hotels it is independent of the turnover of the year before), exemption from payment of IMU for the year 2020.

However, even with the measures introduced, a wave of closures and bankruptcies cannot be averted. Once again, it is worth asking whether the tokenization process can bring benefits in this scenario as well.

[125] Sostegno alle imprese e all'economia. (2020, September 29). MEF. https://www.mef.gov.it/covid-19/Sostegno-alle-imprese-e-alleconomia/.

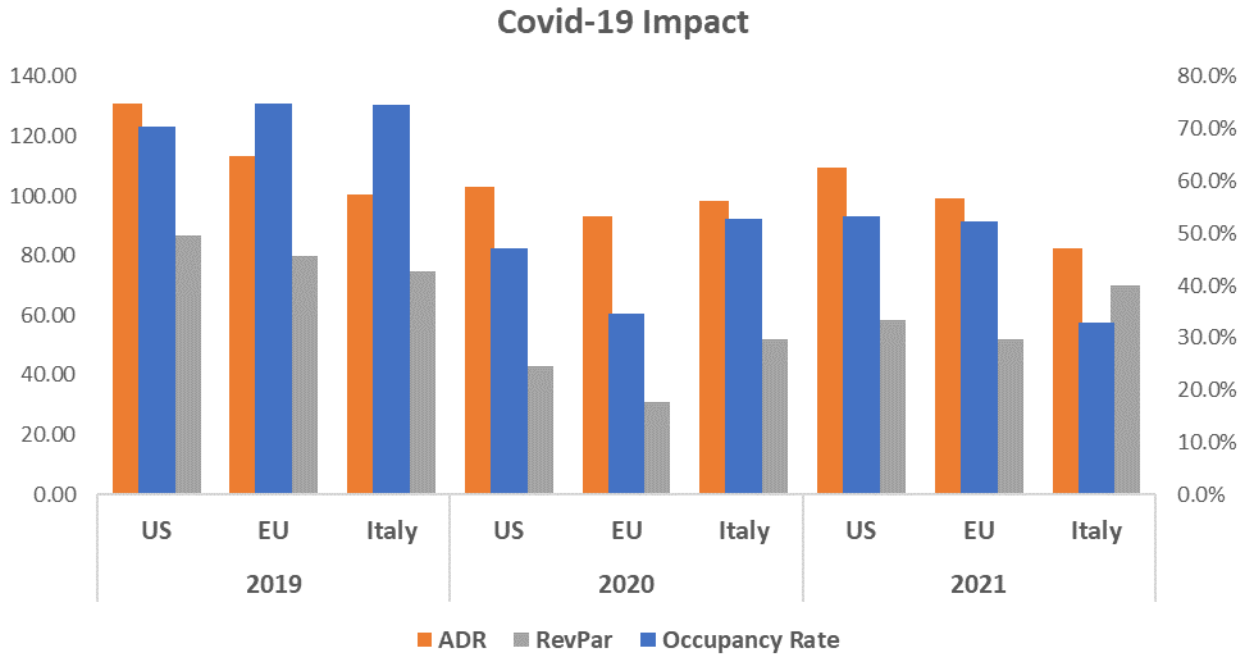

Figure 14 - Covid-19 Impact on Hotel KPIs - Source: Personal elaboration based on data from STR.com and Summer 2021: The European hotel industry on a path to recovery. (2021, September 6). Hospitality ON. https://hospitality-on.com/en/hotel-trends/summe

4.2. Distressed Situations

Firstly, before delving into the scenario of applying tokenization to distressed companies, it is appropriate to define the basic terminology. The process of insolvency of a business usually begins with a prolonged financial failure. When insolvency becomes systemic (with non-payment for an extended period depending on the jurisdiction), the debtor may seek an agreement with the creditor to suspend terms or restructure the debt. Since the debtor's bankruptcy filing is a lengthy and costly process for both parties, in the case of a commercial property, the creditor also has an interest in finding an agreement. The granting of a deferment or suspension of payments is called forbearance. When an agreement is not reached and the debtor remains insolvent, the debtor enters a state of default, and the creditor can file for bankruptcy - or "foreclosure". Depending on the legal system, there are different technical means to pursue a bankruptcy case (i.e., Real Estate Owned sale, short sale, auction sale and Foreclosure sale[126]), however, what is interesting here are the effects on property values. The literature on this subject has shown a discount range between 7% and 24% in the case of

[126] Real Estate Owned (REO) sale happens when the debtor is insolvent, and the lender repossesses the asset but does not sell it at auction.
Short sale refers to the sale of the property for less than the amount owed to the lender. Sometimes It could be the best way to avoid the costly process of the bankruptcy.
In a foreclosure sale the lender seizes the asset and evict the borrower who does not abide with obligations. The asset will be later sold at auction. Note that this process is not ideal for both parties since the foreclosure will be registered on the credit rating and the lender will incur in costs associated with the process, without recouping all that is due.

residential properties[127], while for commercial properties of hotels, the discount following distress increases up to 44%. The reasons for this greater loss of value probably lie in the greater risk perceived by the market, due to those characteristics of the hotel business that have been highlighted several times (high fixed costs, high indebtedness and high sensitivity of revenues). Specifically, the discount on the estimated value is between 30% and 44%, depending on the method of sale chosen: 30% for the short sale, 33% for the auction sale, 42% for the foreclosure sale and 44% for the REO[128]. It is clear, then, that in the bankruptcy process a significant portion of the property value is "lost"; in the current post-pandemic scenario, many hotels will seek to recover liquidity - and bring cash flows back into the positive - by selling the property or through *sale and leaseback* transactions.

Again, tokenization could represent a solution to this problem.

4.2.1. Distressed Tokenization

The need of distressed hotels to quickly obtain liquidity to invest, without embarking on the long process that leads to the sale of the property, could indicate new opportunities for the application of tokenization. However, it must be borne in mind that distressed investments present greater critical issues than the investments seen so far, as they are associated with additional risks. In this context, if there are already practical developments (it is anticipated that there are already projects in this direction), the careful vigilance of regulators is more necessary than ever in order to avoid an excessive assumption of uncalculated risks by investors. The principle of democratization of real estate investments is, in our opinion not compatible with excessive specialization of investments- at least in the early stages of development of this new market -; in other words, the proposal to invest in business projects whose greater complexity implies additional risks is not suited to the increase in the number of investors who, due to a lesser knowledge of the specific market, could agree to participate, underestimating or, in the worst case scenario, not considering at all the risk they take on. In such a scenario, regulators would be forced to intervene to mitigate the assumption of unexpected risks, slowing down the process of market development.

In 2019, a Brazilian company, ReitBZ, decided to apply tokenization to the Brazilian distressed real estate market. The specific business model involves identifying distressed properties, buying them at a lower value with subsequent redevelopment, and finally selling them.

[127] Clauretie, T. M., & Daneshvary, N. (2009). The Optimal Choice for Lenders Facing Defaults: Short Sale, Foreclose, or REO. Springer Science.
[128] Singh, A. (2020). Estimating the Foreclosure Discount in Financially Distressed Hotels. Cornell Hospitality Quarterly.

ReitBZ

To better understand the advantages and limitations of this model, we start, as usual, with an analysis of the Whitepaper[129] published by the company. In 2018, the company published the paper announcing its intention to raise funds through a two-month Security Token Offering (April and May 2019), with a minimum of $3M and a maximum of $15M. At the close of the collection, ReitBZ managed to reach the amount of $3.3mio[130]; the reasons why this STO was not a great success will be explored later. The company was founded in the Cayman Islands by the Brazilian bank BTG Pactual, which has already been active for several years in the Brazilian real estate market through its subsidiary Enforce. The offer of tokens was directed to all investors not resident in the US and Brazil, and in general in all those countries where the purchase and exchange of cryptocurrencies is not prohibited. The reasons why ReitBZ had to impose limitations are related to the current legislation: the classification of securities in the US is done through the Howey Test[131], which has a broader definition of financial instruments than in other countries. So, the reasons why the company was incorporated in the Cayman Islands were purely regulatory in nature - to avoid its token being classified as a security, and therefore to avoid jurisdictions with a broader classification of securities. Details immediately emerge that contrast with the transparency and greater level of detail that a document that, it should be remembered, is not approved by any regulatory body should have.

Following the conclusion of the collection[132], the funds received were allocated to the purchase and redevelopment of the identified properties. After the sale, only part of the profits was distributed to investors through dividends, or "airdrop of profits" as ReitBZ calls the dividend distribution.

Although the information regarding the business model seems solid, the market has not enthusiastically welcomed the STO, with the amount funded barely exceeding the minimum threshold. It is believed that the main reasons are related to the corporate structure and the regulatory issue. First of all, tokenholders do not hold any decision-making power, but have only patrimonial rights: they are entitled to periodic payment of sums of money in the form of Ether (ETH) or stable coin[133]. The payment of dividends is linked to the sale of the properties or the realization of a rent from the rental of the assets through a Hotel Management Agreement - although it is made clear that this will be a rarer eventuality, as renting is an activity that is not part of the company's core business.

[129] Reitbz. (2018). White Paper.
[130] Fries, T. (2021, June 9). BTG Pactual Raises $3.3 Million from Retail Investors with Real-Estate Backed STO 'REITBZ.' The Tokenist. https://tokenist.com/btg-pactual-raises-3-3-million-from-retail-investors-with-real-estate-backed-sto-reitbz/
[131] For further information please refer to *paragraph 1.4.1 US Regulation.*
[132] Please note that the collection still meets AML and KYC processes.
[133] Stablecoins are digital tokens whose goal is to minimize the effects of price volatility by tying their value to an external asset.

The decision on profit distribution is up to the company's management, so tokenholders have no guarantee on the timing of distribution. Although making forecasts on the realization of profits would be complex, given the specific business model, it is nevertheless true that the desire not to provide for automatic distribution after the sale does not have a positive impact on the valuation of the project. In addition, the company's declaration of distribution of profits is in no way binding and can be revoked until actual payment is made.

The process of acquiring, redeveloping and selling the property has an expected duration of 18 months. Acquisition generally occurs at a discount ranging from 30% to 60% depending on ownership and condition; redevelopment - which includes restoration, regularization of legal status, and possibly eviction of illegal occupants - has an expected cost of approximately 10/20% of the property's value.

The project involves the creation of a liquid secondary market through the active participation of BTG Pactual which, especially in the initial stages in which the market is still being developed, should act as a market maker by purchasing the tokens of investors who intend to sell them. However, no information has been published regarding the methods and valuations of the tokens.

From the perspective of potential risks, the Whitepaper appears fairly comprehensive by identifying five categories of risks: macroeconomic risks, Real Estate market risks, regulatory risks, token-related risks, and business-specific risks.

- Macroeconomic risks - arise from the policies of the Brazilian government and current and future economic conditions.
- Real Estate risks - these are linked to the performance of the real estate market and, specifically, to investments in distressed properties.
- Regulatory risks - ReitBZ is subject to both Brazilian real estate and Cayman Islands cryptocurrency and cryptoasset regulations.
- Token-related risks - the risks highlighted by the Whitepaper refer, for the most part, to the immaturity of blockchain and smart contract development. The risk of illiquidity of the tokens is, however, highlighted, if a secondary market does not develop. In addition, the issuer reserves the right to eliminate the tokens at its own discretion, against an indemnity established on the basis of the market price. Finally, there are risks arising from the volatility of ETH (if chosen as a form of dividend payment), the loss of private keys and the inexperience of investors in the use of this type of technology.
- Business-specific risks - specific risks include the total absence of any kind of control, on the part of investors, over the company and its management. In addition, no disclosure of information regarding investments is guaranteed.

From the analysis carried out so far, the critical aspects of the project are evident. In particular, the Whitepaper stresses several times that there is no assurance on the completeness and truthfulness of the information, however, what is most perplexing is the total absence of control tools on the part of investors who are totally excluded from the management without having any guarantee on the timing of distribution of dividends. Probably, these gaps were at the root of the low interest raised, despite the fact that the premises of the project were anything but unsuccessful. The brief excursus on this business model served to clarify one concept: if, on the one hand, investor appetite for the new frontier of fractionalization is high (as seen with the St. Regis of Aspen), on the other hand, this interest must be captured through instruments that have a legal form oriented towards investor protection. Once again, there is a need for standardized and regulated instruments (whitepapers *in primis*).

4.3. Costs Of Going Public

Throughout this chapter, we have focused on tokenization as a good solution to the problems faced by small and medium-sized hotels, taking for granted that the absence of alternatives imposed the search for a new instrument. On closer inspection, the strategy of liquidation of real estate assets pursued by large hotel chains through REIT spin-offs[134] has already been presented in chapter two, so it would be possible to extend the initial question of the chapter by asking why small hotels cannot use the same methods to liquidate properties. As pointed out in that chapter, the process of spin-off of real estate assets and the subsequent listing of the fund require time and resources that make this operation economically viable only for large assets - there are examples of single asset REITs, but they hold properties with a much higher value (around € 30 million) than those managed by small hotels. In any case, it is worth analyzing in detail the reasons that make this instrument unusable, which, on paper, could be a valid solution to the liquidity problems that afflict even small hotels. Apart from the obvious limitations linked to the listing process (referring above all to information obligations and the loss of maximum autonomy), the main problem remains linked to costs.

To better analyze the reasons why a REIT is not the right solution to the problems encountered, it is useful to understand the procedures for its formation. First of all, given the size of the properties to be spun off, the REIT model to be considered is definitely the closed one; an open REIT would have the considerable advantage of raising capital from a wider range of investors, but would incur the limitations already noted (i.e. discount to nav, price volatility, high costs), and, moreover, is an instrument suitable only for real estate assets of considerable size (tens of millions of

[134] For more information, please refer to *Paragraph 2.5 REIT Spin-Offs.*

euros). After choosing the type of REIT, it is necessary to create the vehicle company that will hold the real estate assets that have been spun off. When the fund is set up, various formalities are required, including: appraisals of the value of the contributions, formal authorizations from the supervisory bodies, formation of an asset management structure, publication of reports on periodic management performance and risks, etc. Once the incorporation phase is complete, the phase of seeking financing from investors begins. In the event that the company operates in a legal system that allows the creation of REITs, it is necessary to comply with the requirements for obtaining and maintaining the status of REIT[135] (including distributing at least 90% of taxable income, holding at least 75% of the assets in real estate, having at least 100 different investors, etc.). The cost of the process of setting up a company to manage real estate assets (whether it is a REIT or an unlisted asset management company) is variable and linked to the costs of the professionals (legal and business advisors) who deal with the setting up and the necessary formalities, but, in any case, it is so high (we are talking about hundreds of thousands of euros) as to make it economically unjustifiable for low value properties.

Costs of Tokenization

So, due to costs, small and medium hotels cannot pursue the establishment of a REIT to address their problems. Just starting from this conclusion, it has been tried to assume a new solution based on the fractionalization of shares through blockchain. What makes this solution more feasible is not only all the features that have been outlined so far, but also, and most importantly, the economics. According to Solomon Tesfaye, Vice President of Business Development and Capital Markets at tZERO, the cost of tokenizing a real estate structure[136] worth more than $10 million varies between $75,000 and $150,000 depending on the complexity of the due diligence and engineering of the security token, with a maintenance cost (related to secondary trading) of $50,000 for the first year and $20,000 for the following years. The pricing structure is being revised for projects under $5 million, but no details are available.

In light of these findings, it is fair to ask what would be the best way to apply tokenization to the real estate assets of small and medium-sized independent hotels. We will try to provide an answer through the example of the most successful cases of tokenization in the Real Estate sector.

4.4. Best Practices

The biggest limitation for the mass adoption of tokenization lies, at the moment, in the lack of guidelines dictated by the regulators and the scarce standardization of procedures related to STOs; it

[135] For a more in-depth discussion of REIT requirements, see *Paragraph 2.5 REIT Spin-Offs.*
[136] It should be remembered that, in practice, it is not the property that is tokenized, but the vehicle company that owns it.

is considered, therefore, appropriate to outline the best practices of the industry on the subject, extrapolated from the platforms that are driving the success of tokenization and public offering of tokens.

As we have already pointed out, at the moment, most of the operations pertaining to the tokenization process are taken care of - in a more or less complete way - by the platform that issues the token (such as tZERO in the case of ASPD). Therefore, as time passes, the initiatives of the platforms have defined a roadmap of the process, which foresees strong cooperation between the client and the platform itself.

The first step involves a project screening phase to assess the feasibility of the operation. Generally, this phase consists of a legal and business due diligence conducted directly by the management platform or indirectly through external advisors. In a historical phase where the eyes of regulators are on the DeFi[137] and STO market, the due diligence process becomes extremely delicate. In any case, at the stage of analyzing the assets to be tokenized and the timing of the project, it is necessary to frame the token within one of the main categories[138], especially from a legal point of view. In the first chapter, in fact, we saw how the classification of tokens has a mainly regulatory value, with regulators struggling to classify tokens in a clear-cut way, and most of the time trying to focus on the purpose of holding the token, thus following a *technology-agnostic* approach. The different recommendations at national level generate, therefore, a cluttered environment in which the various advisors/issuing platforms have to frame the tokens according to the regulations of the country of reference - meaning both the country of issue and the country of residence of the investors. Therefore, having completed the first phase in which, in the specific case addressed in this dissertation, the token is identified as a security token, the phase in which the legal status of the digitized asset is defined opens up.

In the second phase, therefore, after having identified the reference jurisdiction, it is required to set up the Special Purpose Vehicle (SPV), the company that will be tokenized . This intermediate step is necessary because in the main areas (USA, EU, Asia) it is not possible to tokenize an asset directly, but it is done by digitizing the company holding the asset. Subsequently, the process is carried out according to the regulation in which the offer falls (based on the amount offered and the investors to whom it is directed), according to the rules seen in the first chapter. The legal advisory

[137] Decentralized Finance (DeFi) is a system that disintermediates traditional, centralized financial models by making financial products available on a decentralized public blockchain network. Specifically, it refers to software, based on blockchain, that allows buyers and sellers to interact peer-to-peer without the presence of a middleman.
[138] Please note from *paragraph 1.3 Blockchain and Tokenization* that tokens are generally classified into: Security Token (under the Howey Test), Utility Token, and Payment Token. The category of Hybrid Token is usually added to these.

also involves defining the KYC process and the periodic reports that the newly formed company must share with investors.

Next, the platform identifies the blockchain on which tokens will be created, issued and exchanged, and goes on to define the technical architecture of the token. The creation of the token is the phase in which the asset is digitized and then fractionated. At this moment, the company in charge of digitization must acknowledge the client's requests in order to specify the rights and obligations that will be incorporated into the smart contract and the requirements for accessing the public offering. A fundamental aspect is linked to the logic that regulates the exchange of tokens and the methods of their custody and transfer: once the token is issued, the platform should take care of KYC process and every trade of the token need to be recorded. Moreover, since a token is a digital representation embedded in a blockchain, the platform should work together with the custodial firm to provide the sufficient safety measures to store the cryptographic keys.

At the same time as the physical creation of the tokens, the Whitepaper, the document which contains all the relevant information on the business model, the outlook, the corporate structure and the rights and obligations of investors, is completed and published.

4.4.1. Whitepaper Structure

Even on the drafting of the whitepaper there are no official requirements but, given the failed experience of ICOs, it is believed that simplification and accuracy of details increase the confidence of investors in the project. In this regard, the official document should contain at least the following categories: legal notes, industry overview, project description, business model, management presentation, technical architecture and token management mode.

1. As can be imagined, the section on legal notices represents a crucial point in the entire document, since it identifies the most relevant rights, obligations, risks and aspects of investor protection.
2. The industry overview section should ideally contain information on market analysis and trends, broadly identifying the market into which the proposed solution fits.
3. Subsequently, the focus shifts to the analysis of the project, with particular emphasis on the ways in which the investor participates in the project, the use of funds and the roadmap with the various deadlines (deadline for raising capital, issue of tokens and start of exchanges).
4. The section on the business model defines the activity on which the token is based and allows investors to understand how the project creates and distributes value to funders; this section contains the major risks related to the business.

5. The fifth section is dedicated to the presentation of the team leading the operations and the external advisors involved in the operation (platform for issuing, exchanging, and storing the tokens). In our opinion, as STOs open up to an ever-widening range of investors and as the platforms that manage the tokenization process become more important, the companies involved and the platforms that handle the process will play a more important role than the mere description of the technical architecture, which, on the other hand, will lose its key role over time, as blockchain based projects become more established. This will happen when the market becomes familiar with the new technology and is no longer concerned with verifying compliance with specific requirements by the players involved, but will rely on the guarantee of intermediaries. The process will follow the same steps as the adoption cycle of technological innovations, when one moves from the early adopters to the early majority (the target market shifts its attention from technical to purely commercial aspects).
6. Regarding the last section, despite what was said earlier, currently, the architecture of tokens and the information exchange model is still a crucial point which is worth exploring in the whitepaper. The last section outlines the rights and obligations on tokenholders, limitations, how dividends are distributed, and custody of tokens. This section needs to be sufficiently clear because, in the absence of a general framework dictated by regulators, it represents a critical point of the entire project.

Finally, once the legal structure and digital environment of the transaction are prepared, the tokens are issued and exchanged on the secondary exchange platforms, based on the rules defined previously.

As we have pointed out many times, much of the success that this new marketplace will have will depend on the ability of the platforms to perform these functions well, with a focus on the custody and exchange of the tokens.

The entire chapter was built on the search for an answer to the question of whether tokenization can actually solve the age-old liquidity problems that afflict the Italian hotel sector, especially in the category of independent hotels. Having reached the conclusion of the chapter, the answer would seem to be in the affirmative: the increase in the number of investors and the simplification of the processes of participation in real estate investments represent a new opportunity for the hotel sector in a pre-crisis scenario. Obviously, the opportunity and the specific evaluation of the type of investment are beyond the scope of this paper; the sole purpose here is to consider tokenization as a new tool capable of making the mechanism of resource allocation in the lodging industry more efficient. In the next chapter, this idea will be analyzed further with the presentation of an own business model based on

the application of the tokenization on the real estate lodging industry, specifically to understand if this model can empirically address some of the problems related to illiquidity of this market.

5. Business Model Application Proposal

At this point, the scope of the opportunities offered by tokenization applied to the real estate market is probably clear. The purpose of this paper goes beyond the simple definition of the characteristics and processes involved in tokenization, and in this chapter, we will develop a possible practical application of this business model.

Inspired by existing applications (see the case of the St. Regis in Aspen), we have hypothesized a business model linked to the hotel sector, in which, however, the tokenized company is the one that owns the property and not, as in the case of the St. Regis, the one that manages the hotel.[139]

5.1. Organization

The proposed operating model provides for the setting up of a vehicle company (Alpha company the SPV which is then tokenized) which owns and manages the property and of a company (Beta company) which carries out the hotel business in the chosen property (the two companies have the same ownership). As can be seen, the management of the two companies is centralized, therefore, the property is chosen based on the potential it expresses from the point of view of the hotel business, which is the one that allows the creation of value to be distributed to the tokenholders. We have already pointed out that this is probably the biggest difference with the business models analyzed so far: the fractionalization of the real estate company makes it possible to reduce the variability of results (and therefore the risk perceived by investors) in order to maintain greater predictability and stability of cash flows. This organization has further advantages, including the possibility of maintaining control over the asset without having to purchase it (the advantages of this opportunity will be discussed below), and the consequent possibility of allocating resources to the core business.

5.2. Model Analysis

The analysis that will be presented at this point has been carried out using the software "Microsoft Excel" and represents a personal elaboration on the basis of some input data (especially for the analysis of the model of the Hotel) provided by a company that operates in the real estate sector and in particular in the hotel sector; however, for reasons of confidentiality, some data will be

[139] The reasons for this choice lie mainly in the desire to give the greatest possible stability to the cash flows generated and then distributed to the owners of the tokens; given the innovation underlying this new instrument, it was deemed appropriate to link the investment through tokens to a project that presented fewer risks than the hotel business. As we have seen, in fact, hotels provide an excellent hedge against inflation, since the revenue metrics (ADR) can be adjusted on an almost daily basis, however, they have a high correlation with the economic cycle; therefore, they are among the first businesses to suffer from an economic slowdown. In contrast, the company holding the property is guaranteed a more stable income from the hotel company's rent payments.

properly modified, therefore, the project will represent a realistic but not real case. The Excel model has been divided into two macro-categories: Real Estate Analysis and Hotel Analysis. In the first part is presented the analysis of the model of acquisition of the property, with consequent analysis of the investment from the point of view of the tokenholders (it is recalled that the tokenized company is the one that acquires the property); in the second part instead, are presented the data on the operations of the Hotel. The choice to integrate the model with the analysis on the Hotel answers to the necessity of defining, as completely as possible, the entire operation of the hypothesized business model. We have considered, in fact, that introducing only the evaluation of the real estate side of the operation, made the analysis in some way limited, since even the operations side Hotel fall within the project. The evaluation model of both projects is composed of two main parts: an input sheet, in which the assumptions of the model are inserted, and an output sheet in which the results of the analysis are highlighted.

5.2.1. General Assumptions

In terms of general assumptions, we have carried out the analysis over a 10-year time horizon, with an assumption of sale at the end of the last year for both the property and the hotel business. This assumption is justified not only by the need to make the analysis of both projects as uniform as possible, but also by the logic with which the project was developed: the two realities (real estate and hotel) are part of the same business model, therefore, we considered it reasonable to provide for a simultaneous sale of both assets, aware of the fact that it would still represent an approximation.

Similarly, the simultaneous purchase hypothesis is also affected by the same underlying assumption, however, we do not believe it can influence the validity of the results of the analysis.

General premises of the analysis

In the construction of the reclassified income statement for the purpose of measuring cash flows, the NOI was considered as a measure identical to EBITDA. This approximation has no particular consequences from a practical point of view, although it should be pointed out that, from a theoretical point of view, NOI and EBITDA express slightly different quantities. In the Real Estate industry, NOI indicates net operating income (measured as Operating Revenues minus Operating Costs), while EBITDA is a measure that is used to evaluate and compare a company's ability to generate results, without considering accounting policies, financial structure and taxation.

Asset

The property is located in Rome, on a street in the historical center. It is registered in category D/2 "Properties for hotel use". Even if the conditions are good, the hotel activity planned requires

important renovation works that are borne by the tenant and that will be analyzed later in the "Hotel" section of the document.

Evaluation Methods

Before delving into the model, we considered appropriate to focus on the valuation methods used. Consistent with established practice in Real Estate, the methods taken into consideration are: Comparable Approach and Income Approach. The first is aimed at estimating a market value through direct comparison with comparable transactions. It is precisely in this context that the value of the experience acquired by the company is enhanced. By specializing in a particular sector and in a given geographical context, the company has more information available for future analysis (market values and capitalization rate). The second method, on the other hand, is based on valuation from the expected performance of the asset. The income method estimates the current value starting from the Net Operating Income of the first year (dividing the NOI_1 by the chosen capitalization rate) or through the discounting of future cash flows (method commonly known as Discounted Cash Flow - DCF). The main differences between analysis through NOI or cash flows lie in the degree of detail of the model and the metrics used, but both should arrive at a similar result. The estimate with the NOI uses a time horizon of 1 year, therefore, needs an adjustment to make sure that the metric used corresponds to a "stabilized" result: for example, the model should take into account renovation expenses that will be incurred in an indefinite period in the future. In contrast, the DCF, given the greater level of detail, allows for the precise identification of the year in which these expenses occur (although it may not correspond to the effective period in which they will be incurred). Moreover, where the former method stops at Net Operating Income, a measure that is not affected by either financial structure or accounting choices, the cash flow method considers all of these characteristics and estimates levered and unlevered cash value. Obviously, depending on the route taken, the rate used for the valuation will be different. Since the capitalization rate is often estimated from comparable transactions, it is necessary to make sure that the metrics used in other transactions are consistent with the use to be made of the rate. In other words, because there is no single accounting definition of Net Operating Income, the risk you run is using a rate that is inconsistent with the starting accounting measure.

Even if in the academic field there is a clear differentiation between the various methodologies, in the practice this distinction disappears and often the evaluation of a real estate investment is carried out using tools of one and the other. As Morri and Benedetto (Commercial Property Valuation, 2019)[140] point out, the valuation method that is considered most suitable is a synthesis of various

[140] Morri, G., & Benedetto, P. (2019). Commercial Property Valuation: Methods and Case Studies (Wiley Finance) (1st ed.). Wiley.

models - it is, in fact, called the "*Income Capitalisation Comparison Approach*". Starting from forecast economic data, future cash flows are built and then discounted at the required rate of return. The terminal value of the property is estimated from the NOI (or Free Cash Flow) of the year following the last, using Gordon's formula adjusted for 0 growth (Terminal Value = NOI_{t+1}/r). The hypothesis underlying the adjustment would lie in the need to stabilize cash flows beyond the time horizon; this need is fundamental in the valuation of real estate properties since the income generated linked to the terms of the lease contracts generally have a very long duration (not less than 9 years with the option to renew, term *ex lege*). In each case, the evaluation of both projects will be presented in detail below.

Risk Free Rate

The risk-free rate used is the 10-year yield on the German Bund which, at the time the model is developed, is approximately -0.30%.

5.3. Real Estate Project

As said, the project of acquisition of the property provides for the purchase and management of the asset on a time horizon of 10 years. The useful life of the asset is obviously much longer but, in this case, it has been decided to privilege the simplicity of the model and to adopt a reduced time frame, also in order to evidence the returns of the tokenholder in the year of the sale of the property.

5.3.1. Real Estate Assumptions

Revenues Assumptions

As regards the revenue items, only the income generated by the payment of rent by the Hotel (Alfa company) is highlighted. The monthly rent assumed is €70,000 per month[141], for an annual total of €840,000; however, since in the first year Alfa Company needs to sustain building costs, the first year rent is halved.

Costs Assumptions

The cost items noted for managing a property, in this case, consist of tokenization costs, property taxes, and property management and insurance costs. Specifically:

- Tokenization costs were estimated directly from data provided by tZERO[142]. Specifically, the company has indicated the costs that they currently apply in the case of tokenization of a

[141] Data provided by the company on which the model is based.
[142] Tesfaye, S., & Harttraft, T. (2021, June 24). The Tokenization of Real Estate Investing. MarketSpace Capital. https://marketspace.capital/the-tokenization-of-real-estate-investing/

property with a value of approximately $10 million, specifying that lower values correspond to lower costs. Currently, not having precise information on this, the costs indicated have been used, well aware that they represent an upper limit. The incurred upfront cost is $100,000 (€84,952), with a cost to maintain the property on the platform of $50,000 (€42,476) for the first year and $20,000 (€16,990) for the following [143].

- The IMU[144] corresponds to the rate of the Municipality of Rome for the municipal income revalued at 5% for the coefficient relating to buildings in category D/2 for hotel use.

$$IMU = 1.06\% \times 90{,}000 \times 1.05 \times 65 = € 65{,}111$$

- Operating costs (Insurance and Maintenance) were calculated as a fixed percentage (6%)[145] of the value of revenues.
- The expected marginal tax rate is 33%.

Purchase Assumptions

In addition to the operating cost items, particular attention should be paid to the hypothesis regarding the purchase price of the property. The estimate was carried out using the Income Approach: starting from the data provided by the company, it was possible to estimate a capitalization rate to be used to identify a price range that was consistent with the market trend. According to the Income Approach, the purchase price of an asset is calculated by dividing the Net Operating Income of the first year by the chosen capitalization rate; obviously, the more data the company has on transactions of comparable properties, the more accurate the information generated on the purchase price. However, the estimated value must always be verified, and experience and market knowledge play a key role in this. In this specific case, the estimated price is approximately € 8 million, which translates into a rate of 8.84%, but it is extrapolated from the NOI_2, since in year 1 rent is halved.

The annual depreciation has been calculated on a time horizon of 20 years and is estimated at around € 400,000.

Financing Assumptions

The financial structure chosen for this type of operation is 70% debt and 30% equity[146]. The amount of debt is € 5,659,467, which represents 70% of the initial investment of € 8,084,952. The amortization of the loan has been calculated over 30 years, providing for two options: constant

[143] Costs have been converted into euros using the conversion rate *EUR/USD = 1.17713* of XE.
[144] Comune di Roma. (2020). Estratto del verbale dell'Assemblea Capitolina. https://www.comune.roma.it/web-resources/cms/documents/Delibera112_2020_Aliquote_Imu_2020.pdf
[145] Data consistent with industry.
Morri, G., & Benedetto, P. (2019). Commercial Property Valuation: Methods and Case Studies (Wiley Finance) (1st ed.). Wiley.
[146] Data provided by the company on which the model is based.

payments and payment of interest only, with repayment of the principal at maturity. The double option has been included within the "Real Estate Debt Schedule" tab; in the scenario of constant payments, the amount paid each year is €307,000, while the interest-only payment amounts to €198,081. The model has been constructed using the function "=CHOOSE".

Exit Assumptions

The sale value of the property was calculated as the Terminal Value, using Gordon's formula adjusted for growth at 0. The Terminal Value is the result of two valuations, one starting from the cap rate and one starting from the WACC. The first value calculated, € 10,194,602, was obtained by dividing the NOI of the year following the sale (NOI_{11}) by the going-out cap rate at 7% and deducting the share due to the intermediary (1.5%). The valuation of the sale price is consistent with the revaluation of the property as a result of the renovation work and the fact that after 10 years, the property still has a lease in place. The second option provides for the valuation starting from the unlevered cash flow of year 11, discounted by the WACC rate. This methodology generates a value of € 13,740,258, which would seem to be out of line with the market trend. Probably, this result is considered as an upper limit, but in any case, the DCF is not suitable for application in real estate; for this reason, we have used as sale value, the value calculated with the going-out cap rate.

5.3.2. Real Estate Analysis

Wacc Calculation

The WACC was calculated on the basis of its components: equity cost of capital and debt cost of capital. The formula used is the following:

$$WACC = Re\frac{E}{V} + Rd\frac{D}{V}(1 - Tax\ rate)$$

The WACC rate calculated in this way is equivalent to 4.43%, corresponding to the lower limit of the range between 4.3% and 5.5% of the industry

Equity Cost of Capital

The cost of capital was obtained through the CAPM model[147]. The starting unlevered beta (0.6) is an estimate extrapolated from multiple sources[148]. Subsequently, the beta was adjusted for specific risk based on the financial structure (70% debt and 30% equity). The market outperformance is the

[147] The Capital Asset Pricing Model (CAPM) estimates the cost of capital on the basis of the spread (with respect to the risk-free rate) of the market in which the project operates, adjusted for the specific risk of the project, considered as the sensitivity of the project with respect to market excess returns (measured by the β).

[148] Business data, industry reports and data made available by A. Damodaran:
Savidio & Partners. (2018). Industry Betas; Damodaran, A. (2021a). Cost of Capital by Sector (US). Damodaran Online. https://people.stern.nyu.edu/adamodar/New_Home_Page/datafile/wacc.html

result of the analysis of Prof. A. Damodaran[149], adjusted for the Italian country risk. The calculated cost of equity is 9.28%, a rate of return in line with this type of operation (the company indicates a cost of capital between 8.5% and 9.5%).

Debt Cost of Capital

The cost of debt was provided by the company that operates in the real estate sector and is equal to 2.01%.

Real Estate Debt Schedule

As regards the loan repayment schedule, there is nothing particular to add to what has already been said:

- The amortization period is 30 years;
- The interest rate, calculated from the spread defined by Prof. A. Damodaran based on the EBITDA Coverage Ratio, is 3.5%;
- The model provides two debt amortization scenarios: constant payments (calculated using the formula for principal =PPMT) and interest-only payments with principal repayment at maturity;
- The initial debt is €5,659,467 and represents 30% of the initial investment of € 8,084,952.

Real Estate Summary

Within the "Real Estate Summary" tab, forecast cash flows up to year 11 have been constructed (note that the exit takes place in year 10). For an in-depth analysis of the individual items over the entire time frame, see the Appendix. Several significant results are highlighted here:

- The NOI margin (NOI/Revenues) stands at around 80% for the entire duration of the project, whilst the EBIT margin falls to around 35%, indicating that depreciation has a particularly high incidence, as mentioned above.
- The net profit of the first year is negative, however, we have already pointed out that in the real estate sector, accounting quantities are not particularly relevant because they do not correctly represent the economic state of the property. Consequently, although we have included them for completeness, they are not used in the project evaluation.

[149] Damodaran, A. (2021a). Cost of Capital by Sector (US). Damodaran Online. https://people.stern.nyu.edu/adamodar/New_Home_Page/datafile/wacc.html

Return Analysis

The next section is dedicated to the analysis of returns, measured according to different methodologies. First, starting with the NOI, cash flows were constructed by subtracting the initial investment and adding the net realization on sale. The cash flow calculated in this way precisely identifies the property's ability to generate cash, not considering interest charges or taxation. The sales value considered is the one obtained by dividing the NOI of the year following the sale by the going-out cap rate. The Net Present Value of the project based on the NOI is €4 million and was obtained using the calculated wacc.

Next, Free Cash Flow was calculated to assess the profitability of the transaction at the corporate level. The Free Cash Flow was obtained starting from the NOPAT ($EBIT \times (1 - Tax\ Rate)$), subtracting Capex and adding depreciation and net proceeds from sale. The quantity calculated measures the free cash flow for the remuneration of the company's investors (equityholder and debtholder), which is why it is called "Unlevered Free Cash Flow". The Internal Rate of Return (IRR) is 9.17% and also in this case the Net Present Value is positive (approximately € 3 million). The payback period indicates that the project reaches its break even only in the last year, at the time of the sale. Excluding the hypothesis of exit at the tenth year, the model indicates that parity is reached at about the thirteenth year. The motivation lies primarily in the long-time horizon of the investment, which generates a yield (measured as $FCF_t/Capex$) of about 10% per year. In order to further define the cash flow analysis, we also highlighted the decomposition of flows between cash flows from operating activities and cash flows from sales. The model shows that 42% of the present value created comes from operations, while 52% comes from sales.

Finally, the focus shifts to the value generated for equity holders, including tokenholders. The "Levered Cash Flow" was calculated starting from the net result, then adding the depreciation, the net sales proceeds and subtracting the residual debt still to be paid at the year of the sale and the initial equity contribution (equal to 30% of the initial investment). From the calculated data it is clear that the effect of leverage acts positively on investors' returns, with an IRR of 21.9% and an NPV of around € 2.6 million. The Payback Period in this case takes place between the fifth and sixth year. The comparison between the IRR and the calculated cost of equity expresses the profitability margin of the project before it becomes negative: the difference between the IRR (21.9%) and the rate of return on equity (9.28%) indicates that the cost of equity would have to more than double to make the investment unsustainable.

Real Estate Tokenholder Analysis

The central point of the paper is undoubtedly the cash flow analysis of the tokenholders. First of all, in order to make the investment simulation as realistic as possible, we assumed a dividend tax rate of 26%. From the levered cash flows, personal taxes on financial investments were deducted. The calculated IRR on Cash Flows to Tokenholder is 16.17%. In this context, it is the annual yield rather than the IRR that is noteworthy, since it is a measure that identifies the annual return on investment despite not considering the time value of money. Assuming a price per token of €1, the simulation was calibrated to an initial investment of €500. The cash-on-cash return ($Annual\ CF\ to\ Tokenholders/Investment$) varies from 11.93% in the first year to 13.51% in the last year without considering the exit. On a pragmatic standpoint, an investment of €500 yields approximately €64 per year, with €934 in the last year coming from the sale of the property. The Money Multiple[150] indicates that the multiple of the total inflows on the initial investment is 3.03x.

Finally, we calculated the adjusted price that each token should have in each year before dividends are distributed. The price was calculated by discounting the future token flows at the IRR rate of the investment, so essentially, it should indicate a price for which the NPV is zero (the discount rate is the IRR) and for which a rational investor would be indifferent in choosing whether to invest or not. This analysis, at a theoretical level, should indicate, at all times, the sentiment of the market: a higher (lower) price than the identified price indicates a lower (higher) implicit discount rate based on the risk that the market is considering for that investment. Take the following example: at year 4, a token is traded at a price of €1.20, while based on the analysis performed, the token should have a price of €1.32. In this case, the market is discounting future cash flows at a higher rate than the previously calculated IRR, for one of the following reasons:

- The outlook for the investment has varied, thus also varying the IRR;
- The market is assigning a spread to the IRR to price the additional risk it perceives in the investment.

This brief, though hopefully exhaustive, overview of the model developed identifies the business model developed and the differences with respect to those already analyzed in the course of the paper (St. Regis in primis). Before starting to wrap-up the results achieved, the analysis of the model of the Alfa company, which runs the hotel business in the property just considered, is proposed below. The reason why we want to include also the hotel activity within the model is to define in a

[150] The Money Multiple is calculated by adding up the future cash flows and dividing the sum by the total initial investment. Obviously, it does not take into account the time value of money, but it is an approximation widely used in the field of Private Equity.

global way the profitability of the operation, since some inputs (such as the rent collected by the company Beta - real estate - and paid by the company Alfa - hotel - affects the profitability of both).

5.4. Hotel Project

The presentation of the model related to the Beta company that conducts the hotel activity will be carried out following the same scheme of the real estate part.

The hotel activity takes place in the same building located in the historical center of Rome, as pointed before. The expected duration of the activity, for the same reasons already seen (mainly illustrative[151]) is 10 years. Renovation work is the responsibility of the tenant, as is routine maintenance. For reasons of simplicity - since the cases vary from contract to contract - the model does not include extraordinary works; however, renovation works at year 5 are taken into account. Given the characteristics of the property, 50 rooms are built.

5.4.1. Hotel Assumptions

This section is where the company's contribution proved most relevant. The data provided is presented in the form of assumptions but has been processed and revised where necessary. The renovation work is carried out during the first year, therefore, the hotel will not have revenues but only costs. However, according to the agreements the first-year rent is halved to alleviate the effects of the closure.

Revenues Assumptions

Unlike the real estate company, the hotel generates revenues through the "rent" of the rooms and through ancillary activities (restaurant, bar, spa). For the sake of simplification, we have assumed that revenues are generated entirely from the rooms. The metrics used to define revenues are occupancy rate, Average Daily Rate (ADR - the average price at which a room is sold) and Revenue Per Available Room (RevPAR). In this specific case, the company had made its forecasts prior to the pandemic, so the data used is not affected by the disruptive effects of the closures. In this regard, we thought it would be appropriate to integrate the analysis of the "Base Case" with a double scenario through the scenario manager: "Covid Light" and "Covid Heavy".

Before presenting the details of the two scenarios, it is necessary to define the base case. The first-year occupancy rate is 88%, with growth of 2% per year for the first two years and 1% for the next two. We arrive at the fifth year with an occupancy rate of 94%, which remains stable for the

[151] Lease contracts for commercial properties usually last 9 years with the option to renew, so the hypothesis of selling after 10 years is not a major limitation of the model. The minimum duration of the lease is established by Legislative Decree no. 23/2011.

following years; the ADR, on the other hand, is stable at €185. In the "Covid Light" scenario, the effects of the pandemic reduce the occupancy rate to 70% for the first year, 80% for the second and 90% for the third; from the fourth year onwards, the situation is considered normalized, and the rates of return are similar to those of the base scenario. The ADR falls to € 135 in the first year, to € 155 in the second year and to € 175 in the third. In the case of the "Covid Heavy", in the first year we have an occupancy rate of 50%, in the second year 70% and in the third year 88%; while the ADR is € 110 in the first, € 135 in the second and € 160 in the third. Consistent with professionals' expectations, in both cases, the effects of the pandemic are considered to have ended by the end of 2023. Returning to the base case, total revenues are calculated as follows:

$$Revenues = ADR \times Days\ per\ year \times Rooms \times Occupancy\ rate$$

Costs Assumptions

Costs were divided into variable costs and fixed costs. The main variable costs are:

- Breakfast costs;
- Laundry costs;
- Costs for welcome kits;
- Costs for sales commissions (Online Travel Agencies, website and platforms);

To these costs we felt we needed to add a reserve to meet restructuring expenses, equal to 5% of revenues. The reason why, despite using a DCF model, we did not decide to allocate the costs directly to a specific year derives from the possibility that the cash flow in the year in which those costs are incurred could become negative, making it impossible to calculate the IRR[152]. To overcome this problem, we assumed that a capital reserve was an acceptable solution, also resolving the accounting problem of depreciation.

The fixed costs, on the other hand, are:

- Rent, which is paid to the Beta company;
- Management costs[153];
- Other costs that include personnel, uniforms, insurance, accountant, municipal expenses, condominiums, and utilities[154].

As mentioned above, during the first year the rental costs are halved, while the variable costs are zero and the fixed costs include only those related to tax and administrative obligations.

[152] In order to calculate the IRR it is necessary that there is a single inversion of sign inside the cash flows, otherwise the function generates multiple IRRs all mathematically correct.
[153] Usually, management costs are variable or divided into a fixed part plus a part linked to results. In this case the company uses only a fixed portion.
[154] For more detail on fixed expenses, please refer to the Appendix.

Investment Assumptions

Within the assumptions linked to the investment, two inputs are inserted: the rental cost and the restructuring cost. The rental cost is linked directly to the assumptions of the company Beta, so the cell is linked directly to the corresponding cell. The cost of € 840,000 per year (equivalent to € 70,000 per month) translates into a cost of € 16,000 per room. The initial investment is € 2,500.00, amortized over 10 years, with the work being carried out during the first year.

Financing Assumptions

Also in this case, the financial structure is composed of 70% debt and 30% equity. The debt amounts, therefore, to € 1,750,000, amortized over 30 years. The same double amortization hypothesis was also inserted for the analysis of the hotel debt. Using the function "=CHOOSE" it is possible to choose between the payment of a constant amount or the payment of interest only with repayment of the principal at maturity. The interest rate suggested by the spread on the Interest Coverage Ratio (in the case of an business, we felt we could use EBIT as the reference metric) was less than 1%. Usually, banks use a floor system when calculating the interest rates to be applied on loans, making the 0.5% suggested by the model unlikely. In this case, at the company's suggestion, we decided to use a more realistic 2%.

Renovation Assumptions

With respect to assumptions about the renovation of the facility, we have already indicated the inclusion of a variable reserve at 5% of revenues. To improve our assumption, we have identified Year 5 as the year in which the 6-month renovation work is performed, resulting in the closure of the business for that period. The model integrates this assumption by including an EBITDA loss (referred to as "Renovation Closure") equal to half of the year.

Exit Assumptions

Unlike the Exit Assumption of the Real Estate model, in this case, both valuation methodologies generate results consistent with the analysis. The resale price resulting from dividing the NOI_{11} by the going-out cap rate at 8% (data provided by the company) is € 11,922,422; while, discounting the Unlevered Free Cash Flow of year 11 at the wacc rate, the sale value is € 12,049,415. Both values seem consistent with the cash flows generated by the project, and in any case are very similar. The calculated sales prices are net of brokerage fees (1.5%).

5.4.2. Hotel Analysis

Wacc Calculation

The calculation of the WACC has been carried out in the same way as that described in a few paragraphs above; the risk-free rate (-0.3%), as well as the tax rate, are identical to the model for the Real Estate project. Obviously, here the different inputs concern the beta unlevered and the debt cost of capital.

Equity Cost of Capital

The unlevered beta used in the CAPM was obtained from the data made available on the page of A. Damodaran and was subsequently relevered on the basis of the financial structure of the company. The equity cost of capital was thus calculated based on the levered beta, the market risk premium, considering Italian the country risk, and the risk-free rate. The required rate of return on equity (14.55%) is undoubtedly higher than that calculated for the real estate business but reflects the greater riskiness of the hotel investment compared to the return generated by the property.

Debt Cost of Capital

The debt cost of capital, as anticipated, is suggested by industry insiders (2%).

Hotel Debt Schedule

The debt amortization schedule included in the model has two options, as in the case of the Real Estate project. The interest rate is 2% and the loan is amortized over 10 years. The principal portion of the constant payments was calculated with the function "=PPMT". The annual payment is constant and equal to € 194.821, while the interest starts at € 35.000 in the first year and decreases with the reduction of the residual debt which, having reached the tenth year, is totally repaid. In the case of amortization with payment of interest and repayment of the principal at maturity, interest is constant and equal to € 35,000.

Hotel Summary

The Summary of the Hotel project shows the accounting results related to the activity. Given the need for restructuring in the first year, with the presence of a portion of operating costs, the economic result is negative. In particular, in the first-year half of the rental costs, administrative and accounting expenses are incurred. From the second year onwards, with the resumption of full operations, the results become positive. The NOI was measured from revenues, subtracting variable and fixed costs; the NOI margin is always maintained between 22% and 25%.

At year five, room renovation costs are incurred, and are funded with the capital reserve that is accumulated annually. The duration of the works is estimated at 6 months, therefore a share of the NOI has been deducted (half of the NOI to be precise) as a consequent loss on closure.

Hotel Return Analysis

The section on Return Analysis was set up in the same manner as that of the Alpha company. Starting with the NOI, adding the net proceeds from sale and deducting the capex for the initial investment. The IRR thus calculated is equal to 25.42%.

Subsequently, the unlevered cash flows destined to remunerate both the equity and debt holders were calculated: starting from the NOPAT ($EBIT \times (1 - Tax\ Rate)$), adding depreciation, net proceeds from sale and deducting capex. The unlevered IRR is 24.12%, while the project has a positive NPV of € 7,877,327. The value of the NPV must be seen in relation to the ability of the business to generate very high cash flows from the relatively low initial investment. The payback period indicates that breakeven is reached between the sixth and seventh year. Once again, we want to emphasize the usefulness of the IRR in relation to the reference discount rate: the unlevered IRR of 24.12% shows that the project can "bear" a discount rate much higher than the wacc at 5.30%.

Finally, we have calculated the levered free cash flows, starting from the EAT and considering the payment of the residual debt (which at year 10, the year of the sale, is totally amortized - assuming amortization with constant payments), depreciation, net sale proceeds and the initial equity contribution. The levered IRR is 42.76%, while the NPV is € 9,503,158. In addition, the Payback Period shows a positive result from the fourth year onwards. Again, the IRR clearly proves to be higher than the cost of equity of 14.55%.

5.5. Results

The constructed model is fundamental to analyze the impacts of the single hypotheses on a realistic case. From the beginning of the chapter we wanted to insist on the fact that the input data were obtained thanks to the contribution of a company operating in the sector because we believe that this can make the analysis closer to reality and worthy of future development. Beyond the construction of the model on a practical level, the results obtained highlight the profitability of the operation: the simulation of the investment in tokens that provides an annual cash flow of over 10%. A fundamental aspect, that probably escapes the quantitative analysis, resides in the possibility of being able to hold the control of the asset, without having the property. This is certainly an advantage, but it must, however, be imbalanced within a clear and defined statutory perimeter, otherwise there

is a risk of making the operation opaque and nullifying the positive effects of innovation (the reference here is to the ReitBZ operation).

5.5.1. Tokenization

The presentation of the theoretical model of tokenization analyzed in the course of the previous chapters, now supported by the practical simulation of the operation, leads us to the conclusion of the analysis. After having identified the possibility and having verified the profitability, it is necessary to make explicit the legal feasibility of the entire tokenization operation.

Recalling what has already been discussed in the first chapter, in sections 1.4.2 - EU Regulation and 1.4.3 Italian Regulation, we can address the issue from a practical point of view. First, the requirements of the EU Regulation apply primarily to issuers or custodians of transferable securities. By relying on an external intermediary, such as tZERO, many of the bureaucratic tasks are carried out by the platform. Currently, the European and Italian supervisory bodies have yet to clearly and comprehensively define the requirements for issuing and exchange platforms and for the custody and registration of exchanges (it is sufficient to note that at present, there is an obligation to record all exchanges of tokens in an electronic register, even if these are based on a technology that is a distributed digital ledger (DLT) itself. In any case, assuming that tokens qualify as securities according to applicable legislation, in order to obtain an exemption from certain disclosure requirements, which to date represent the heaviest bureaucratic burden, European law - and consequently Italian law - establishes that offers of securities which are, inter alia: i) intended only for qualified investors; ii) intended for less than 150 non-qualified investors per State; iii) relating to a total investment of less than €8 million; iv) composed of securities with a nominal value of not less than €100,000 are not subject to the obligation to publish a prospectus.

On closer inspection, according to the underlying philosophy of the business model, the offer is intended primarily for non-qualified investors, and therefore, in order to fall within the exemption, it must comply with Prospectus Regulation requirements. In this case, the capital raised from investors is less than € 8 million because, although the initial investment is approximately € 8.1 million, 70% is financed through debt. Of the remaining 30% (€ 2,425,486), we can assume a 51% financed by the Beta company and the remaining part (49% - € 1,188,488) raised through tokens. So, the project is exempt from the publication of the prospectus according to Prospectus Regulation; moreover, since the amount raised is less than € 5 million, it can be collected through equity crowdfunding platforms.

The current regulation has significant limitations, but as we have already mentioned, we are convinced of the fact that, in the wake of the strong interest that the topic is arousing in the United

States, European and Italian regulators will also introduce regulations that are more agile and in line with the philosophy of tokenization and blockchain in general.

5.5.2. Improvements

Before concluding the chapter, we wanted to devote some space to identifying the current limitations of the constructed model and possible improvements that could be made. First of all, and this applies to both projects, a monthly analysis could be proposed, eliminating certain approximations that we had to make. All models in which cash flows are analyzed annually suffer, in fact, from an erroneous underlying assumption, i.e., that flows occur at the end of the year. The various solutions proposed, such as the mid-year convention[155], however, represent approximations that could be improved by adopting a monthly perspective, especially in the case of activities that have a good predictability of the flows generated, such as those in the real estate sector.

Still in virtue of the search for a model that is as close to reality as possible, the analysis of the results generated by the hotel business could improve with the definition of revenues by differentiating them on the basis of the respective departments (room revenues, restaurant revenues, revenues from other activities, etc.).

Currently, the assumption of sales at year 10 makes the model static. Therefore, we highlight the possibility of making it dynamic by analyzing the different scenarios based on the year of sale.

In general, at the level of business model, the entire process of tokenization and management of exchanges does not generate fees for the company Alfa or Beta, but only for the platform that materially manages the process. This certainly represents a current limitation because if, as we believe, tokenization can lead the way to a new market, the company is giving up a share of those profits.

Finally, the model built analyzes only the hypothesis of ex novo acquisition of a property, however in the premises of the benefits of tokenization there was also the hypothesis of alienation of a property owned by the manager of the hotel activity. Although we have not developed a specific model for the analysis of this scenario, we have tried to include the hypothesis in an indirect way: within the "Hotel Assumptions" page there is a toggle for switching from the Rent to Buy model. Essentially, through the "=CHOOSE" function, the parameters related to the initial investment (which goes from € 2,500,000 to € 8,084,952 - equal to the initial investment of Alfa company), to the operating costs incurred (adding the costs of property taxes - IMU - and cancelling the rental costs) and to the exit (in a less refined way, the sale price has been calculated as the sum of the sale prices

[155] The mid-year convention requires that annual cash flows be discounted at mid-year. So cash flow at year 1 is discounted by 0.5, cash flow at year 2 is discounted by 1.5, and so on.

of the two separate units, about € 22 million). The results obtained indicate that the most convenient option is renting (IRR levered of rent is 42.76% vs IRR levered of buy 37.37%).

Conclusions

This paper has attempted to build a logical path that would represent all the stages that have led to the implementation of the tokenization of assets in the real estate market and specifically in the hospitality sector. In fact, this market is historically characterized by numerous problems such as high illiquidity, high investment, continuous maintenance and therefore excessively high costs, the impossibility of diversification within a single investment, making an investment in the real estate market impractical for many small-medium investors. It is from this perspective, in fact, that the creation of REITs should be seen, whose final objective is precisely that of fractionalizing investments, thus making the market accessible to all types of investors. Unfortunately, however, limitations on the exchange of shares, the need to use an intermediary broker, just to name a few, have discouraged the development of a secondary market.

Turning our attention to the lodging sector, there is no doubt that there is a difference between small and medium-sized hotels and large hotels, an inequality that is exacerbated in crisis periods. If, on the one hand, large hotels can count on the unbundling of the management of the real estate asset and the core business, thus making the structure more flexible, in the case of small hotels, where ownership and management coincide (independent hotels), the separation through the creation of a REIT (a typical operation for large hotels that adopts an asset-light strategy) is not economically sustainable.

In this context, there is the technological development that in recent years has led to the creation of distributed ledgers (DLT) through the use of blockchain. The further innovation brought by smart contracts has made possible the creation of digitized securities, the so-called tokens.

Unfortunately, however, innovation has a much higher speed compared to legislation, which, having as its purpose the protection of investors, fails to follow the innovative forces of the market, ending up regulating in an unclear and inconsistent way the applications of blockchain in the financial field and not only.

The success of tokens has led to their use in the hospitality industry through asset tokenization. The tokenization of the St. Regis hotel, presented in the paper, is an example of this. The objective of this operation is precisely to increase the liquidity of an investment that is traditionally associated with illiquidity.

In fact, on the basis of the data provided by the tZero platform it is possible to note that the ASPD tokens were issued at a unit value of $1.00, and, subsequent to issuance, reached a high value of $1.33 per token, and thus decreeing the success of tokenization.

The last chapter of the paper proposes a possible application of the tokenization process to the hotel sector, through the design and implementation of a business model based on the fractionalization of the ownership of a property located in the center of Rome, in which a hotel activity is carried out. The analysis has been developed starting from the construction of a model on Excel that would include both the management of the property and the hotel activity, in order to obtain a dynamic model that would consider the profitability of both operations. In order to make the analysis as realistic as possible, the input data of the model were shared by a company operating in the hotel sector in Rome.

The results obtained demonstrate the profitability of the operation by reporting an annual cash flow in excess of 10%. To conclude the analysis, an investment simulation was proposed to verify the profitability of the operation for the tokenholders. Since the current legislation (both European and Italian) provides for quantitative limits to the public offering of transferable securities, we have tried to incorporate these aspects in the model and run a simulation to ensure that these parameters are respected, aware of the fact that the legislation is constantly updated and that, probably, many limitations will be lightened in the near future.

A fundamental aspect of the operation, which is not highlighted by the data, lies in the advantage of being able to hold control of the asset, without having ownership.

Despite the validity of asset tokenization at both a theoretical and practical level, many wonder about the future prospects of this new technology. To date, unfortunately, it is difficult to say with certainty, however, if we observe this new market from the point of view of the model of development of innovations, we can say that success will come definitively in the moment in which that "Chasm" between early adopters and early majority will be overcome, and the technology on which the process is based will no longer be considered a disruptive innovation. For the moment, the integration of blockchain into this sector is working and does not seem likely to slow down. Adoption of a token-based economy still seems to be in its early stages, but continued attempts and experimentation with new models, guided by hopefully more agile and streamlined regulation, but no less inclined to investor protection, seem to be moving in the right direction.

Appendix

Chapter One

Definition of Securities

"The term "security" means any note, stock, treasury stock, security future, security-based swap, bond, debenture, evidence of indebtedness, certificate of interest or participation in any profit-sharing agreement, collateral-trust certificate, preorganization certificate or subscription, transferable share, investment contract, voting-trust certificate, certificate of deposit for a security, fractional undivided interest in oil, gas, or other mineral rights, any put, call, straddle, option, or privilege on any security, certificate of deposit, or group or index of securities (including any interest therein or based on the value thereof), or any put, call, straddle, option, or privilege entered into on a national securities exchange relating to foreign currency, or, in general, any interest or instrument commonly known as a "security", or any certificate of interest or participation in, temporary or interim certificate for, receipt for, guarantee of, or warrant or right to subscribe to or purchase, any of the foregoing."[156]

Regulation

Reg A

Regulation A is aimed at all those companies in the United States and Canada that are not already registered within the SEC. There are no constraints on the instrument used to reach investors, but the maximum offering limit is set at $20 million per year. The asset classes referred to are Debt and Equity. Regulation A, as it stands today, was born with the JOBS Act of 2012 to broaden the range of investors from which to raise capital: until then, in fact, to qualify as an accredited investor[157] was necessary to have an income in the last two years of $200 000 (or $300 000 including the spouse) and have a net worth of more than $1 million (excluding the main house)[158].

Reg A+

Regulation A+ is essentially a revision of Regulation A; it refers to the same group of investors but allows the maximum offering limit to be raised to $50 million per year and, unlike Regulation A,

[156] 15 U.S. Code § 77b - Definitions; promotion of efficiency, competition, and capital formation. (1934). LII / Legal Information Institute. https://www.law.cornell.edu/uscode/text/15/77b#a_1

[157] According to an estimate, in the USA, accredited investors are 10.6% of american households. (PK 2021)

[158] Crawford, M. (2021, April 15). Regulation A+: What Entrepreneurs Need to Know. StartEngine. https://www.startengine.com/blog/regulation-a-what-entrepreneurs-need-to-know/.

does not require compliance with the Blue Sky Laws[159] in each state[160]. Reg A and A+ are intended to ease access to capital markets for smaller companies, which is why they are referred to as mini-IPOs.

Reg CF

Regulation Crowdfunding was created with the aim of easing the requirements for launching a funding campaign and at the same time widening the audience of investors. This regulation refers only to US based companies which are not already registered with the SEC, while the intermediation platforms on which the campaign can be conducted must necessarily be accredited as broker-dealers with FINRA (Financial Industry Regulatory Authority). Obviously, the enlargement of the target investors corresponds to a reduction of the amount that can be financed. Up to $107,000 no external audit is required; up to $1 million an audit of the books by an accredited external auditor is required; up to $5 million an audit is required. Because of its greater flexibility than Reg A, many firms use Reg CF to "test the waters" and then pursue financing under other regulations[161].

Reg D

Regulation D is divided into subcategories Rule 506b and Rule 506c. Both Rules apply to US and foreign, private or SEC registered companies and do not limit the amount of offering. Nevertheless, there are some differences: Rule b has a maximum limit of 35 non accredited investors and does not allow for the promotion of the offering; while Rule 506c does not have neither of these restrictions.

Reg S

Regulation S is undoubtedly the most comprehensive of securities regulation. Indeed, there are no restrictions or limitations regarding investors to whom the offering is directed, nor on the country of origin of the company raising funds. Often, US companies use Reg S together with Reg D, given the possibility to collect financing also from non-US investors.

[159] Blue Sky Laws are state-level laws regarding investors' protection from fraud related to issuance of securities Mansa, J. (2020). Blue Sky Laws Definition. Investopedia. https://www.investopedia.com/terms/b/blueskylaws.asp
[160] Almerico, K. (2020b, April 14). What is Reg A plus versus Reg A? KoreConX All-in-One Platform. https://www.koreconx.com/reg-plus-versus-reg/
[161] Crawford, M. (2021a, March 26). Regulation Crowdfunding 101 For Entrepreneurs. StartEngine. https://www.startengine.com/blog/regulation-crowdfunding-101-for-entrepreneurs/.

Chapter Two

Third Party Operators

Third Party Operators ("TPOs")[162] fill the gap that has formed between franchisors and property owners who decide to join a franchise agreement, despite not having the required expertise. Given the high level of experience and expertise required in the management of a branded hotel, property asset owners are happy to rely on management companies that know and work with these brands on a daily basis. Moreover, since they are hired directly by the independent owner, they have the primary objective of satisfying the franchisee's interest. On the other hand, TPOs provide franchisors with expertise in managing the business.

[162] Collins, S., & Perret, S. (2015). Decision, decision. . . Which hotel operating model is right for you? HVS.

Chapter Three

Operating Partnership Units

In a REIT, Operating Partnership Units[163] ("OP Units") are indivisible units that replicate the value and performance of common stocks. From a purely economic point of view, therefore, the two instruments are identical. However, OP Units are an integral part of UPREITs[164]: when a UPREIT is formed, the properties are entrusted to an Operating Partnership in exchange for OP Units, thus avoiding generating a taxable transaction. Finally, there are multiple differences in the voting rights associated with the two securities. Depending on the situations in which a vote is required, the bylaws may provide limitations for one or the other category (generally, holders of OP Units do not have voting rights).

[163] UPREIT | NNN | Broadstone. (2020, February 7). Broadstone Net Lease. https://broadstone.com/real-estate-services/upreit/

[164] A UPREIT is a REIT structure in which owners convey ownership rights to real estate assets in an Operating Partnership.

Chapter Four

Covid-19 Safety Measures

On June 15, 2020, Federalberghi, in collaboration with a task force of experts in the medical field and the hotel industry, published a document containing guidelines to be adopted within the accommodation facilities[165]. The document, called " Accoglienza Sicura " ("Safe Welcoming"), stems from the need to clarify and standardize the safety measures required not only by the Ministry of Health, but also by the World Health Organization. At a general level, common sense rules remain in place, such as the use of certified masks (surgical or FFP2), frequent hand washing, physical distance and hygiene rules in case of sneezing or coughing. In order to identify measures to be taken, hotel operations were divided into three standard phases: reception, accommodation, and administration.

Reception

The reception area is the first point of contact between staff and customers, so general rules about measuring body temperature, spacing, and using personal protective equipment should be followed. To make it easier to respect the distance, the use of signs indicating the distance is suggested. This is where the adoption of self-check-in and self-check-out technology is a definite advantage. The company must then sanitize every surface that comes into contact with clients (keys, pens, pos, etc.) and eliminate non-essential items (such as, for example, magazines or information material). The capacity of the elevators and how guests' cars can be parked are also regulated.

Accomodation

Rooms and common areas must be sanitized and cleaned frequently, especially on surfaces that are likely to come into contact (e.g., handrails, elevator buttons, light switches, etc.). The cleaning of the rooms is regulated in every element, from the ventilation methods to the cleaning of the items in the minibar.

Catering

The rules relating to catering are taken from the guidelines dictated by the Regions on the subject of catering. Mainly, the need to wash hands frequently and change gloves often is stressed. Tables must be arranged in such a way as to allow the necessary spacing and the management must give priority to the use of outdoor spaces, such as terraces and gardens. Buffet dining is possible only where physical contact with the food is prevented.

Additional Instructions

[165] Bonafaccia, F., Candido, A. G., & Nucara, A. M. (2020). Accoglienza sicura/ Safe ospitality.

All these instructions are accompanied by instructions for frequent maintenance of the air conditioning and ventilation systems (i.e., the deactivation of the recirculation functions). Entrances to swimming pools and wellness areas should also be restricted to a safe distance.

On March 31, 2020, the World Health Organization published a document[166] regarding guidelines to deal with the renewed spread of the virus. The document, which was updated on August 25, 2020, refers in particular to the preventive measures to be taken in hotel facilities and refers in any case to the consultation of the indications provided by the health authorities of one's own country. In terms of content, there are no major differences from the information outlined by Federalberghi, therefore, it is not worth exploring further.

[166] World Health Organization. (2020). COVID-19 management in hotels and other entities of the accommodation sector.

Chapter Five

Alfa Company

These are the main information and assumptions used to carry out the analysis for Alfa Co. active in Real Estate industry.

Alfa Company

General Info and Timing	
Property	Hotel X
Address	Centro Storico
City, State	Roma, Italia
Version	21.0
Acquisition Date	2020
Hold Period	10 Years
Initial Investment	8,084,952 €
Value at Present Date	12,213,261
Exit	2030

Revenues Assumptions	
Monthly Rent	70,000
Annual Rent	840,000

Costs Assumptions	
Property Tax rate	0.81%
Property Taxes	65,111
Income Tax rate	33%
Insurance and Maintenanc	6%
Personal Tax rate	26%

Tokenization Costs	
Upfront	$100,000
Ongoing year 1	$50,000
Ongoing from year 2	$20,000
EUR/USD	1.17713
Upfront	84,952 €
Ongoing year 1	42,476 €
Ongoing from year 2	16,990 €

Purchase Assumptions	
Going-in Cap rate	8.84%
Purchase Price	8,000,000
Amortization period	20 Years

Sales Assumptions	
Going-out Cap rate	7.00%
Sale Proceeds	1.50%
Sale Price (going-out cap rate)	10,194,602
Sale Price (wacc)	15,170,804
Sale Price (going-out cap	10,349,850

Property Stats	
Rendita Catastale	90,000
Rivalutazione	1.05
Moltiplicatore Immobili D/2	65
Valore Catastale	6,142,500
Aliquota Comune	1.06%

Financing Assumption	
Loan to Cost	70%
Interest rate	2.01%
Loan Amount	5,659,467
Amortization period	30 Years
Equity	30%
Equity injections	2,425,486

WACC	
Cost of Equity	**10.22%**
Beta Equity	1.54
Beta Unlevered	*0.6*
Risk Free rate (Bund 10y)	-0.30%
Total Equity Risk Premium	6.84%
Market Risk Premium (US)	*4.70%*
Country Risk Premium	*2.14%*
Cost of Debt	**2.01%**
Default Spread by ICR	2.31%
WACC	**4.01%**
ICR	6.38
D	5,659,467
E	2,425,486
V	8,084,952

Valuation		
Project	***Free Cash Flow***	***NOI***
IRR	8.74%	9.66%
NPV	3,438,961	4,128,308
IRR partition (Terminal Value)	60%	
Tokenholders		
IRR (after-tax)	17.24%	
Money Multiple	3.26x	
Equity		
IRR	22.93%	
NPV	2,609,439	

Alfa Summary	Year 0 2020	Year 1 2021	Year 2 2022	Year 3 2023	Year 4 2024	Year 5 2025	Year 6 2026	Year 7 2027	Year 8 2028	Year 9 2029	Year 10 2030 EXIT	Year 11 2031
Revenues												
Rents		420,000	840,000	840,000	840,000	840,000	840,000	840,000	840,000	840,000	840,000	840,000
Costs												
Property Taxes	-	65,111 -	65,111 -	65,111 -	65,111 -	65,111 -	65,111 -	65,111 -	65,111 -	65,111 -	65,111 -	65,111
Insurance and Maintenance	6% -	25,200 -	50,400 -	50,400 -	50,400 -	50,400 -	50,400 -	50,400 -	50,400 -	50,400 -	50,400 -	50,400
Tokenization costs	- 84,952 -	42,476 -	16,990 -	16,990 -	16,990 -	16,990 -	16,990 -	16,990 -	16,990 -	16,990 -	16,990	-
EBITDA=NOI		**287,213**	**707,499**	**707,499**	**707,499**	**707,499**	**707,499**	**707,499**	**707,499**	**707,499**	**707,499**	**724,490**
Depreciation	-	400,000 -	400,000 -	400,000 -	400,000 -	400,000 -	400,000 -	400,000 -	400,000 -	400,000 -	400,000 -	400,000
EBIT	**-**	**112,787**	**307,499**	**307,499**	**307,499**	**307,499**	**307,499**	**307,499**	**307,499**	**307,499**	**307,499**	**324,490**
Interests	2.01% -	113,755 -	110,956 -	108,100 -	105,186 -	102,214 -	99,183 -	96,090 -	92,935 -	89,717 -	86,434 -	83,086
Taxes	33%	37,220 -	101,475 -	101,475 -	101,475 -	101,475 -	101,475 -	101,475 -	101,475 -	101,475 -	101,475 -	107,082
EAT	**-**	**189,322**	**95,069**	**97,925**	**100,838**	**103,810**	**106,842**	**109,934**	**113,089**	**116,307**	**119,590**	**134,322**

Alfa Company Summary contains reclassified Income Statement. In real estate industry analysis, NOI (or EBITDA) is a fundamental measure upon which valuation analysis are based.

Alfa Return Analysis	Year 0 2020	Year 1 2021	Year 2 2022	Year 3 2023	Year 4 2024	Year 5 2025	Year 6 2026	Year 7 2027	Year 8 2028	Year 9 2029	Year 10 2030 EXIT	Year 11 2031
NOI	**-**	**287,213**	**707,499**	**707,499**	**707,499**	**707,499**	**707,499**	**707,499**	**707,499**	**707,499**	**707,499**	**724,490**
Capex	- 8,084,952											
Sale											10,194,602	
	- 8,084,952	287,213	707,499	707,499	707,499	707,499	707,499	707,499	707,499	707,499	10,902,101	724,490
IRR	9.66%											
Value at 0	12,213,261											
NPV	4,128,308											
Levered												
EAT	**-** **-**	**189,322**	**95,069**	**97,925**	**100,838**	**103,810**	**106,842**	**109,934**	**113,089**	**116,307**	**119,590**	**134,322**
Depreciation	-	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000
Equity Contribution	- 2,425,486											
Sale											10,194,602	
Debt Residual											- 4,300,223	
Cash Flow to Equity	**- 2,425,486**	**210,678**	**495,069**	**497,925**	**500,838**	**503,810**	**506,842**	**509,934**	**513,089**	**516,307**	**6,413,969**	**534,322**
IRR	22.93%											
NPV	2,609,439											
Payback Period	- 2,425,486	- 2,214,808	- 1,719,739	- 1,221,815	- 720,977	- 217,167	289,675	799,609	1,312,698	1,829,005	8,242,974	
Unlevered												
NOPAT	**-** **-**	**75,567**	**206,024**	**206,024**	**206,024**	**206,024**	**206,024**	**206,024**	**206,024**	**206,024**	**206,024**	**217,408**
Depreciation	-	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000
Capex	- 8,084,952											
Sale											10,194,602	
Free Cash Flow	**- 8,084,952**	**324,433**	**606,024**	**606,024**	**606,024**	**606,024**	**606,024**	**606,024**	**606,024**	**606,024**	**10,800,627**	**617,408**
IRR	8.74%											
NPV	3,438,961											
Payback Period	- 8,084,952	- 7,760,519	- 7,154,495	- 6,548,471	- 5,942,446	- 5,336,422	- 4,730,398	- 4,124,373	- 3,518,349	- 2,912,325	7,888,302	

Alfa Company Return Analysis contains analysis based on NOI, Levered and Unlevered Cash Flows. Levered Cash Flows have been discounted to Cost of Equity, while Unlevered Cash Flows have been discounted to WACC.

Token	Year 0 2020	Year 1 2021	Year 2 2022	Year 3 2023	Year 4 2024	Year 5 2025	Year 6 2026	Year 7 2027	Year 8 2028	Year 9 2029	Year 10 2030 EXIT	Year 11 2031
Cash Flow To Equity -	2,425,486	210,678	495,069	497,925	500,838	503,810	506,842	509,934	513,089	516,307	6,413,969	534,322
IRR	***22.93%***											
Cash Flow To Equity after Tax -	2,425,486	155,901	366,351	368,464	370,620	372,819	375,063	377,351	379,686	382,067	4,746,337	395,399
IRR (after tax)	***17.24%***											

Input Simulation	
Tokenized Share	49%
Initial Investment	500 €
Token Price	1.00 €

Output Simulation	
Number of Investors	2,376
Token Number	1,188,488

Investment Simulation

Cash Flow All Tokenholders -	1,188,488	76,392	179,512	180,547	181,604	182,681	183,781	184,902	186,046	187,213	2,325,705	
Return on Investment		*6.43%*	*15.10%*	*15.19%*	*15.28%*	*15.37%*	*15.46%*	*15.56%*	*15.65%*	*15.75%*	*195.69%*	
Cash Flow per Single Tokenholder -	500	32	76	76	76	77	77	78	78	79	979	
Return on Investment		*6.43%*	*15.11%*	*15.20%*	*15.29%*	*15.38%*	*15.47%*	*15.56%*	*15.66%*	*15.76%*	*195.77%*	
Value of initial investment at time T before dividend		586	650	673	700	732	768	809	858	914	979	
Value of initial investment at time T after dividend		554	574	597	624	655	690	731	779	835	-	

Cash Flow per Token

Cash Flow per Token -	1.00	0.06	0.15	0.15	0.15	0.15	0.15	0.16	0.16	0.16	1.96	
Return on Token		*6.43%*	*15.10%*	*15.19%*	*15.28%*	*15.37%*	*15.46%*	*15.56%*	*15.65%*	*15.75%*	*195.69%*	

Token Analysis show the cash flow to tokenholders.

Price Structure

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Cash Flow	- 1.00	0.06	0.15	0.15	0.15	0.15	0.15	0.16	0.16	0.16	1.96	-
IRR	***17.24%***											
P(t) before dividend	1.00 €	1.17 €	1.30 €	1.35 €	1.40 €	1.46 €	1.53 €	1.62 €	1.71 €	1.83 €	1.96 €	
P(t) after dividend	1.00 €	1.11 €	1.15 €	1.19 €	1.25 €	1.31 €	1.38 €	1.46 €	1.56 €	1.67 €		
P(1)	1.17 €	0.06	0.13	0.11	0.09	0.08	0.07	0.06	0.05	0.04	0.47	-
P(2)	1.30 €		0.15	0.13	0.11	0.10	0.08	0.07	0.06	0.05	0.55	-
P(3)	1.35 €			0.15	0.13	0.11	0.10	0.08	0.07	0.06	0.64	-
P(4)	1.40 €				0.15	0.13	0.11	0.10	0.08	0.07	0.75	-
P(5)	1.46 €					0.15	0.13	0.11	0.10	0.08	0.88	-
P(6)	1.53 €						0.15	0.13	0.11	0.10	1.04	-
P(7)	1.62 €							0.16	0.13	0.11	1.21	-
P(8)	1.71 €								0.16	0.13	1.42	-
P(9)	1.83 €									0.16	1.67	-
P(10)	1.96 €										1.96	-
P(11)	- €											-

Beta Company

These are the main information and assumptions used to carry out the analysis for Beta Co. active in hotel industry.

Beta Company

General Info and Timing	
Property	Hotel X
Address	Roma Centro
City, State	Roma, Italia
Version	21.0
Rooms / Keys	50
Acquisition Date	2020
Hold Period	10
Construction Start	2020
Value at present date	13,974,767
Renovation Year	5
Exit	2030

Purchase Assumptions	total	per key
Rent	600,000	12,000
Initial investment	2,500,000	50,000
Amortization period	10	
Going-in Cap rate	8.52%	
Rent Scenario	2,500,000	
Buy Scenario	10,584,952	
Property taxes	5,209	
Sale Price (net)	21,722,609	

Toggles	
Amortization Type	1
1	Constant Payments
2	Interest Only
Rent/Buy	1
1	Rent
2	Buy

Revenues Assumptions	Year 2	Year 3	Year 4	Year 5	Year 6
Occupancy rate	88%	90%	92%	93%	94%
Occupancy rate growth rate		*2%*	*2%*	*1%*	*1%*
Average Daily Rate (ADR)	185	185	185	185	185
ADR rate growth rate		0%	0%	0%	0%
Day Count Convention	365				

Costs Assumptions	
Management Costs	150,000
Rent Costs	600,000
Total SG&A	522,020
Spese pratiche comunali primo anno	60,000
Spese pratiche antincendio primo anno	120,000
Total Fixed Costs 1 Anno	1,452,020
Total Fixed Costs dal 2 Anno	1,272,020
Tax rate	33%

Property Level Return Metrics			
	Current	*Rent*	*Buy*
Project			
IRR	28.52%	23.80%	14.25%
NPV	9,934,851	7,238,304	9,347,865
Equity			
IRR	50.99%	42.51%	31.53%
NPV	11,577,985	8,881,437	12,999,192

Exit Assumptions	
Going-out Cap rate	8.00%
Sale Price (going-out cap rate)	14,877,422
Sale Price (wacc)	13,893,079
Sale Proceeds	1.50%
Sale Price average	14,385,251

Financing Assumptions	
Loan to Cost	70%
Intererest rate	2%
Loan amount	1,750,000
Amortization period	10
Amortization amount	250,000
Equity	30%
Equity injection	750,000

Costs Assumptions	
Variable Costs	
Commissioni Agoda	14%
% vendite agoda	5%
Commissioni altre Online Travel	18%
% vendite altre OTA	79%
Commissioni sito web	4%
% vendite sito	11%
Commissioni vendita diretta	0%
% vendite dirette	5%
Totale Commissioni Venidte	**15%**
Colazione/camera	7
Kit cortesia/camera	1.00
Lavanderia/camera	4.00
Renovation reserve	5%
Fixed Costs	
Rent	**600,000**
Management Fee	**150,000**
Personale Full Time Equivalent	16
Costo azienda annuo/FTE	22,000
Totale Personale	352,000
Divise del personale/FTE	120
Totale Divise	1920
Cancelleria	600
Utenze	30,000
Telefonia	1,500
Pubblicità	15,000
Assicurazioni	5,000
Altre spese generali	20,000
Spese Condominiali	12,000
Commercialista	12,000
Risorse umane outsourcing	72,000
Total SG&A	**522,020**
Spese pratiche comunali primo a	**60,000**
Spese pratiche antincendio prim	**120,000**
Total Fixed Costs 1 Anno	**229,000**
Total Fixed Costs dal 2 Anno	**1,272,020**

WACC	
Cost of Equity	**16.01%**
Beta Equity	2.38
Beta unlevered	*0.93*
Risk Free rate (Bund 10y)	-0.30%
Total Equity Risk Premium	6.84%
Market Risk Premium (US)	*4.70%*
Country Risk Premium	*2.14%*
Cost of Debt	**2.00%**
Default Spread by ICR	0.69%
WACC	**5.74%**
ICR	20.48
D	1,750,000
E	750,000
V	2,500,000

Beta Summary	Year 0 2020	Year 1 2021	Year 2 2022	Year 3 2023	Year 4 2024	Year 5 2025	Year 6 2026	Year 7 2027	Year 8 2028	Year 9 2029	Year 10 2030	Year 11 2031
Rooms		50	50	50	50	50	50	50	50	50	50	50
Occupancy Rate		88%	88%	90%	92%	93%	94%	94%	94%	94%	94%	94%
ADR		185	185	185	185	185	185	185	185	185	185	185
ADR growth		*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
RevPar		163	163	167	170	172	174	174	174	174	174	174
RevPar growth			*0%*	*2%*	*2%*	*1%*	*1%*	*0%*	*0%*	*0%*	*0%*	*0%*
Ricavi da Camere		**-**	**2,971,100**	**3,038,625**	**3,106,150**	**3,139,913**	**3,173,675**	**3,173,675**	**3,173,675**	**3,173,675**	**3,173,675**	**3,173,675**
Breakfasts		-	- 112,420	- 114,975	- 117,530	- 118,808	- 120,085	- 120,085	- 120,085	- 120,085	- 120,085	- 120,085
Online Travel Agencies costs		-	- 456,361	- 466,733	- 477,105	- 482,291	- 487,476	- 487,476	- 487,476	- 487,476	- 487,476	- 487,476
Welome kit		-	- 16,060	- 16,425	- 16,790	- 16,973	- 17,155	- 17,155	- 17,155	- 17,155	- 17,155	- 17,155
Laundry		-	- 64,240	- 65,700	- 67,160	- 67,890	- 68,620	- 68,620	- 68,620	- 68,620	- 68,620	- 68,620
Renovation reserve	5%	-	- 148,555	- 151,931	- 155,308	- 156,996	- 158,684	- 158,684	- 158,684	- 158,684	- 158,684	
Total Variable Costs		**-**	**-** **797,636**	**-** **815,764**	**-** **833,892**	**-** **842,956**	**-** **852,020**	**-** **852,020**	**-** **852,020**	**-** **852,020**	**-** **852,020**	**-** **693,336**
Margine Operativo Lordo		**-**	**2,173,464**	**2,222,861**	**2,272,258**	**2,296,956**	**2,321,655**	**2,321,655**	**2,321,655**	**2,321,655**	**2,321,655**	**2,480,339**
		-	-	-	-	-	-	-	-	-	-	-
Rent	-	420,000	- 840,000	- 840,000	- 840,000	- 840,000	- 840,000	- 840,000	- 840,000	- 840,000	- 840,000	- 840,000
Management fee	-	150,000	- 150,000	- 150,000	- 150,000	- 150,000	- 150,000	- 150,000	- 150,000	- 150,000	- 150,000	- 150,000
Total SG&A	-	229,000	- 522,020	- 522,020	- 522,020	- 522,020	- 522,020	- 522,020	- 522,020	- 522,020	- 522,020	- 522,020
Total Fixed Costs	**-**	**979,000**	**-** **1,512,020**	**-** **1,512,020**	**-** **1,512,020**	**-** **1,512,020**	**-** **1,512,020**	**-** **1,512,020**	**-** **1,512,020**	**-** **1,512,020**	**-** **1,512,020**	**-1,512,020**
Total Costs	**-**	**979,000**	**-** **2,309,656**	**-** **2,327,784**	**-** **2,345,912**	**-** **2,354,976**	**-** **2,364,040**	**-** **2,364,040**	**-** **2,364,040**	**-** **2,364,040**	**-** **2,364,040**	**-2,205,356**
NOI or EBITDA	**-**	**979,000**	**661,444**	**710,841**	**760,238**	**784,936**	**809,635**	**809,635**	**809,635**	**809,635**	**809,635**	**968,319**
NOI margin			*22.26%*	*23.39%*	*24.48%*	*25.00%*	*25.51%*	*25.51%*	*25.51%*	*25.51%*	*25.51%*	*30.51%*
Renovation Closure	-	-	-	-	-	-	392,468	-	-	-	-	-
Depreciation	-	250,000	- 250,000	- 250,000	- 250,000	- 250,000	- 250,000	- 250,000	- 250,000	- 250,000	- 250,000	-
EBIT	**-**	**1,229,000**	**411,444**	**460,841**	**510,238**	**142,468**	**559,635**	**559,635**	**559,635**	**559,635**	**559,635**	**968,319**
Interest Expenses	2%	- 35,000	- 31,804	- 28,543	- 25,218	- 21,826	- 18,366	- 14,837	- 11,237	- 7,565	- 3,820	-
EBT	**-**	**1,264,000**	**379,640**	**432,298**	**485,020**	**120,643**	**541,269**	**544,798**	**548,398**	**552,070**	**555,815**	**968,319**
Taxes	33%	417,120	- 125,281	- 142,658	- 160,057	- 39,812	- 178,619	- 179,783	- 180,971	- 182,183	- 183,419	- 319,545
EAT	**-**	**846,880**	**254,359**	**289,639**	**324,964**	**80,831**	**362,650**	**365,015**	**367,427**	**369,887**	**372,396**	**648,773**

Beta Company Summary contains the reclassified Income Statement with main Hotel results.

Beta Return Analysis	Year 0 2020	Year 1 2021	Year 2 2022	Year 3 2023	Year 4 2024	Year 5 2025	Year 6 2026	Year 7 2027	Year 8 2028	Year 9 2029	Year 10 2030 EXIT	Year 11 2031
NOI	-	979,000	661,444	710,841	760,238	784,936	809,635	809,635	809,635	809,635	809,635	968,319
Capex	- 2,500,000											
Sale											11,528,007	
	- 2,500,000	- 979,000	661,444	710,841	760,238	784,936	809,635	809,635	809,635	809,635	12,337,642	968,319
IRR	25.14%											
Value at 0	10,664,674											
Levered												
EAT	-	- 846,880	254,359	289,639	324,964	80,831	362,650	365,015	367,427	369,887	372,396	648,773
Depreciation	-	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	
Equity Contribution	- 750,000											
Sale											11,528,007	
Debt Residual											-	
Cash Flow to Equity	-	**750,000** - **596,880**	**504,359**	**539,639**	**574,964**	**330,831**	**612,650**	**615,015**	**617,427**	**619,887**	**12,150,403**	**648,773**
IRR	42.51%											
NPV	8,881,437											
Payback Period	- 750,000	- 1,346,880	- 842,521	- 302,881	272,082	602,913	1,215,563	1,830,578	2,448,004	3,067,891	15,218,294	
Unlevered												
NOPAT	-	- **823,430**	**275,668**	**308,763**	**341,859**	**95,454**	**374,955**	**374,955**	**374,955**	**374,955**	**374,955**	**648,773**
Depreciation	-	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	-
Capex	- 2,500,000											
Sale											11,528,007	
Free Cash Flow	-	**2,500,000** - **573,430**	**525,668**	**558,763**	**591,859**	**345,454**	**624,955**	**624,955**	**624,955**	**624,955**	**12,152,962**	**648,773**
IRR	23.80%											
NPV	7,238,304											
Payback Period	- 2,500,000	- 3,073,430	- 2,547,762	- 1,988,999	- 1,397,140	- 1,051,686	- 426,731	198,225	823,180	1,448,135	13,601,098	

Beta Company Return Analysis contains analysis based on NOI, Levered and Unlevered Cash Flows. Levered Cash Flows have been discounted to Cost of Equity, while Unlevered Cash Flows have been discounted to WACC

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Table of Figures

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Summary

State of Real Estate Tokenization

The term Real Estate includes within it several subcategories: residential, industrial, land and commercial, all of which have many characteristics that make the market extremely attractive (low volatility, ability to protect against inflation (inflation hedging asset), cash flow, high possibility of diversification within an investment portfolio, high leverage), but at the same time there are some disadvantageous factors such as: the continuous maintenance, the impossibility of diversification within a single investment, high illiquidity and large capital. The latter defined as the biggest barrier in this sector that impacts mainly the commercial real estate and in particular the "Lodging and Hotel" sector.

Fractionalization Types

An initial solution to try to make the market accessible to all retail investors was the formation of Real Estate Investment Trusts (REITs) defined as mutual funds set up in the form of companies, which deal with the purchase, management and sale of real estate. The objective of REITs is to allow individual investors to gain exposure to the real estate market, without the need to invest sums that would otherwise be unavailable. However, generic exposure to the Real Estate market, illiquidity and the need to use a brokerage have prevented the development of a liquid secondary market.

A second solution has been provided thanks to the advent of technology, in fact, this has allowed the creation of new decentralized platforms based on the blockchain protocol and whose main features are: decentralization, immutability, transaction tracking, pseudonymity, disintermediation, transparency and programmability. It is precisely this last aspect that has enabled the birth and spread of digital tokens. In particular, we can distinguish four types of tokens: payment token, utility token, asset token and hybrid token.

Tokenization Benefits

From the expansion of this technology come several applications. The one that will be discussed in this paper is asset tokenization, which allows the digitization of a set of information related to the ownership rights of real assets recorded on the blockchain. The benefits of tokenization, regardless of which asset you want to tokenize, are: **greater liquidity** as this mechanism allows greater freedom of exchange. Unlike REITs, there are no minimum holding periods for units (nor repurchase at a lower figure), so it is more likely that a more liquid secondary market will be created than currently exists for closed REITs; **greater access** thanks

to tokens which, being divisible, allow retail investors to buy even a small percentage of the underlying asset; **greater transparency** thanks to the pillars of the blockchain (traceability and transparency) which, when applied to the management of the enormous amount of data, will make it possible in the future to make the assumptions of financial models more accurate by improving transactions; **lower costs** thanks to the automation of the exchange process. Unlike REITs, this type of operation offers significant advantages in terms of reduction of intermediaries and lower transaction fees that translate, therefore, into lower costs for both the issuer and investors.

Security Token Offerings and Regulation

Even if there are differences at the regulatory level between countries, there is uniformity in subjecting all tokens that incorporate equity and cash flow participation rights (tokens that represent an investment) to the regulations governing securities. In other words, legislators in the most advanced countries in terms of consumer protection (in the scope of this analysis reference will be considered US and European regulations) have decided to treat a security token as a form of investment, without considering the technological platform. In addition, it must be remembered that cryptocurrency exchanges, and therefore also token issuers, are subject to Know Your Customer (KYC) and Anti-Money Laundering (AML) regulations.

In the US the SEC has adopted the classification of tokens into: money-like, utility and security tokens. In order to identify whether or not an instrument belongs to the category of securities, the so-called Howey Test is used. This Test shows that an investment is a security if, following the use of an amount of money in a common investment, the investor expects to receive profits from the activity of a promoter or third party. If the asset meets the requirements of the Test, it is considered a security and subject to regulatory activity by the SEC.

Also in the case of the European Union, the distinction between security tokens, utility tokens and payment tokens is relevant for the purpose of identifying the regulatory framework of reference. The current regulations are applicable only to investment tokens (MIFID II) and payment tokens (EMD2), while the residual categories, such as utility tokens and hybrid tokens, fall into a regulatory gap (at European level) that must be filled by national regulators.

In the context of STOs, the reference legislation is still MIFID II, implemented in Italy with the Consolidated Law on Finance (TUF). Since the TUF belongs to the laws of primary rank, Consob cannot in any way derogate from the general lines dictated by the European bodies (transposed in Italy as ordinary laws) but must limit its activity to issuing clarifications regarding the areas of manoeuvre provided for by MIFID II.

Hotel Business Models

The matching between a firm's strategy and its organizational structure is a fundamental requirement for its success and, therefore, for its survival In the hospitality industry there are four main organizational models: **independent** provides for the management of the activity by a single entity that also has ownership of the asset; franchise provides that the owner of the asset (franchisee) manages the hotel according to the criteria imposed by the owner of the brand (franchisor), against payment of a franchise fee. The hotel operator remains the owner, who is responsible for the management of the hotel, either directly or through an external management company; **management agreement** provides for the owner of the real estate asset to transfer the management of the hotel to an external company, which may also be a hotel chain, in exchange for the payment of a fee. Generally, the owner is responsible for managing the asset while management is responsible for the day-to-day running of the business; **lease agreement** provides that one party grants the other the use of an asset, for a defined period of time, in return for the payment of a periodic fee. In this specific case, the owner of a property leases it to the lessee who will manage it as a hotel. The main feature of this contract is that there is no operational relationship between the parties. The operating structure chosen influences, in particular, the flexibility and adaptability of the company in facing the variability of the environment in which it operates. It is in this context that the analysis conducted by Chekitan S. Dev fits, according to which the franchising model is more widespread in more volatile markets, by virtue of the greater flexibility that this model allows. Compared to independent hotels and management agreements, franchising would seem to be the only system capable of combining the relatively low investment of the management agreement with the reduced monitoring costs, followed by leasing.

Covid-19 Impact on Lodging Industry and Asset Light Strategy

The spread of the coronavirus, with the consequent containment measures, has had a particularly violent impact on the hotel sector, especially in those countries that have adopted total or semi-total containment policies, highlighting the difficulties of Italian hotel businesses that are generally very well capitalized, precisely because of the presence of real estate assets in the balance sheet. From this point of view, one possible strategy could be asset light (AL), based on maximum reduction in the ownership of fixed assets; The vertical disintegration that follows is intended to favour flexibility over control. In the hospitality sector, an asset light model generally translates into management contracts or franchising. Today, on average, companies adopting an asset-light strategy have higher returns than competitors embracing asset-heavy models. Although the market offers

numerous examples of companies that have achieved excellent results by adopting a strategy of maximum integration In order to holistically understand the extent of the influence of this strategy, the AL model was analyzed within Dynamic Capabilities (DC) theory so in a constantly changing market. According to the DC theory, in fact, the advantage of a company lies in its ability to adapt and reconfigure its resources in an unpredictable environment. In this context, the AL strategy represents an undoubted dynamic capability since it allows the company to free up resources to invest in the development of new skills or the readaptation of those already possessed, thus improving performance, especially in complex environments where hotels provide a wide range of services. In addition, there is evidence that hotels adopting an asset light strategy are able to generate more stable cash flows, reducing the need to rely on external sources.

Asset Light Benefits

According to an analysis by BCG, companies that embrace the asset-light strategy are advantaged by the benefits derived from this strategy: **higher return on assets** - the lower the level of assets held, the higher the ratio of Net Income to Total Assets. Even if the weight of a fixed asset (considered as depreciation) is reduced (positively influencing Net Income), it must be considered that the AL firm will incur higher rental costs to take advantage of the assets used. In any case, according to the analysis, this trade off reflects positively on long-term results, particularly in hospitality; **lower volatility -** reducing expenditure on fixed assets leads to a decrease in operating leverage, aligning costs with business revenues. This effect is particularly evident in those environments where it is possible to transform the cost of using assets from fixed to variable; **greater flexibility** - the AL strategy allows hotels to reduce the sensitivity of operating cash flows, enabling better planning of investments in core activities. The final result is an increase in flexibility under reduced access to credit; **greater scale cost savings -** the AL strategy enables the achievement of cost savings from economies of scale without the need to invest in fixed costs to achieve them.

Not all researchers seem to agree on the benefits of the AL model: in 2019 Bianchi and Blal analyzed the performance (measured as EBITDA, ROE, and share returns) of six U.S. hotel chains over 16 years, finding that implementing the AL strategy has no impact in the long term. Even though the scope of these results is severely limited by the size of the analysis, the paper offers some interesting points to think about. First of all, a possible explanation proposed by the authors for the contrasting results, compared to other studies, is the need, for companies that embrace the AL strategy, to invest more resources in the coordination of the various business units. In addition, despite the need for more in-depth research, there is no doubt that, in the case of an exogenous shock such as

that caused by a crisis, an AL approach can facilitate an effective response by allowing resources to be reconfigured in such a way as to cope with such changes.

REIT Spin-Offs

REITs as a tool used by some hotel companies to pursue an asset light strategy by spinning off and separately managing real estate assets. REITs as a tool are used by some hotel companies to pursue an asset light strategy by spinning off and separately managing real estate assets. The characteristics and legal requirements that an entity must have in order to be classified as a REIT: hold at least 75% of the assets in Real Estate; obtain at least 75% of the gross income from rentals, mortgage interest or sale of real estate; distribute at least 90% of the profits as dividends to its investors each year; be managed by a Board of Directors or trustees; have a minimum of 100 investors; have a maximum of 50% of the shares held by 5 or fewer individuals during the last year.

The operation of separation of real estate assets and creation of a trust is defined as a "REIT spin-off". Through this mechanism, the parent company (OpCo) transfers the assets to a subsidiary company (SpinCo), set up according to the requirements of a REIT, in exchange for 100% of the shares of the latter. The new company is a legal entity separate from the parent company and therefore has its own corporate structure and management, which over time may also develop different policies from the OpCo. In the hospitality industry, the OpCo will be able to continue to use the transferred assets through a long-term lease. In the case of an unlisted REIT, once the spin-off has taken place, OpCo shareholders will also own SpinCo and receive dividends. In some cases, the mechanism of spin off of the REIT is associated with an IPO in order to obtain greater liquidity from the real estate assets of the hotel company, without giving up the management, more or less direct, of the real estate assets. The main reasons that accompany the spin-off of a REIT are, generally, related to increasing the profitability of the parent company: **management improvement** – Once the spin-off has taken place, the companies will behave as legally separate entities, with their own structure and growth strategy optimized on the basis of specific needs; **higher overall valuation** – The creation of a new entity can facilitate the valuation of the company that is often undervalued by investors who do not correctly perceive the value of the combined company. Through the separation, shareholders and the market should be able to determine more accurately the company's performance; **tax Benefits** – The exemption of REITs from corporate income taxes generates significant savings.

Among spin-off transactions that have occurred in recent years, two can be mentioned as examples: between 2016 and 2017, Hilton Worldwide Holdings, decided to create two spin-offs: Park Hotels & Resorts and Hilton Grand Vacations; in 2018, the La Quinta Holding group spun off its real estate properties, transferring the real estate assets to the newly formed Core Point Lodging. Although

there are virtuous examples of the pursuit of the asset light strategy through the IPO of a REIT, it is necessary to underline that this mechanism suffers from multiple limitations, including the extremely high costs of an IPO and the problems related to the size of REITs, in fact, there are no examples of listed single asset REITs, therefore the market seems to prefer funds with a larger portfolio able to guarantee greater diversification.

St. REGIS

One of the first successful examples of tokenization that has occurred in the Real Estate industry, specifically in the hospitality sector is the St. Regis luxury hotel located in Aspen, Colorado. Before starting the tokenization process, however, management's initial goal was to list the Aspen REIT in such a way that, as Mr. De Baets says, *"any investor can subscribe to become a part owner in the St. Regis Aspen Resort, one of the world's finest luxury hotels. Through this first-of-its-kind offering in the United States, we are levelling the playing field for all investors, creating equal opportunity to participate in the upside associated with a first-class resort"*. However, he costs initially budgeted have been exceeded, thus making the IPO no longer economically viable.

St. Regis Tokenization

With the IPO chapter over, management decides to pursue the project of tokenization via blockchain. On August 8, 2018, Templum Markets announced the launch of the Tokenized Asset Offering (TAO) of a digital token named "Aspen Coin". At the same time, Indiegogo officially opened the crowdfunding page to raise capital for the tokenization. Therefore, the Whitepaper containing all the information about the company, the tokenization process and the Aspen Digital Coins is published. The STO is for accredited investors only and included an offering of securities (tokens) under Regulation D 506c. Each Aspen Coin, valued at $1.00, represents an indirect interest in Aspen Digital, Inc., which has replaced Aspen REIT, Inc. on the organization chart. In October 2018, the placement ended with the achievement of the funding goal, $ 18,000,000 (with a minimum investment of $10,000), a signal of the great interest from the market.

On July 22, 2020, following the issuance of the Aspen Coins, it was decided to change the architecture of the tokens by adopting the Securitize system and to manage the exchanges on the tZERO platform; at the same time, the tokens were renamed to "ASPEN.

WHITEPAPER

The document that accompanied the Security Token Offering was published directly on Indiegogo and on Templum Markets' page. The 119-page Whitepaper is significantly shorter than the IPO Prospectus (230 pages long in total), and is divided into only 4 sections:

- Section 1: General Information about the business of Aspen Digital, Inc.
- Section 2: Management Contracts and Composition of the Board of Directors.
- Section 3: Description and composition of capital of Aspen Digital, Inc.
- Section 4: Financial Statements and Notes to Financial Statements

The first three Sections are packed into 37 pages (as opposed to 182 pages in the IPO Prospectus), and although the same topics are covered, the document is much less detailed.

DISTRIBUTIONS

Tokenholders are entitled to share in the profits of the company in the form of dividends; these dividends are normally paid (net of transaction fees) by the Depositary in the form of cash or cryptocurrency. The distribution of dividends in the form of stocks is a case provided for in the Withepaper and is always made through the issuance of digital tokens by the Depositary. As of December 31, 2019, dividends declared and paid result in (for the year 2019) $1,080,000 for tokenholders, equivalent to a 6% annual return on initial investment.

Preferred stockholders, on the other hand, received a dividend of $13,834 on an initial investment of $125,000, for an annual return of 11%.

IPO Prospectus vs Tokenization Whitepaper

The IPO Prospectus consists of 230 pages divided into 182 pages on business analysis, company structure and major risks, and 48 pages dedicated to the analysis of Aspen REIT's financial statements and associated companies. The Whitepaper, on the other hand, proves to be a more versatile document with the 182 pages on business analysis reduced to only 37, for a total of 119 pages (including financial statements). In terms of content, there are no particular differences between the two examples, although the lower level of detail regarding risks is notable. Despite this detail, I believe that the specific ASPD whitepaper contains enough information to allow investors a complete and transparent analysis, and I believe that any shortcomings that may be found can be remedied with the definition of clear and mandated guidelines.

Liquidity

The starting point of the tokenization process applied to the Real Estate market is to increase the liquidity of an investment that is traditionally associated with illiquidity.

Thanks to the data provided by tZERO, it is possible to analyze the volume of ASPD trades that occur daily on the platform as well as the bid-ask spread; the extrapolated data refer to the period August 24, 2020 - September 22, 2021, and contain information about the opening price, maximum, minimum, closing price and trading volume. The highest volume of 137,720 tokens traded in a day was reached on August 24, 2020, at an average price of $1.41 (calculated as the average between the

maximum and minimum price), with a closing price of $1.32. The average trading volume stands at 2,581 tokens traded per day over 273 days. Compared to a market in which market makers operate, buying and selling at all times to ensure market liquidity, it is clear that liquidity remains a very important issue here. However, thanks to the transition to the new tZERO platform, the number of investors participating in the project has increased from the original 13 (who bought tokens in the primary offering) to about 550 today.

An analysis of the price trend deserves a separate mention. ASPD tokens were issued at a unit value of $1.00, however, as early as the days following issuance, they reached a high of $1.33 per token on September 25, 2020. The minimum price was $0.94 on August 18, 2021. The average price at which ASPDs have traded is $1.23, a premium of 23% over the value of issuance. It can be concluded, therefore, that tokenization has achieved at least its initial purpose of overcoming the illiquidity of these instruments, even if the development of a flourishing secondary market is still a long-term objective. It is true that, although the trading volumes reached are not yet close to those of traditionally more liquid instruments, such as stocks, the success of this first example should be noted.

Covid Impact and Distressed Tokenization

As can be seen from the chart the spread of the coronavirus, and as was mentioned earlier, the containment measures have greatly impacted the hotel industry.

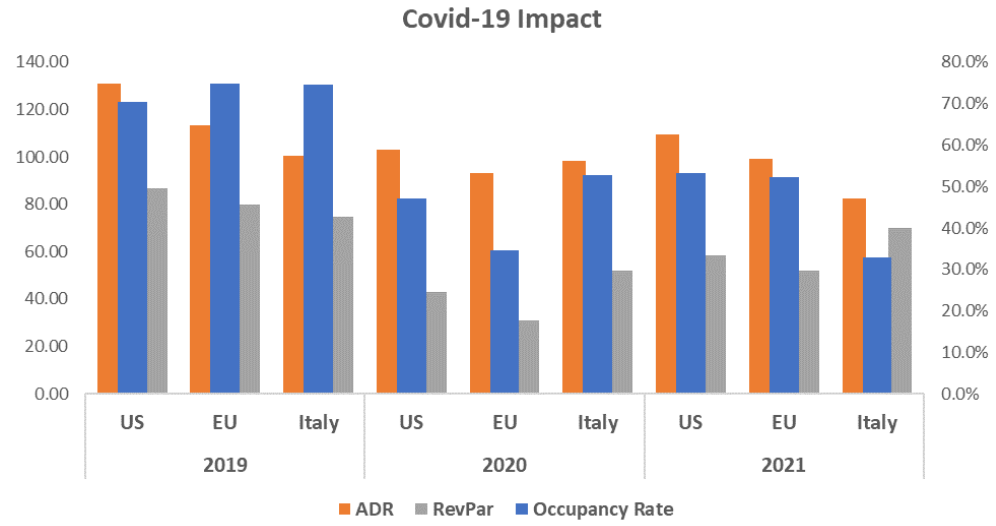

Figure 1 Covid-19 Impact on Hotel KPIs

So, the need of distressed hotels to quickly obtain liquidity to invest, without embarking on the long process that leads to the sale of the property, could indicate new opportunities for the application of tokenization. In 2019, a Brazilian company, ReitBZ, decided to apply tokenization to the Brazilian distressed real estate market. The specific business model involves identifying distressed properties, buying them at a lower value with subsequent redevelopment, and finally selling them.

Unfortunately, not a few critical issues plague the project. In particular, the Whitepaper underlines several times that there is no assurance on the completeness and truthfulness of the information and the total absence of instruments of control on the part of the investors who are totally excluded from the management without having any guarantee on the timing of the distribution of dividends. Probably, these gaps have been at the basis of the low interest aroused, despite the fact that the premises of the project were far from being a failure.

Startup Business Model

The scope of the opportunities offered by tokenization applied to the real estate market is probably clear. The purpose of this paper goes beyond the simple definition of the characteristics and processes involved in tokenization, and in this chapter, we will develop a possible practical application of this business model.

Inspired by existing applications (see the case of the St. Regis in Aspen), we have hypothesized a business model linked to the hotel sector, in which, however, the tokenized company is the one that owns the property and not, as in the case of the St. Regis, the one that manages the hotel. The reasons for this choice lie mainly in the desire to give the greatest possible stability to the cash flows generated and then distributed to the owners of the tokens; given the innovation underlying this new instrument, it was deemed appropriate to link the investment through tokens to a project that presented fewer risks than the hotel business. As we have seen, in fact, hotels provide an excellent hedge against inflation, since the revenue metrics (ADR) can be adjusted on an almost daily basis, however, they have a high correlation with the economic cycle; therefore, they are among the first businesses to suffer from an economic slowdown. In contrast, the company holding the property is guaranteed a more stable income from the hotel company's rent payments.

The proposed operating model provides for the setting up of a vehicle company (the SPV is the company which is then tokenized) - Beta company - which manages the property and holds the ownership, and of a company - Alfa company - which carries out the hotel business in the chosen property (the two companies have the same ownership, or, at most, the hotel company holds the shares of the real estate company).[167]

Beyond the construction of the model at a practical level, the results obtained highlight the profitability of the operation: the simulation of the investment in tokens foresees an annual cash flow of over 10%. A fundamental aspect, that probably escapes the quantitative analysis, lies in the possibility of being able to hold the control of the asset, without having the property. This is certainly

[167] For the assumptions underlying the model refer to the *appendix*.

an advantage, but it must, however, be contained within a clear and defined statutory perimeter, otherwise there is a risk of making the operation unclear and nullifying the positive effects of innovation.

This paper has attempted to build a logical path that would represent all the stages that have led to the implementation of the tokenization of assets in the real estate market and specifically in the hospitality sector, exposing step by step the problems and the relative solutions that plague this market.