



Transforming Commercial Real Estate



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Overview

The Development of Blockchain Technology is expected to impact major sectors of the economy; few being more important than Real Estate. Here, the potential for reducing friction in transactions and automating record-keeping tasks has major implications for the full spectrum of participants, including brokers and agents, local governments, investors and attorneys.

Potential applications for Blockchain in CRE are deemed to be countless, including, but not limited to easier and more accurate deed transfers, reduced friction in development and execution of lease agreements, improved ease and transparency in investing and even a more accurate and up-to-the-minute MLS.

More so, while some of the applications for CRE, such as a unified MLS, are expected to evolve over time, there are a multitude of significant applications for the technology that can provide tangible business value and competitive advantage immediately.

1. The Value of Blockchain in Commercial Real Estate

To understand the potential value of blockchain technology in CRE, we first need to understand the basics of what blockchain technology is and the notion of a smart contract.

Simply put, **blockchain technology amounts to a distributed ledger, in which every transaction is immediately, automatically and permanently recorded.** More so, it can be seen by other users of that blockchain. **It creates a chain of chronological data that no one party can alter, or control.** More so, the system has the ability to authenticate and track transactions in real time without the use of a third party, such as a bank.

Smart contracts, (paramount to applications that run on a blockchain network), are essentially automated self-executing contracts, with the terms of the agreement between a

buyer and a seller, being directly written into lines of computer software code. The code and the agreements contained therein, are then deployed on the blockchain network, for execution and participation by contract trading partners. So for example, a smart contract could define the items of value that parties to the contract will be exchanging and the rules or conditions by which they will be exchanged. Once the smart contract is launched on the blockchain, it prompts contract participants to execute elements of the agreement (such as uploading a proof of ownership document, or acceptance of terms), before moving to the next action required for fulfilment of the contract. These actions, including all relevant data, documents and points of acceptance are registered on the blockchain in a form that is traceable, transparent and irreversible.

As a result, Smart contracts permit trusted transactions and agreements to be carried out among disparate, anonymous parties, without the need for a central authority, legal system, or external enforcement mechanism. They render transactions traceable, transparent, and irreversible.

Applying these two concepts in the world of commercial real estate, let's now imagine every element and transaction associated with a property, including those associated with its ownership, sale, or use, become unmodifiable transactions that can be referenced and shared by any party that is looking to act on that property. So for example, the identifier for the actual property, inspection documents, liens, proof of ownership, lease agreements, registrations, payments and more, are all time stamped and registered on the blockchain when they are created.

In parallel, let's also imagine if there was a software application that could be deployed in this blockchain environment that would orchestrate the execution of any official action taken on that property, between various stakeholders and entities, waiting patiently for each condition to be met before triggering the next action. An example could be a lease agreement, or sale, or appraisal. And that once again, all these actions would be registered in a way that was immutable and traceable.

When combining these capabilities, you end up with an indisputable record of all objects, activities and individuals associated with any given property in its life, as well as a means for orchestrating and recording that activity on a forward moving basis.

This is why experts believe the technology has the potential to completely transform core CRE operations such as purchase, sale, financing, leasing and management.

2. Commercial Leasing – Challenge and Opportunity

A lease is the governing document for the basis of the tenant-landlord relationship, managing the full lifecycle of the commercial relationship between the two parties. Although these agreements are universally used, their creation, management and enforcement are far from standard or simple. As a starting point, lease preparation can range from being relatively straightforward to painstakingly complex and costly; a problem magnified because lease agreements and their terms are rarely the same. From there, the execution of the terms and provisions dictated by the lease, including rent collection, eviction and the like, need to be managed and enforced with care; something that's challenging at best when tenant and landlord are on good terms and highly problematic when complaints around breach arise.

Deloitte, in a 2017 white paper entitled “Blockchain in Commercial Real Estate”, summarized some of the common challenges associated with CRE leasing as follows:

- Inefficient property search process due to fragmented listings data
- Complexity in managing ongoing lease agreements, property operations and cash flows
- Time-consuming, paper driven, predominantly offline due-diligence processes
- Absence of real-time rich data affects management's decision making capability.

3. Commercial Leasing and Blockchain Solutions

Blockchain has the ability to add significant operational and economic advantages to the Commercial Leasing process. Some examples include, but are not limited to the following:

- ***Pre-Lease due Diligence by using smart identities***

Using blockchain-based digital identities of individuals and assets, the tenant can validate ownership from the landlord and check availability of the property.

- ***Development, Agreement and Execution of Lease Agreement***

The key terms of the agreement can be digitized, agreed upon and recorded on the blockchain, becoming the unchangeable record of consensus.

- ***Terms and conditions become the self-executing smart contract***

A smart contract can initiate payment of security deposits/advance rent through coin wallets or bank accounts using a payment interface

Possession of the property can then be automatically transferred from the lessor to the lessee.

Automated registration of the lease with respective government entities.

- ***Automated Payments and cash flow management***

Based on the terms of the agreement, the smart contract can initiate regular lease payments from the lessee to the lessor, after paying the outstanding maintenance expenses to the contractors, using the preferred mode of payment

On completion of the lease term, the smart contract can also initiate the transfer of the security deposit to the lessor

- ***Real-time data analysis***

Since payments and transactions are recorded on the blockchain along with the digital identities of individuals, properties, and organizations, the lessor can perform real-time data analyses using analytic tools.

4. Bridging market potential and today's Smart Contract development

When assessing the benefits of blockchain in the world of commercial real estate, the question is not one of if, but when. With this in mind, the pace and quality of smart contract development is a key dependency in determining the speed of consumption by market participants, looking to take advantage of the technology. This in itself has posed a significant problem to date for the following reasons:

- Hard coding of smart contracts is a time consuming process, with a single application often taking months to develop and test before putting into production.
- The development of a Smart Contract requires experienced coders and the resource pool of these people is still limited.
- The first generation of smart contract applications lack an intuitive user experience for trading partners who are participating in the execution of the contract.
- Each blockchain network has its own proprietary code base, raising the question of which to choose when investing money and resources.

5. The Solution - Introducing Aurachain

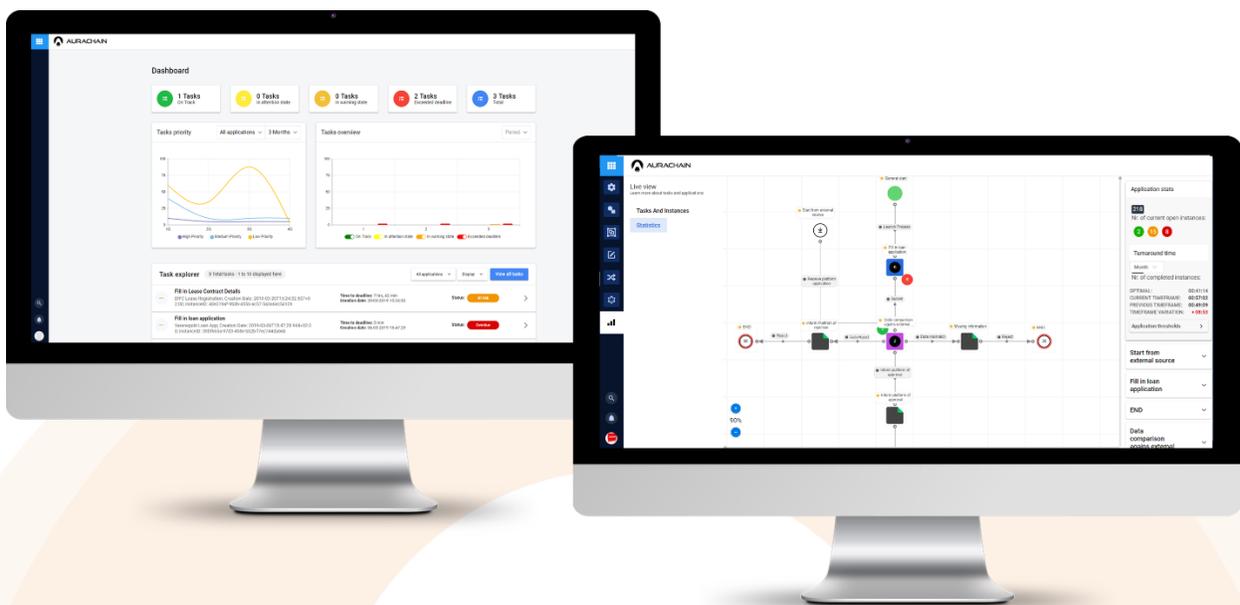
Aurachain is a no code, Smart Contract software platform, allowing for rapid and collaborative development of Smart Contracts, which can be put into production for trading.

The platform offers an end-to-end process, for building, negotiating, executing and monitoring smart contracts, without dependency on specialized software coding. Each smart

contract will be easy to track throughout its lifecycle, providing visibility to all involved parties as to what has been done and what the next steps are.

In the contract build-up and negotiation stage, users will leverage our platform, outside of the blockchain. While building the contract they will decide what activities will be executed on-chain and what activities will be executed off-chain. This ultimately gives the participants flexibility to control the cost of execution. The users can also create and customize user-friendly UI's with drag & drop components for each activity.

By doing this, they will create a smart contract environment, that can be utilized in a fashion similar to any of their daily business applications and that is cost efficient.



Aurachain was designed to overcome the current problems in smart contract development, promoting faster adoption for a wide assortment of commercial and consumer applications. Aurachain platform benefits include, but are not limited to the following:

- rapid development of smart contracts through an intuitive user experience and without the need to code
- code is automatically generated from the application, eliminating human error

- intuitive user experience for collaboratively, executing and managing contracts in flight
- users can easily configure on vs. off chain activities, optimizing the cost of each smart contract
- intuitive user experience for collaboratively, executing and managing contracts in flight
- a blockchain agnostic platform that will run on numerous platforms (such as Ethereum, HyperLedger and others) and promote interoperability

6. Aurachain in Commercial Real Estate – DIFC, a Client Use Case

DIFC is a global financial centre strategically located between the East and West, providing a stable and secure platform for businesses and financial institutions to tap into the emerging markets of the Middle East, Africa and South Asia. The Centre's internationally recognised and independent regulation, common law framework, tax-friendly regime, and enabling environment make the ideal hub to access the region's rapidly growing demand for financial and business services.

With a centralised client-servicing model, DIFC is equipped to provide a breadth of services from registration, incorporation, licensing to leasing and employee sponsorship processes, commercial property ownership, query handling, issue resolutions, expansion assistance and client induction

6.1. The Application – Lease Registration

As part of its operations, DIFC serves as a management entity for the Dubai Free Zone, facilitating and managing property centric agreements between commercial and government entities.

In looking at areas for potential improvement, DIFC targeted their lease registration process, which has had a series of long standing systemic issues, including, but not limited to the following:

- The process was long, taking up to a period of 2 days to complete.
- There was duplication of registration related data across numerous systems resulting in inaccurate, or inconsistent data on properties, owners and registrations in effect.
- Too much manual paper generation across the entire process, resulting in errors and excess cost.

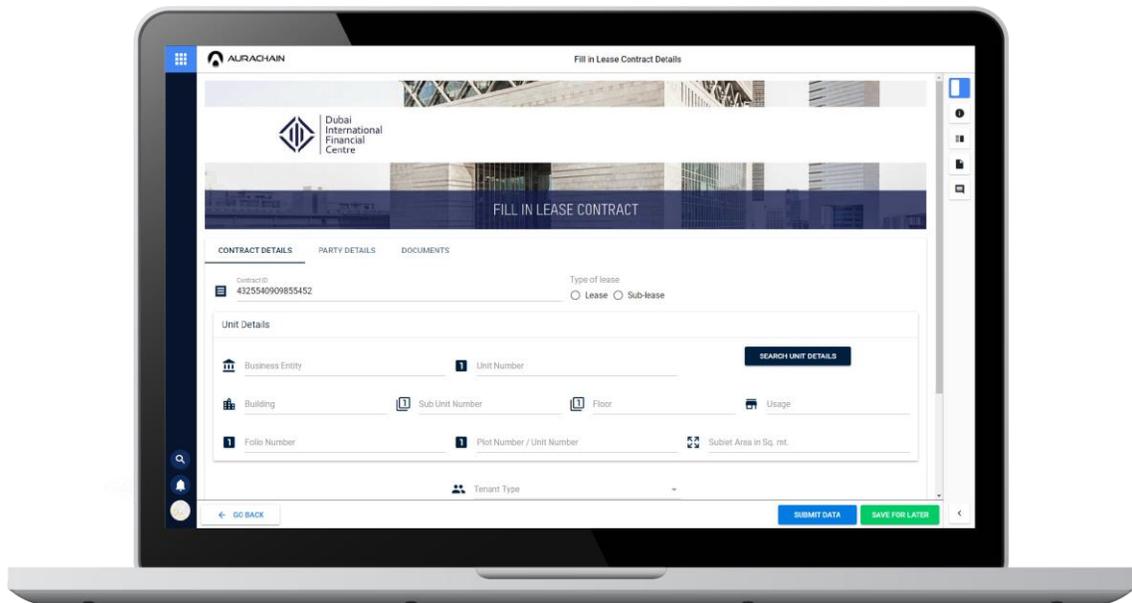
With this in mind, DIFC decided to use the Aurachain platform to automate their lease registration process.

The DIFC self-executing smart contract orchestrates and covers the full lifecycle of lease registration process, aligning the activities of landlords, tenants and subtenants, DIFC and associated government entities. It includes identification and registration with DIFC, consensus and registration of lease terms between lessor and lessee, confirmation of proof of ownership and unit availability and the official registration within the Dubai Free Zone. The system automatically generates paperwork required by local authorities and once again registers that documentation with all participating entities for permanent record.

Some of the key features of the DIFC smart contract application for lease registration include:

- On line establishment and recording of identity through 2 factor authentication
- Registers the understanding of lease terms by lessor and lessee and time stamps these associated claims
- Automatically queries the blockchain and legacy systems to validate unit availability and property ownership
- Orchestrates, documents and registers consensus between parties on lease terms
- Ability to attach original signed lease agreements between parties as part of the registration process and registers those agreements

- Automatically generates the final registration documentation upon consensus and registers all lease data to the blockchain. In parallel sends copies of registration agreements to all relevant entities



6.2. Benefits

The benefits of the Aurachain lease registration smart contract application are numerous, including some of the following:

- Overall lease registration process reduced to 15 minutes; serving HH Sheik Mohammed's goal of improving citizen and resident services.
- Eliminates f2f identity checks
- Eliminates manual checks on unit availability and the potential for errors associated therein.
- Eliminates opportunities for fraud through confirmation of proof of ownership
- Eliminates paper generation throughout the lease registration process, reducing errors and cost.

- DIFC is now creating a single point of truth through the registration of all lease related activities, entities and transactions on blockchain. These records can be leveraged for numerous other activities and services surrounding those properties and individuals.
- Creates an intuitive and pleasing user experience for all participants to interact with the system.
- The entire smart contract application, including integrations was built in less than one week