IMPACT OF BLOCKCHAIN IN REAL ESTATE INDUSTRY

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Abstract

The real estate is a market that is very vital to the economy because of its size and the devastating impacts of its failure. Within this market, there are a number of inefficiencies, for instance, illiquidity and transparency problems, slow transaction processes, personal biases and high transaction costs. Similarly, the real estate assets are characterized by immobility and heterogeneity resulting in the markets illiquidity, localization and highly segmentation, with private negotiations and high cost of transaction because of third parties. However, Blockchain offers many opportunities in the buying process, provide transparency, alleviate high transaction costs and the need for digitalization. This research will examine the potential impacts of blockchain’s implementation in the real estate and how it can alleviate the inefficiencies within the market. The result show that the pre-marketing and the due diligence are most important for implementing Blockchain.

Impact of Blockchain in Real estate Industry

Introduction

The Blockchain hype is growing and more individuals are showing interest in the benefits of the topic. Because of the characteristics of the real estate process and its inefficiencies, Blockchain technology offers solutions to improve these factors. According to Carlozo (2017), the greatest possible improvements that can be achieved are in the final stage of the buying process, the due diligence process. However, according to Chowdhary (2020), it is at the due diligence phase that transactions are mostly delayed, often intensely because of four factors, including changes in purchaser’s circumstances, change in market conditions, changes in the asset, and previously ignored or unknown inherent problems. Similarly, a due diligence process comprises of real estate issues, technical issues, accounting and tax issues and legal issues, resulting in high transaction costs. According to Chowdhary (2020), Blockchain improves the administration between different parties, providing transparency in the buying process. Therefore, this research examines this hype and tries to project both the possibilities and risks of the Blockchain in commercial real estate buying process. Through an analysis of the current buying process, this research will provide insight into the possibilities and risks of implementing Blockchain.

Literature Review

Different sources provide definitions of Blockchain. Malviya (2017) define Blockchain as an internationally distributed ledger, facilitating the fast movement of assets or resources across the world with minimal transaction fees. Such assets could be any form of value provided they are digitally representable. According to Nijland and Veuger (2019), Blockchain is a distributed database of public ledger or records of all digital events or transactions executed and shared among involved parties. In essence, this digital peer-to-peer system facilitates transactions between parties without the interference or input of a central body (Nakomoto 2008).

The Blockchain’s inventor, Satoshi Nakamoto, proposed a solution to the double-spending problem using a peer-to-peer network with the introduction of Blockchain. Nakomoto (2008) states that the network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. This not only applies to transactions but also to every form of agreement with indicated value.

Real estate is known for its lack of transparency. This characteristic has its purpose in business, largely because of the competitive advantage that non-transparency provides companies. According to Ryan Fernandes et al. (2020), because of the demand for transparency, property related information becomes more accessible. Paper form and digitized data is hosted and stored on different systems, resulting inaccuracy and inefficiency in the commercial real estate buying process. Eventually, it creates more opportunities for fraudulent or duplicitous activities. According to Veuger (2020), Blockchain can potentially to address these inaccuracies and inefficiencies. Latifi et al. (2019) argue that Blockchain could lead to a relatively more transparent real estate buying process, speed up the whole properties buying process at a lower cost and also eliminate the risks of fraudulent activities.

According to Ionascu (2019), another use of Blockchain in the buying process focusses on the inefficiencies or inadequacies of the due diligence activities. In commercial real estate transactions, significant time is often spent on the due diligence process, especially activities associated with the legal and financial review. According to Deloitte Netherlands (2016), this happens because of the use of physical documents to proof identity. Generally, the inept process of manual verification increases administrative tasks, resulting in errors and loss of information (CIOReview, 2019).

Because Blockchain evolves in the real estate sector, the areas of development will be the rising use of smart contracts, increased transparency and property ownership (Malviya, 2017). Blockchain’s ability to decrease costs, increase efficiency and remove information asymmetry increases its success potential. According to Latifi et al. (2019), its main expectations and benefits includes shorten settlement time, reduce risks and reduce operational costs.

Research Methodology

The main objective of this research was to determine which stage of the buying process Blockchain can add value for the involved parties. In order to accomplish this, the buying process itself must to be defined (Malviya, 2017). By defining the process including its stages, stakeholders can be categorized within these stages and when the classification is created, the characteristics of Blockchain are then described. These characteristics that influence both stakeholders and the buying process are formulated and stakeholders are questioned to offer insight on the factor ‘added value’ of Blockchain.

*Field Research*

Semi-structured interviews with real estate stakeholders and Blockchain experts were conducted. The first stage of the interviews focused on Blockchain experts, who offered insights into the technology’s possibilities and constraints as well as providing information to that shaped the research questions and a focus for the problem statement (Veuger, 2020). Finally, they became the base of answering the questions.

The interviews were unstructured to deliver a wider base of data input and information. The interviewees were also asked where they thought Blockchain added value to the buying process, to determine any misalignment between blockchain’s theoretical and practical usage. The interviewees met the following criteria:

* Involvement and Knowledge in various subjects of the research.
* Present function in the field consistent with subjects of the research.
* Work experience consistent with subjects of the research.
* Academic background corresponding to subjects of the research.
* The present organization of work consistent with subjects of the research.

Research Question(s)

The main research question (RQ) was ‘In which stage of the buying process of commercial real estate can Blockchain provide added value for the stakeholders involved? Several sub questions derived from RQ included the following:

SQ1: What are the features of Blockchain and to what scope is Blockchain applied in the present situation?

SQ1.1. What are the opportunities and challenges of its implementation in the commercial real estate buying process?

SQ1.2. How is it applied in the commercial real estate buying process?

SQ2: Where in this buying process can Blockchain add value for stakeholders involved in comparison with the present situation?

Research Strategy

To complete the research, different strategies would be utilized to acquire the needed data. Two different methodologies will be used to collect data, including semi-structured interviews and a literature research. The aim is for these types of data collections to create triangulation, the application of multiple data sources or methods in qualitative research to develop a full understanding of a phenomenon (Veuger, 2020). It also uses a qualitative research strategy to test validity using a convergence of data from diverse sources. There are four types of triangulation including data source triangulation, theory triangulation, investigator triangulation and method triangulation. This study used methodological triangulation, which involves using more than one strategy to gather data.

Results

*SQ1: What are the features of Blockchain and to what scope is Blockchain applied in the present situation?*

*SQ1.1: What are the opportunities and challenges of its implementation in the commercial real estate buying process?*

Different sources such as Deloitte (2016), Malviya (2017), and Ryan Fernandes et al. (2020) describe positive aspects of Blockchain, which include the following:

|  |  |
| --- | --- |
| **Positive aspects literature:** | **Positive aspects interview data:** |
| Digital records of real estate assets | Data storage security |
| Re-design of real estate processes | Reliability increase stakeholders |
| Transparent markets | Decentralized character Blockchain |
| Payment system | Transparent Markets |
| Smart contracts | Accessibility |

With these same sources, various negative aspects of Blockchain technology were identified.

|  |  |
| --- | --- |
| **Negative aspects literature:** | **Negative aspects interview data:** |
| The early stage of development | The early stage of development |
| Different applications for different purposes | Untruth in input Blockchain |
| Integration in existing business models | Security issues |
| Security vs. cost and efficiency vs. costs | Third thrust parties |
| Government regulations | Different applications for different purposes |

*SQ1.2. How is it applied in the commercial real estate buying process?*

Blockchain is already applied in real estate and all interviewees gave examples of Blockchain applications in the buying process. Both interviewee X and Y mentioned the start-up Annexum. The idea behind Annexum is, for instance, if one wants to have a superstore in the Netherlands, using a google maps card, they can see exactly where it can be advantageous in terms of costs.

Other practical implementations of Blockchain mentioned by the interviewees are:

* Blockhaus, which do property rights who run through a Blockchain.
* Blandlord meant for a house that is owned by several individuals.
* Propy,a smart contract for buildings

*SQ2: Where in this buying process can Blockchain add value for stakeholders involved in comparison with the present situation?*

The interviewee mentioned multiple changes for the adding of value in the process. Particularly, both interviewee X and Y mentioned the due diligence stage as where Blockchain can add value. The reason is that it involves the control of documents, and thus implementing Blockchain, could lead to more efficiency and transparency. This would result to reduced costs, benefiting both property seller and buyer. The seller wants to sell in a secure way with no after sale problems and the same with the buyer.

Discussion

From a holistic perspective, differences appear in the literature and the interview results on Blockchain. For instance, in sub-question one, identifying the negative and positive aspects, the results mainly focused on positive safety and security aspects, whereas the literature focused on digital records, increased transparency and process re-design. The study used multiple sources to provide general insight view on the positives, however, this provided aspect list appear not to be consistent with reality (Ionascu, 2019).

In the rest of the sub-questions, the interview data agreed with the literature review. However, the disappearance of some stakeholders, identified as a positive effect is contrary to the interview results. Question two mainly focused on the stages where Blockchain can add value. Most of the interviewees cited the due diligence phase as the stage where Blockchain can add value and this was consistent with the literature.

Conclusion

This study sought to offer insight into Blockchain, examine whether it can add value to the commercial real estate purchase process, and determine on which phase it can add value. We can draw the following conclusions from the research:

1. Blockchain’s positive aspects are largely focused on its security and safety elements. Its implementation could add value by providing secure and safe data sharing. In essence, digital records of real estate assets and processes re-design are cited as its main positive aspects.
2. From the result, the main obstacles stakeholders experienced are in the due diligence phase since it is difficult to keep documents and agreements secure. These affect the efficiency of the buying process. Because these phases involve many stakeholders, and are focused on collecting and verifying data, most time spend and costs are incurred by different parties.
3. Blockchain’s usability is influenced by specific features of the buying process, particularly the obstacles experienced by stakeholders. Controlling, storing and sharing safely is characteristic of the process which could potentially be improved. The positive aspects of Blockchain, including controlling, storing and safe sharing of data implies that it can be implemented in these phases.

Further Research

There are many suitable fields for blockchain within the real estate sector and this study has scratched only the surface. An interesting topic could be on the valuation of what blockchain has brought to the market, what its advantages are and how it could be improve. This is because Blockchain has great potential to impact the valuation market.

Limitations

The explorative nature of this study with a qualitative research design lead to relatively generalized statements and conclusions. To confirm such statements, further follow-up research would be needed for the general results. Furthermore, this research acts as the foundation for further research on this topic, which would help identify Blockchain’s possibilities within the buying process. The recommendation can be to identify a specific stakeholder and define their requirements for implementing a Blockchain.

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