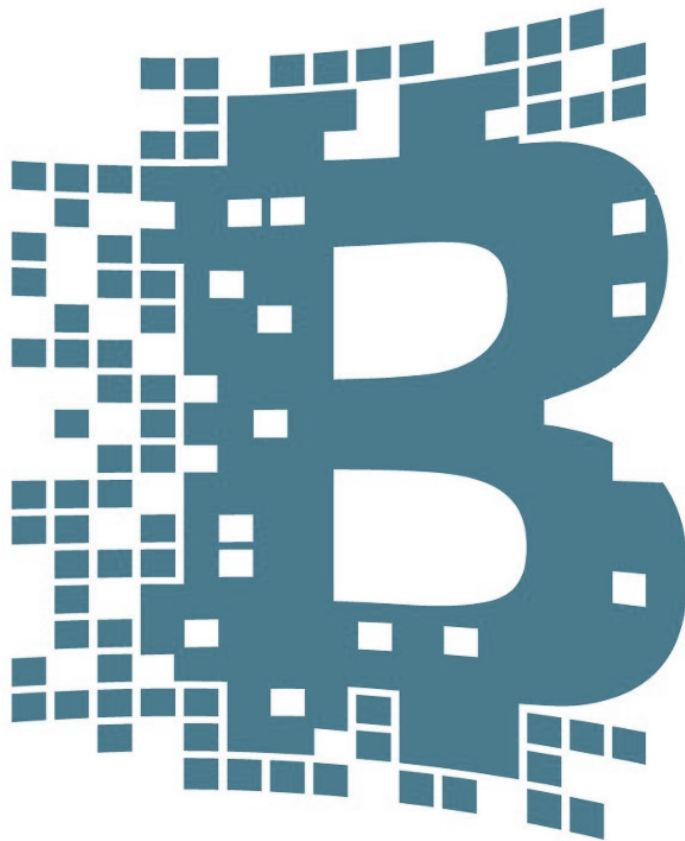


BLOCKCHAIN: TOWARDS DISRUPTION IN THE REAL ESTATE SECTOR

An exploration on the impact of blockchain technology
in the real estate management process.

REFLECTION



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September 24, 2017



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REFLECTION REPORT

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This is the reflection report of the master thesis 'Blockchain: Towards Disruption in the Real Estate Sector' by Martijn Dijkstra. To reflect on the process and outcomes within a coherent manner, each subsequent phase of the research will be discussed.

Starting point

This research started in September 2016. From the beginning the motivations for my master thesis were clear, I want to focus on a highly innovative topic. Personally I embrace the different trends which currently occur in the Real Estate Sector relating to the internet of things and big data. Blockchain even goes beyond current developments. I believe that blockchain has the potential to disrupt the real estate industry. To find out what this potential is, I embraced this subject and made it my expertise. It became a clear starting point for my research. This research goal has been present in all the assessment periods and provided the opportunity to work towards one goal from an early stage in the research. With the research goal and aim in mind, a clear problem field could be defined in an early stage.

Research Methods

Since it was clear from the beginning that there was little scientific evidence, proof, and research done for my problem field, my study would be of explorative nature. This resulted in a research strategy with a qualitative approach. Since a new theory needs to derive from the study, two different research methods were chosen in order to gather relevant data, those were desk research and interviews. Reflecting on this approach, the research methods provide a solid framework for designing the study and gathering the right data.

The research design was set in the beginning of the study and did not need any major changes during the study. The design was built around different steps, which contained theoretical clarification, interviews, analysing of the results and creating a preferred situation. It was a big advantage that the guidelines for the research and the derived design were set early on in the project. This allowed for having enough time to explore all relevant literature and providing a clear and coherent structure during my thesis.

Theoretical analysis

The desk research should have covered and explained the two main concepts of the study, namely: Blockchain technology and real estate management. There was plenty of literature available about the topic of real estate management. Although it was sometimes difficult to write down all the findings properly, this was not the biggest challenge. Desk research into blockchain was more difficult. Although the amount of research done regarding blockchain is sufficient, the main focus of these studies was on the bitcoin application, or more technical improvements for the technology. Limited research was done regarding use cases in general, and almost none for real estate. Nevertheless, the general information and knowledge about blockchain could be incorporated in the thesis. For the opportunities within real estate, most of the data relied on practical studies from large corporates or web articles. Unfortunately, this made it sometimes hard to distinguish facts from opinions.

In general, the data retrieved from literature was very useful. Regarding both topics, I faced some difficulties in scoping all the available articles. However, I did never lose sight on the main goal of the theoretical framework. Therefore, I did not lose myself in literature.

Field research

As assumed in the beginning of the thesis, the theoretical framework provided sufficient data about blockchain and real estate management. However, to project blockchain on the real estate management process, practical knowledge and verification was needed. In the beginning, I faced some difficulties regarding formulation of the right question. In consultation with my mentors, we decided to first create a hypothetical blockchain based process based on findings from literature. I believe this was a good choice, since this narrowed the scope of the interviews. Although several different stakeholders needed to be interviewed, the hypothetical process made it possible to talk about the same topics during the interviews. Based on this process it was possible to formulate the right questions. It also helped in selecting the right interviewees.

Selection of the right interviewees went very easy. I set-up a list of decision makers at the different stakeholders in the real estate management process. Since blockchain is currently hyped by the media, everybody was interested in the topic of my research. Therefore, my first preferences all agree on conducting the interviews at the first approach.

Although the hypothetical process created a relevant framework for the interviews, it was difficult to compare the results with each other. Due to variety of stakeholders, all the interviewees approached the questions from a different angle. Nevertheless, I like challenges, and also this challenge was one to overcome.

Overall, the data obtained during the interviews was very useful. Specially the questions about blockchain provided helpful and relevant data for further analysis. The downside of the interviews was found in the first set of questions. These were mainly introducing questions and clarification of the role of the interviewee. These data was helpful, hence not completely useful for this study. The division during the interviews was 50% about the role of a stakeholder and 50% on blockchain. The results of the interviews could have given more insights if the division was 30% about the role of the stakeholders and 70% on blockchain.

Empirical analysis

The most difficult part of the research was in my opinion interpreting and analysing the results. The first approach of the analysis was lacking coherency. The criteria for analysis and the relation with the theoretical framework was not written down very well. After feedback from my mentors the approach changed. The criteria for analyses were written down more clearly and the analysis were linked to the hypothetical opportunities as initiated after the theoretical framework. This was a good choice, since it allows for a more coherent and complete story.

The obtained data during the theoretical framework and the interviews was very useful for the analysis. The data verified if the hypothetical opportunities were feasible and which steps were needed to integrate them into the real estate management process. When looking to the analysis, I believe the analysis good have gone deeper into detail if one specific opportunity was chosen earlier on the process. However, this is not in line with the aim of my research. The main goal was identifying opportunities instead of creating a framework for building one specific opportunity.

Findings

The final results as presented in the thesis provided an extensive answer on the main research question. It can be argued that the results may lack in-depth clarification for how these opportunities can actually be integrated in the real estate management process. From my perspective, it was clear

from the beginning of this research that the findings should indicate several opportunities, which is done by this study. The next step is diving into the different opportunities to identify what needs to be done to fully integrated these opportunities. This allows for more in-depth knowledge about a particular topic.

Further research is needed to prove if the proposed outcomes are indeed visible and of added value for the current process. The outcomes mostly rely on findings from a limited number of stakeholders interviewed. Due to the variety of stakeholders and the timeframe of the thesis, it is not possible to interview multiple stakeholders within each category. I strongly recommend that fellow students are enhancing this topic and dive deeper into this interesting subject. More evidence is needed to validate the proposed opportunities.

Scientific relevance

The results of the thesis contribute to the current body of knowledge concerning possibilities for blockchain applications in the real estate industry. This research attempted to fill a knowledge gap regarding this topic and succeeded to do so. The study has differentiated itself by combining evidence from studies in the field of blockchain technology and real estate management. In a world where a lot is written in the media and blockchain is hyped, this study comes up with scientific prove of the possibilities for implementing blockchain technology in the real estate management process. In addition, it increases awareness for the disruption this technology might bring.

Utilization potential

The findings of this study are beneficial for a large variety of stakeholders within the real estate market, like investors, brokers, banks, advisors and governmental bodies. The respective stakeholders have showed interest in understanding the opportunities blockchain technology has to offer. These results provide insights in several opportunities blockchain technology has to offer.

Creating a building passport might be most beneficial for the real estate investor / owner. Due to this passport, he can have real time insights in the commercial and technical dossier of his assets. The results provide guidelines and motivations for further elaboration on this topic. In addition, the findings show there are some opportunities which could potentially put pressure on the traditional business models of for instance notary firms, brokers, lawyers and banks. These stakeholders could use the findings of the study to come up with a strategy to deal with this development.

Furthermore, the result provides insights in one of the most significant factors and risks in whether the blockchain industry will flourish into a mature industry, the way how government regulation unfolds. The findings can contribute to the discussion between governments and market players for developing regulation and coordination regarding blockchain technology.

Overall research process

From the beginning of the graduation project, I wanted to do something different with my research. Choosing the topic of blockchain technology was the right choice. When it comes to innovation, the first step is to establish that something is possible, then probability will occur. The following quote captures the essence of the driver of my research process:

“If you can't fly then run, if you can't run then walk, if you can't walk then crawl, but whatever you do you have to keep moving forward.” – Martin Luther King Jr

The graduation project was a long road with ups and downs, however, I did never lose track on my final goal. I am an optimistic thinker by nature, I think in opportunities instead of constraints, this helped me a lot in retaining motivation during the entire project.

Due to extensive preparations early on, I started in June with defining my research, I had a very good starting point in the beginning of the study. Therefore, during the research I did hardly suffer from any major drawbacks. The research model, as designed in P1 and P2, was leading during the whole process and fortunately I did not have to differ from this path.

By looking to the overall process, I am satisfied with the approach and steps I took. The steps taken and the methods used, provided a vast amount of data which resulted in a comprehensive set of conclusions.