

Initial Plan

THE USE OF BLOCKCHAIN TECHNOLOGY IN SMART CONTRACTS

Author: Deborah Khoo (C1461872)

Supervisor: David W Walker

Moderator: Paul L Rosin

Module Number: CM3202

Module Title: One Semester Individual Project

Credits Due: 40

Project Description

Blockchain is the technology that underpins Bitcoin. The bitcoin system was the first instance of distributed ledgers, designed for one purpose: peer-to-peer bitcoin (cryptocurrency) payments (Meunier, 2016). The reason for bitcoin's popular demand is that it allows fast, secure and global transactions, all while still keeping your privacy. It allows transaction directly between two or more parties, authenticated by mass collaboration and powered by collective self-interests, eliminating large corporations motivated by profit (Don Tapscott, 2016).

There are many more applications for blockchain with potentially large business and societal impact. One of the recently proposed applications is smart contracts. Smart contracts are protocols that facilitate, enforce, or verify the negotiation or performance of a contract, or that make a contractual clause unnecessary (Wikipedia, 2016). Smart contracts can automate many different kinds of processes and operations, most obviously payment and actions conditional on payment, which reduces or in some cases completely eliminate reliance on third-party intermediaries that provide 'trust' services. Less human intervention results in reduced costs, giving opportunities for new business models.

The aim of this project is to understand the business impact of smart contracts, and to implement a smart contract prototype. I will be working closely with Equiniti to develop a blockchain platform. Equiniti is a financial services company that has interest in commercially exploiting blockchain technology. Equiniti gave a list of proposals for using blockchain and there are two in particular that I have found interesting. One of the proposals was file storage/syncing and the other on trade finance. Once the blockchain platform is developed, smart contracts can be implemented enabling automated escrow and other complex operation on transactions.

Works Cited

Don Tapscott, A. T. (2016, May 8). *Here's Why Blockchains Will Change the World*. Retrieved from Fortune | The 21st Century Corporation: <http://fortune.com/2016/05/08/why-blockchains-will-change-the-world/>

Meunier, S. (2016, Dec 29). *Blockchain technology — a very special kind of Distributed Database*. Retrieved from Blockchain technology — a very special kind of Distributed Database: <https://medium.com/@sbmeunier/blockchain-technology-a-very-special-kind-of-distributed-database-e63d00781118#.r7366xezt>

Wikipedia. (2016, Nov). *Smart contract - Wikipedia*. Retrieved from Wikipedia: https://en.wikipedia.org/wiki/Smart_contract

Project Aims and Objectives

Throughout this project, I will be working closely with Equiniti to ensure that the system and use cases are relevant according to the business proposal.

The aims of this project are:

1. To Investigate the use of blockchain technology and smart contracts
2. To develop a use case scenario in collaboration with Equiniti
3. To implement a prototype to demonstrate the Equiniti use case

Aims: To Investigate the Use of Blockchain Technology and Smart Contracts

Objectives:

- Research on blockchain technology use cases.
- Research on the business impact of blockchain technology and smart contracts in general, and specifically the business impact for the project proposal.

Aims: To Develop a Use Case Scenario in Collaboration with Equiniti

Objectives:

- Research to understand the workflow of the proposal's existing system.
- Arrange meeting with Equiniti to clarify certain things on the blockchain proposals before deciding which to develop and to define use cases for the prototype.
 - Currently deciding between file storage/syncing and trade finance.
- Identify how blockchain technology can be implemented as a new business model.

Aims: To Implement a Prototype to Demonstrate the Equiniti Use Case

Objectives:

- Research and discuss with Equiniti which software platform will be more appropriate for developing the blockchain.
 - Currently looking at Hyperledger and Ethereum.
- After use cases are properly defined, it can be broken down into backlog items for system development.
 - For either of the proposals, the system will require a simple GUI that allows users to enter transactions into blockchain.
 - System testing should be done throughout development to ensure a working deliverable product is produced before meeting with Equiniti.
- Regular meetings with Equiniti so that challenges or changes can be easily identified and actions can be carried out accordingly throughout product development.

Work Plan

Supervisor Meetings:

Meetings are scheduled for once a week on Monday, starting on 6 February.

Meetings with Equiniti:

Arrange meetings with Equiniti for at least twice a month to ensure the system and use cases are appropriate.

Week 1 (23/1/2017):

- Perform project research and develop an initial plan.

Week 2 (30/01/2017):

- Meeting with Equiniti to clarify use case proposal and discuss software platform
- Define use cases for proposal prototype

Week 3 (06/02/2017):

- Research business impact of smart contract
- Break down use cases into backlog items to develop
- Research software platform and develop blockchain

Week 4 (13/02/2017):

- Research on business impact of smart contract
- Develop blockchain system

Week 5 (20/02/2017):

- Develop blockchain system
- Meeting with Equiniti for system review and user evaluation

Week 6 (27/02/2017):

- Develop blockchain system
- System refinement

Week 7 (06/03/2017):

- Develop blockchain system

Week 8 (13/03/2017):

- Develop blockchain system
- Meeting with Equiniti for system review and user evaluation

Week 9 (20/03/2017):

- System refinement
- Research and implement smart contract

Week 10 (27/03/2017):

- Implement smart contract

Week 11 (03/04/2017):

- Meeting with Equiniti for system review and user evaluation
- Implement smart contract

Easter (10/04/2017):

- System refinement
- Work on final report

Week 12 (24/04/2017):

- Meeting with Equiniti for final evaluation
- Produce final report

Week 13 (01/05/2017): Final report due on 05/05/2017

- Submit final report

