A Study of Blockchain in the Context of Traditional IT

Ruidong Zhang, College of Business, University of Wisconsin – Eau Claire, 105 Garfield Ave., Eau Claire, WI 54702, 715-836-3893, zhangr@uwec.edu

Blockchain technology is quickly becoming a new hot buzzword. However, is it just another hype or is it the future of IT? Does it have the potential to transform how we live our lives and how we do business globally, as some people have advocated? What are the challenges ahead before it becomes significant?

In this study, it is attempted to uncover the myth related to Blockchain by putting it in the context of traditional IT. Blockchain is not a technology that came from nowhere. It did get started with and is related to Bitcoin; but to the most fundamental or root level, it can be viewed from multiple perspectives of traditional IT. First, it is an application of modern database technology initially started with the bitcoin currency. It is fundamentally a database; and it currently aiming to become a worldwide ledger of anything this is valuable. As Blockchain is database, then all of the desirable features of modern database theory and technology can be applied to Blockchain technology.

It is an application of modern digital data encryption technology. Encryption has made data contained in a Blockchain secure and cannot be changed. Encryption enables non-repudiation where authentication and uniqueness is required. Major encryption standards like SHA-2 or SHA-3 or ECDSA are used in the Blockchain technology.

It is a value transfer protocol to carry and transport the "data" from one entity to another; the "data" here represents ownerships of properties or digital currency. This value transfer protocol is trusted by the parties that are using the protocol. Therefore it is a trust protocol by itself to enable applications where trust is needed.

It is an application of distributed networking. The Blockchain database is globally distributed and stored on multiple servers that are synchronized. Because of this nature of being distributed, the Blockchain technology has the feature of being resilient. It is available all of the time and it is reliable to access from anywhere.

Blockchain technology appears having the potential to become a general-purpose IT that can go beyond the initial context of financial industry to be used in many other industries. With so called Blockchain evolution, the trend seems clear that Blockchain's application in other industries maybe more significant than the original financial industry.

But Blockchain also faces many challenges that traditional IT has faced. These challenges include how this technology can be made user friendly; how can this technology be accepted widely; what will be the first killer application from Blockchain technology that people feel absolutely necessary or cannot live without; what will be the necessary regulatory environment needed for the technology to grow; and who will be the governing body to oversee this global deployment and use of the technology.