

## **Blockchain Technology: Its Implications and advantages for Libraries in Sri Lanka**

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### **Abstract**

*Blockchain technology is primarily used for securely transacting in a digital environment by verifying and maintaining a transaction record in a distributed, time-stamped way. Objectives of the paper to Understanding of blockchain technology and how it works in Library environment, review of literature of blockchain technology and its potential uses and discuss the connection between blockchain technology for future libraries in Sri Lanka. Library Information Science Technology Abstracts, Google Scholar, Emerald, Taylor and Francis and Scopus databases and blockchain management or blockchain technology or libraries were used as search terms. Study revealed that blockchain technology is increasingly being used in libraries for a variety of purposes, including improving metadata systems, safeguarding digital first sale rights, and peer-to-peer sharing. Further studies recommended to be held to exploit this technology to a maximum level for the benefit of libraries in Sri Lankan context.*

**Keywords:** *Blockchain management; Blockchain Technology; Libraries; Sri Lanka*

### **Introduction**

Blockchain is a relatively new technology that works as a basic system for bitcoin operations and many other technology-based operations. Bitcoin, the cryptocurrency, was first introduced in 2008 by Satoshi Nakamoto, who acts as a digital token for online transactions (Hoy, 2017). Blockchain is a method of storing data in such a way that it is difficult or impossible to alter, hack, or cheat it. Each block in the chain contains a number of transactions, and each time a new transaction takes place on the blockchain, a record of that transaction is added to the ledger of each participant. Blockchain is important since blockchain delivers immediate, shareable, and entirely transparent information kept on an immutable ledger that can only be viewed by permissioned network users.

### **Research Problem**

The technological advances have not gone unnoticed by library personnel and consumers; in fact, they have had a significant impact on them. As a result, it is critical that they comprehend emerging technologies such as "Blockchain" and how it functions. What is the best place to apply to meet users' needs? and what are the potential benefits and risks while applying blockchain technology to libraries in Sri Lanka.?

### **Research Objectives**

- Understanding of blockchain technology and how it works in Library environment
- Literature review of blockchain technology and its potential uses
- Discuss the connection between blockchain technology for future libraries in Sri Lanka

## **Research Methodology**

A literature search was conducted in January 2021 using five databases: Library Information Science Technology Abstracts, Google Scholar, Emerald, Taylor and Francis and Scopus. Time limits were set to include all the published literature, when commercial Internet service providers began to emerge, through 2021. Search terms were selected to retrieve articles on a single concept, block chain technology for libraries. A broad search of the literature was conducted first. Search terms were: [Blockchain management or blockchain technology or libraries]

## **Literature Review**

These are just a few of the studies that Blockchain exhibits as a subject of study in libraries through the search for literature around the world. Relevant studies can be found in other areas such as banking, medicine, healthcare, business management and the supply chain. Blockchain has been the subject of heated debate on various online platforms. Chen, et al (2018), Turkanovic, et al (2017), Shaples & Domingue (2016), Rooksby & Dimitrov (2017) Dominguez & Bachler (2018) and Grather et al (2018); Hirsh & Kim (2019); Li Zhang (2019); Rubel, D. (2019); Kushwah (2021). Examples of current and future potential applications of academic blockchain technologies include the issuance of valid certificates, summary evaluation of learning outcomes, student grade storage, enrollment in online course courses, and digital payments. Regarding blockchain applications in libraries, Hoy (2017) suggested that blockchain technology could easily be used to collect, store, and share authorized information. It can also be a solution to prevent copyright issues, as it produces a uniquely authenticated report that is difficult for an outsider to reproduce. Further study suggested the technique of creating a timely and verified version of magazine articles. The study also revealed that the negative side of blockchain is technological complexity and environmental sustainability. Similar barriers are shared by Jasson (2018) of ZBW Media Talk, an online blogging site. Study revealed inefficiency of library professionals in developing such innovative technology in blockchain for libraries. Law libraries have another potential to verify primary legal documents, as suggested by Debbie (2017). Coghill (2018) noted the potential of blockchain to transfer funds from libraries to vendors and to maintain electronic receipts as digital evidence. As this technology continues to accelerate in various areas of libraries and related operations, more basic capabilities of blockchain need to be proven in the coming days.

## **Conclusion**

Blockchain is a popular technology that has the ability to transform a library into a smart library. The library's mission is to collect, store, and disseminate authoritative information. This may be done in a distributed, timestamp-based fashion with the help of blockchain, which can also validate the record of creation and ownership. According to the literature review, implementation of new technology in the library or academic environment is much slower than in the tech world but exploring the latest and trending technology is the need of the hour for uplifting library culture in most countries in the world, and literature revealed that blockchain is one of the vast and unexplored areas of research with both challenges and opportunities for library professionals. Blockchain technology is being investigated in a wide range of fields, and its security features

are unparalleled. Apart from those already mentioned, the technology is ideally suited for academia and gaining potential pace in libraries. It can be used in libraries to protect user records, document library acquisitions, checking plagiarism, scholarly publishing and improve collection maintenance. Also, special collections applications may enable for the identification and discovery of unique holdings. (see Figure 1.)

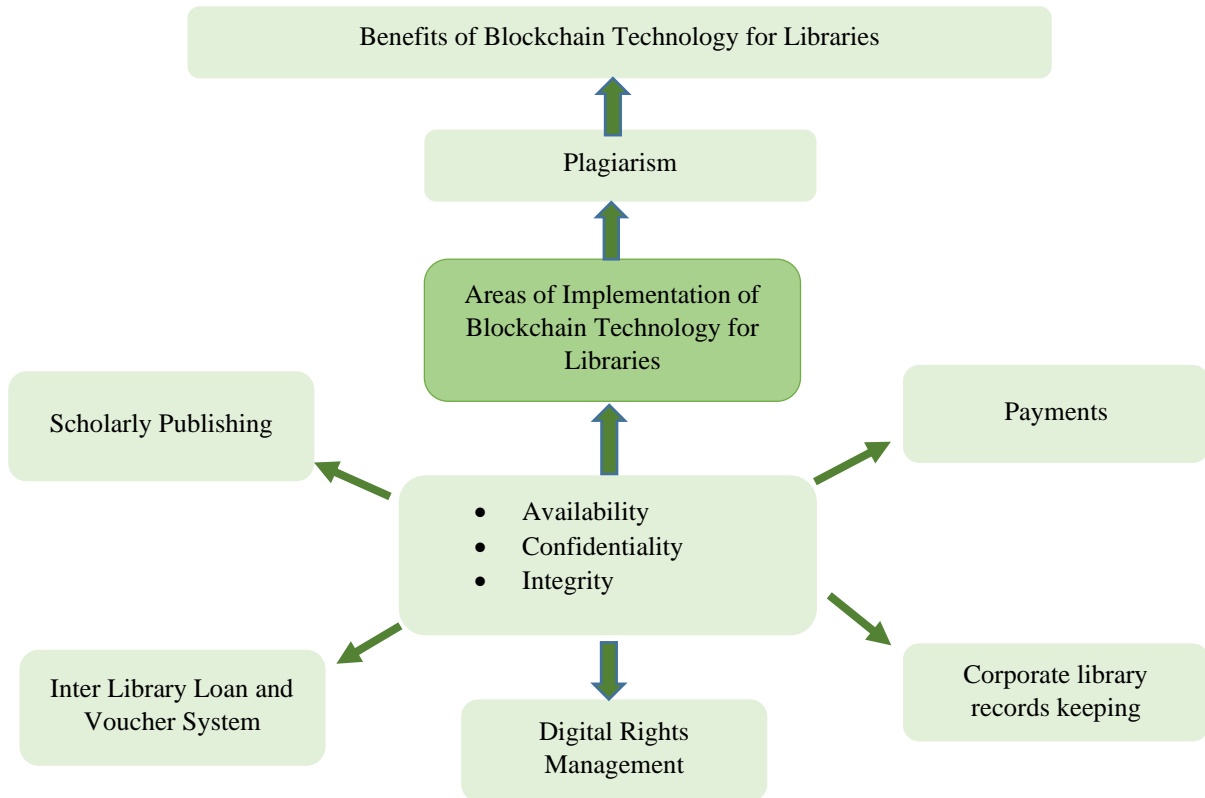


Figure 1. Mapping the Areas of Implementation of Blockchain Technology in Libraries Based on the Reviewed Literature.

**Recommendations**

Another use case that lends itself to blockchain is the scholarly record, which allows researchers to record and date their thoughts and spread knowledge. Libraries have a huge chance to leverage blockchain technology to improve user privacy, collaborate more effectively, and revolutionize how they collaborate with one other and their communities. In the near future, it is projected that the technology will be more widely used in a variety of settings, including libraries and information centers. Further studies recommended to be held to exploit this technology to a maximum level for the benefit of libraries in Sri Lankan context.

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