Photo by Piron Guillaume on Unsplash

The future of the healthcare industry with blockchain

Blockchain technology is a horizontal innovation than can be adopted across industries beyond the financial sector. Evidently, many states have been looking to adopt blockchain in their government institutions for the increased security and reliability the technology offers. The healthcare sector in particular, can benefit from blockchain technology to organize information securely and seamlessly. There has been a breadth of research using blockchain to mitigate challenges faced by the healthcare industry.

Some of the problems faced by the healthcare industry includes –

Interoperability and data sharing:
One of the biggest issues within the healthcare industry is interoperability, the transfer of data between different systems. The challenge lies in the interface technology that various organizations utilize. There is usually no common interface for hospitals to use and each are required to build their own individual information systems. It is highly likely that no one service provider has the full picture of a patient's health data; especially when patients have past records in other hospitals or clinics. With that, the flow of information is scattered across systems and this results in hinderances -- slow access to data and limits medical research and data quality. Therefore, most records end up fragmented due to the centralization of data storage. This leaves gaps in the patients' information and hospitals are unable to optimally serve patients with a complete understanding of patients' history and medical data.

Risk of information compromise
System security is crucial, especially in this sector. Healthcare data is said to be much more valuable to hackers than financial information. In 2018, Singapore's healthcare system was hit by a critical breach of personal data involving stolen personal data of 1.5 million SingHealth users. Furthermore, technology has made possible remote healthcare solutions and telehealth services. Since most medical data is retrievable digitally, confidentiality of personal files and medical data is of utmost importance and demands extensive security due to the risks that individuals may be exposed to when personal information is leaked. Therefore, the importance of information security in the healthcare industry is crucial.

Outdated systems
Furthermore, the current database system used in hospitals is more considerably resource consuming. More often than not, resources and the manpower are exhausted by IT systems that require constant updates, employee training and troubleshooting. When these systems are put in place to streamline processes, it may also backfire when technology stalls.

Blockchain as a possible solution –

Decentralized storage of data
Decentralization of data storage improves medical research and data quality through its increased security and authentication. Blockchain creates a multitude of data sources for verification of authenticity of the transaction. That being so, if any modification is to be made, it has to be made throughout all systems within the networks. This feature ensures immutability and enhanced reliability of the system.

Furthermore, blockchain creates a local database where data is collected, and participants can get real-time updates when other authorized participants adds to the database. The improved security of data sharing through audit and verification allows for parties to receive the latest, verified versions of data across departments through a secured means. This decentralized information also allows information to be consistent throughout recipients.

Privacy and high security
Blockchain's Smart Contracts can increase privacy and security for the patients. Medical records will be kept secure in patient-driven system without intermediaries. Blockchain can be utilized to give patients some autonomy over their data by giving them control over how their medical data gets shared. This offers privacy and security when only authorized parties can read or edit information. Therefore, any party looking to get data about a patient could get permission via the blockchain. Users drafting their own documents without intermediaries can also help to save on time and cost. Resulting in an overall, more efficient transaction and transfer of information.

Incentives

The platform can also be used to incentivize users through rewards. For example, rewarding patients for staying on track, following care plans or going for regular checks and concurrently can also be used as a means to keep patient data updated. The utility of such systems will increase user engagement and participation from patients and be more digitally connected with their healthcare service provider.

Standardization of systems throughout all medical institutions requires a high level of collaboration for all system infrastructures to be unified. However, within an institution, the use of this technology can be adopted to fill the gaps faced by this industry. In summary, a system that communicates information effectively can improve efficiency, reduce cost and improve the overall operations. It also can reduce the risk of human-error and implications caused by technological failures. With the use of blockchain features, there will be improvement in interoperability, the risk of information compromise will also be reduced, and this technology streamlines operational processes in this industry. Henceforth, healthcare providers would be able to facilitate better patient care.

References

Barthwal, A., 2020. *Blockchain In Healthcare: Opportunities And Challenges*. [online] Healthtechzone.com. Available at: <https://www.healthtechzone.com/topics/healthcare/articles/2020/02/24/444560-blockchain-healthcare-opportunities-challenges.htm> [Accessed 20 September 2020].

Blockgeeks. 2020. *Blockchain In Healthcare: The Ultimate Use Case?*. [online] Available at: <https://blockgeeks.com/guides/blockchain-in-healthcare/> [Accessed 20 September 2020].

McGhin, T., Choo, K., Liu, C. and He, D., 2019. Blockchain in healthcare applications: Research challenges and opportunities. *Journal of Network and Computer Applications*, 135, pp.62-75.