CAN BLOCKCHAIN MAKE RISK MANAGEMENT MORE SECURE?

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ABSTRACT

The most important aspect of risk management is education. Companies are increasingly faced with risks which are tightly linked to their financial standing. Therefore, Risk is the main cause of uncertainty in any organization. According to Whitman & Mattord (2018) "Risk finds its way into the daily operations of every organization, and if it is not properly managed, it can cause operational failures and even lead to complete collapse" (p. 251). Consequently, businesses' ability to manage risk help them to act more confidently on future business decisions. Various options on how to deal with potential problems are available to businesses which have knowledge of the risks they are facing. Risk management is important in an organization because, without it, a firm cannot possibly define its objectives for the future. If a company defines objectives without taking the risks into consideration, chances are that they will lose direction once any of these risks hit home. However, in today business environment as companies risks and uncertainty continue to evolve in complexity and intensity, could emerging technologies such as blockchains help make risk analysis more certain. According to Howrkovich and Palley (2017) "Businesses are increasingly coming into contact with a new form of data storage and transmission known as blockchain. Best known as the architecture underpinning digital currencies such as bitcoin, blockchain also soon may impact businesses' use and distribution of a host of different forms of record-keeping and datasets." This paper will analyze the risk management process and how the integration of blockchain can make assist in the risk management process more certain.

Keywords: Blockchain, Risk management, Risk analysis, Risk Assessment, Risk Appetite, Risk monitoring SHA-256,

Know the Enemy

The term risk management and risk analysis are sometimes used interchangeably, however, there is a distinction between the two. Whitman & Mattord (2017) strongly point out this distinction in the task needed to be done "Risk analysis is an approach to combining risk identification, risk assessment, and risk appetite into a single strategy, however, risk management is the process of identifying risk, assessing its relative magnitude, and taking steps to reduce it to an acceptable level" (p. 251). Moreover, Risk management can be considered as a military concept where all the communities of interest either members of the InfoSec, IT and Management/Users bear responsibility for the management of risks. "Chinese general Sun Tzu's

observation, made more than 2400 years ago, continues to have direct relevance to the philosophy of InfoSec today: Therefore, I say One who knows the enemy and knows himself will not be in danger in a hundred battles. One who does not know the enemy but knows himself will sometimes win, sometimes lose. One who does not know the enemy and does not know himself will be in danger in every battle" (p251).

Accountability for Risk Management

As defined in NIST Special Publication 800-39 (Managing Information Security Risk: Organization, Mission, and Information System View), Risk management processes include: framing risk; assessing risk; responding to risk, and monitoring risk." (p. 13). Therefore, a holistic approach is used to conduct risk management. This approach must address and integrate into every level of the business function which in large is necessary as most the risks faced by a company is closely linked to its functions which are also closely linked to its financial standing. NIST SP 800-39 define Risk management has a three-tier approach: "To integrate the risk management process throughout the organization, a three-tiered approach is employed that addresses risk at the: organization level; mission/business process level; and information system level. The risk management process is carried out seamlessly across the three tiers with the overall objective of continuous improvement in the organization's risk-related activities and effective inter-tier and intra-tier communication among all stakeholders having a shared interest in the mission/business success of the organization" (p.18). Could blockchain assist a company in risk management methodology by meeting or exceed all the elements of the risk management process? all guidance provided by either HHS, OCR, NIST and major compliance company in the IT field. support this same strategy provided by risk analysis which involve the process of identifying assets, assessing their risks, determine the level of appetite and as Lannquist (2018) explain how "Companies around the world are curious about whether blockchain technology can be used to enable new capabilities. Blockchain could help them reduce costs and improve certain processes, advance product and customer data tracking and security, increase product safety, and reduce fraud and counterfeiting."

Blockchain and Risk Management

Deloitte (2018) expounded on the fact that "Risk practitioners across sectors are very excited about blockchain's promise to help organizations minimize—and in some cases, eliminate—the risks posed by current systems. The blockchain is being viewed as the foundational technology for the future of risk management." In the risk assessment process which is one of the processes of risk management that provide the results of threat and vulnerability assessments to identify and evaluate risk in terms of likelihood of occurrence and potential adverse impact (i.e., magnitude of harm) to organizations, assets, and individuals. Blockchain cryptographic security techniques can be of great value to help mitigate the likelihood of the known threat or vulnerability affecting an asset. Blockchain as a decentralized ledger can be used to record company assets and to monitor the change made to an asset in a manner which is accurate and efficient. In case of lawsuit and audit purposes, companies will

have the peace of mind that their information is accurate. In the continuous monitoring process of risk management, blockchain is proven to be more useful, as information will be kept unaltered, companies will be able to keep track of the life of every asset accurately for either security or audit and update reasons. The main benefit of blockchain in risk management is that it can apply to all aspect of the risk framework to provide an information system methodology which is built on data which is accurate and has the record to prove the continuous monitoring and updating make to the datasets. Airmic (2018) also stated that "The blockchain is the future. It will enable businesses to transfer data quicker, more securely and at a lower cost. It is likely to become a core pillar of cyber resilience."

Conclusion

Researchers are already investing time and finances to study the application of blockchain in business operation, this technology will continue to evolve and integrate into business operation completely. The blockchain is also the technology behind cryptocurrency which is presently being used on the internet in some regard as a currency. Quora (2017) explains how "The opportunity to bypass bureaucracy and international uncertainty with Ethereum technology not only gives refugees direct access to donations but stands as a huge first step in including them in dialogue aimed at solving the international refugee crisis. The same blockchain platform used to provide financial vouchers to refugees is also working to bridge a poverty gap around the world. As we've already seen, blockchain can act as a bank-like institution for people without bank accounts." In Risk management, the benefit and opportunities are still being studied and the application will soon come to a reality. Business is primarily interested in investing in blockchain to ensure that they can achieve a measure of information security which is robust without inherent risks and unbreakable from hackers. According to Grimmes (2017) "Like everything else of value running on computers, bitcoin, other cryptocurrencies, and blockchains have come under frequent successful attacks. Hundreds of millions of dollars have been stolen, people have been cheated, and blockchains ripped off". However, bitcoins may be a bubble but blockchain is not. The technology is catching the eyes of big investors and companies, the study being undertaken are proven to help businesses operational function more secure and overall beneficial. Blockchain can definitively make risk management more certain through real-time efficiency and audit trail capabilities. Grimms (2017) explain "While investors and financial experts fight over the value of bitcoins, no one is arguing over the value and legitimacy of the blockchain. The world's biggest firms have created teams and sometimes entire new divisions dedicated to the blockchain. Companies promoting blockchain see a day when nearly every financial transaction is backed by a blockchain. Block chaining can make very complex financial transactions solvable in seconds."

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