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Assignment 6

Blockchain Assignment

Do some research on your own and write at least a 2-page response to the following questions:

1. What is blockchain? (Not to be confused with Bitcoin, blockchain is the technology)

2. Can blockchain be used to improve security?

3. How do you think this will change our idea of security infrastructure?

4. How will blockchain change our incidents and breaches in the future?

5. Conclusion - What are your opinions of blockchain and what are your predictions regarding how long it would take to implement on a global scale? (that we no longer think of it as "new" technology)

Blockchain is a group of accounts that contain data, records, or transaction logs stored in blocks and connected through their shared cryptography protection. The data can consist of two types, either tangible or intangible. Tangible can be assigned to any owned physical asset that can be transformed to cash. Things like homes, buildings, land, equipment, or inventory. Intangible applies to objects that are owned but not physical object and cannot be assigned a direct monetary value. Think of items like trademarks, patents, copyrights, software, or intellectual property. The benefit of block chain is the data in each block is distributed globally to a network of users and the contents are kept immutable. Being immutable keeps the blocks from being altered or modified increasing

peer-to-peer trust and reducing fraudulent activity, especially for financial transactions. If changes must be made, a new record must be generated and added to the transaction history.

Blockchain can be used to improve security by making it difficult to change data records and be undetected. Each block of data is linked together using cryptography and validation checks to eliminate almost any fraud. Multiple authorized users must agree to make changes to records. This counters hackers and single users from granting themselves administrator access and making changes. Storing data in blocks doesn't produce any single point of failure that could compromise large sets of data, because only small amounts of data are store in each. The most important security improvement is that cyber-crime can be captured in real-time instead of after data has been exfiltrated or manipulated. This will greatly reduce the severity of security incidents and breaches in the future.

When designing or modifying security infrastructure, the immutable distribution of blockchain fits in nicely with a zero-trust network architecture. Though all is not perfect, the internet and network attacks are still where some vulnerabilities remain. Phishing attacks to steal user credentials, man in the middle for packet capture and data theft, network intrusion to use processing power for data mining. This changes the idea of security infrastructure forcing professionals to re-evaluate how we store sensitive data, like user credentials, digital signatures access keys. Solutions for better network intrusion detection and limiting the data exfiltrated will be essential.

I think blockchain is a very useful technology, the benefits to data protection are very good. Some its key features like advanced cryptography, asset management, and data integrity are being implemented by industries separately. For example, Dropbox has a product that use digital signatures to provide improved data integrity to its customers. To have all these features combined in one software would be an addition to thwart cybercrime. Industries are sometimes slow to adapt new technologies, for many different reasons. However, with the increase in ransomware of data and cyber-crime in general, blockchain may be implemented globally as soon as 2024.