Emerald Valadez

CYSE 200T

September 18, 2024

The CIA Triad

 The CIA triad is a model designed to guide an organization's security procedures and policies. CIA refers to confidentiality, integrity, and availability.

Confidentiality involves privacy. It is the efforts of an organization to prevent unauthorized users from viewing or accessing files.

Integrity involves maintaining the consistency, accuracy and trustworthiness of data (Chai, 1). It is ensuring that data must not be changed in transit or altered by unauthorized users. It consists of maintaining consistency, trustworthiness, and accuracy of data.

Availability means data should be consistently and readily accessible for authorized users (Chai, 1). This involves keeping systems, networks, and devices up and running.

An example of the CIA triad in practice can is a bank ATM. An ATM provides confidentiality by requiring two-factor authentication, a physical card and a personal identification number (PIN) code, before allowing access to account information. It ensures integrity by accurately reflecting any transactions made via the ATM in the user's bank account. Finally, the ATM provides availability by being in public places and remaining accessible even when the bank is closed (Fruhlinger, 2024).

Beyond the CIA triad, authentication and authorization are key concepts that support these principles. **Authentication** is the process of verifying an individual's identity. It involves determining whether a user is who they claim to be. Examples can include passwords, biometric scans like facial recognition, or security tokens. **Authorization** determines who has the right to access the data. While authentication confirms who the user is, authorization ensures that their actions are appropriate for their role, thereby supporting the principles of the CIA triad by safeguarding data and maintaining system integrity.

In conclusion, the CIA triad is a widely accepted model that refers to the three most important concepts within information security-confidentiality, integrity, and availability. (Chai, 1). It helps keep an organization's data, networks, and devices safe and secure while strengthening the security posture of an organization. The CIA triad is especially important for navigating sources of vulnerabilities and helping discover what went wrong after a network has been compromised (Fasulo, 2024). Additionally, authentication and authorization further strengthen this framework by verifying identities and defining access rights. Together, these elements create a comprehensive approach to security, ensuring that organizations can effectively protect their assets.

References

Fasulo, P. (2024, June 28). *What is the CIA Triad? Definition, Importance, & Examples -*

SecurityScorecard. SecurityScorecard. https://securityscorecard.com/blog/what-

is-the-cia-triad/

Fruhlinger, J. (2024, July 12). *What is the CIA triad? A principled framework for defining*

infosec policies. CSO Online. https://www.csoonline.com/article/568917/the-cia-

triad-definition-components-and-examples.html

Chai, W. (2022, July 28) *What is the CIA Triad? Definition, Explanation, Examples*. Article