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CIA Triad Write-Up

The CIA Triad, which stands for confidentiality, integrity, and availability for legitimate users, is a model used to show the three major goals of cybersecurity. TechTarget says, “The CIA Triad provides a framework for developing information-security policies and evaluating security risks” (Hashemi-Pour & Chai, 2023).

In my words, confidentiality means protecting information from sources that are not meant to access that information. This can be from people trying to access this information, or from other systems or processes. For example, hospitals have to keep their patients' medical records confidential, and only people who are authorized to access this information (nurses, doctors, etc.) are able to see them. Confidentiality can be managed by using different types of blockers such as encryption and multifactor authentication.

Integrity, in my words, means that the sources and information that are being presented are 100% accurate and trustworthy. If the data is changed or corrupted, then it loses its integrity. For example, when my teacher puts my grade into the gradebook, it has integrity because unknown sources can’t come in and change it. Integrity is very important to cybersecurity and data management because everybody relies on accurate information to make everyday decisions. If a hacker changes someone's medical records, the doctors may act using false information and could possibly give the patient the wrong medicine.

Availability, to me, means that users who are authorized to certain information are able to access that information when needed. Availability and integrity are like two sides of the same coin. A database can have very strong integrity but can lack in availability if a user who is authorized to access the data isn't able to. For example, a bank needs to have availability so its customers can access their information regarding their financial information and make transactions.

These three branches of the CIA Triad are equally important because they each need each other to function properly. Restricted access controls can increase integrity, but make it hard for legitimate users to access their own information. Effective cybersecurity requires an equal balance of all three branches to be effective.

A real-world example of the importance of the CIA Triad is the Equifax data breach in 2017. Some hackers managed to breach Equifax's systems and obtained data on a lot of personal information. Some of this data included full names, addresses, Social Security numbers, and other information that could lead to complete identity theft or fraud. This event happened due to a lack of confidentiality because of security issues in the company's network, which allowed the hackers to infiltrate the system. Millions of people were put in danger due to the lack of adequate cybersecurity, which is why the CIA Triad is such a big thing today.

References

Hashemi-Pour, C., & Chai, W. (2023, December 21). *What is the CIA triad? Definition from TechTarget*. TechTarget. https://www.techtarget.com/whatis/definition/Confidentiality-integrity-and-availability-CIA

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