

Career Paper

By: Sahmer Ismael

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Instructor: Teresa Duvall

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Introduction

The field of cybersecurity is a vast growing field, with many different career paths that are being created, and are in need being filled, and it expands across many different disciplines. Some of the career paths in the field of cybersecurity are cyber security analyst, penetration tester, and digital forensic investigator, which all use principles of social science in their roles. However, this paper will go over the career path of a cybersecurity analyst, and how it relates to the social science principles, key concepts from class, marginalization groups, and its connection to society.

How a cybersecurity analyst uses social science principles

Cybersecurity analyst are one of the most important jobs in the field of cybersecurity, in which they work continuous hours on different task such as, monitoring & responding to security incidents, analyze security alerts, exploring potential threats, and take informative action to help mitigate risk. However, all these tasks in hand require further social science research and principles to be able to mitigate against issues that arise. For example, a cybersecurity analyst has to be able to use the principle of determinism to understand, what are the hacker's motives, and what preceding events encouraged this behavior to happen (lachcen,et al.,2020). The reason this is important for a cyber analyst to utilize, is that they understand that not every hacker has

the same motive for why they hack, and it gives cyber analyst a chance to be able to look at the issue from a interdisciplinary approach, and to consider different tactics for mitigating the issue(lachcen,et al.,2020). Furthermore, cyber analyst professionals, will constantly use a risk assessment approach to there work environments and organizations, to pose the psychological questions on what are the best ways to safeguard against, attacks that surface, critical resources, security measures, and staff awareness(lachcen,et al.,2020). This certain tactic will help to build up the security of the origination and help defend it from serious cyber-attacks. Furthermore, cyber analyst also builds up there research through a sociology lens, when it comes to building cyber awareness tactics, so they are taking other factors into consideration, such as socio-demographics, perception, and knowledge(Alsharif,et.al., 2021). This indicates that a social science lens, is needed throughout a cyber security analyst position, and is crucial for one's success.

How class concepts relate

There are many ways that are class concepts relate, to the position of a cybersecurity analyst, for instance in module 4 when we talked about human system integration. Human system integration is an important aspect to a cybersecurity analyst, due to them creating and designing a system that meets the abilities and limits of a user's mind. This approach can help to strengthen the production and reduce cognitively throughout the organization. Another example for how the class content relates, is through human factors in module 4. The reason that human factors is important for a cybersecurity analyst, is that it helps them analysis the threats that are in the organization and the ones that are outside of it to help the organization maintain safe security precautions. The third concept that relates to a cybersecurity analyst career from our course, is social forces and cybersecurity, which we talked about in module 8. The reason this issue is

important to a cyber analyst of a organization, is that helps to navigate the culture that is happening within the organization they are part of, and for them to adapt strong security awareness to match the organizations cultural setting. The fourth concept that relates to a cyber security analyst career, is the NIST cyber security framework which we talked about in module 11. The reason why, is that this framework is constantly updated, and has the best practices for a cybersecurity analyst to practice from.

How marginalized groups relate

The way in which marginalized groups relates to the career of a cybersecurity analyst, is that when creating security systems, cyber analyst have to not only take into consideration the protection of threats that the system provides (Renaud & Kemp,2022). But also, its accessibility across diverse backgrounds and people with a array of skills(Renaud & Kemp,2022). Another issue, that arises, is that those who are marginalized, may have less access to resources and technology, and support networks, which means that they are more prone to cyberattacks that occur(Renaud & Kemp,2022). Cyber security analyst must recognize these issues and work towards creating security measures, that recognize more often marginalized individuals (Renaud & Kemp,2022). Furthermore, another issue that arises, towards marginalized groups is when cybersecurity analyst create these certain security designs and fail to include marginalized groups, it can cause marginalized groups not being able to access the basic online services(Renaud & Kemp,2022).

Cyber analyst impact on society

There are many ways that cybersecurity analyst help to impact society, for instance they help to safeguard critical infrastructure, and transportation systems (Renaud & Kemp,2022). This is a big matter due to the fact, that critical infrastructure can be are hospitals, banks, and grids for

energy, in which are operating on a 24/7 basis. This can cause issues for civilians, if they are not able to access hospital or transportation for example, throughout a time of emergency, due to a cyber-attack. Furthermore, cyber analyst work to patch weaknesses and vulnerabilities throughout a network or system to make certain the hackers can't take advantage of these issues. Example of this issue would be if a hacker had passed his way through security and had access to a individuals sensitive documents such as their banking information, health information, or even their personal information.

Conclusion

In conclusion, the role of a cybersecurity analyst is needed in addressing the increasing cyber threats, that are faced by individuals, organizations, and society. However, by utilizing principles of social science, and further research, cyber analyst have a better chance at combating the new threats and issues that may occur in the field of cybersecurity. Social science principles also help cyber analyst when it comes to recognizing the motives of certain attackers and helps them to create a strategy of defense and to mitigate the issue. Cyber security analyst are big contributors to society and help, to protect critical infostructure all over the country, to help make certain that individuals, are safe and able to access critical emergency systems when they are in need.

References

Alsharif, M., Mishra, S., & AlShehri, M. (2021, September 24). Impact of human vulnerabilities on Cybersecurity. Tech Science Press. <https://www.techscience.com/csse/v40n3/44582/html>

Author links open overlay panelHarjinder Singh Lallie a, a, b, c, d, e, & AbstractThe COVID-19 pandemic was a remarkable. (2021a, March 3). Cyber security in the age of covid-19: A timeline and analysis of cyber-crime and cyber-attacks during the pandemic. Computers & Security. <https://www.sciencedirect.com/science/article/pii/S0167404821000729>

Author links open overlay panelHarjinder Singh Lallie a, a, b, c, d, e, & AbstractThe COVID-19 pandemic was a remarkable. (2021b, March 3). Cyber security in the age of covid-19: A timeline and analysis of cyber-crime and cyber-attacks during the pandemic. Computers & Security. <https://www.sciencedirect.com/science/article/pii/S0167404821000729>

Lahcen, R. A. M., Caulkins, B., Mohapatra, R., & Kumar, M. (2020, April 21). Review and insight on the behavioral aspects of cybersecurity - cybersecurity. SpringerLink. <https://link.springer.com/article/10.1186/s42400-020-00050-w#Sec4>

Renaud, K., & Coles-Kemp, L. (2022, June 22). Accessible and inclusive cyber security: A nuanced and Complex Challenge - SN Computer Science. SpringerLink. <https://link.springer.com/article/10.1007/s42979-022-01239-1>