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Chapter 5 - E-commerce Security and Payment Systems

1. **What metaphor does Zertag use to describe the idea that online, there are "no safe neighborhoods?" What does she mean?**

- Zegart's analogy of a one-lane highway running through a town or city is a metaphor for the reality that there are no safe neighborhoods on the internet. The internet is a vast and complex landscape where both good and bad actors coexist, much like a bustling city. However, unlike in the physical world, the internet lacks any centralized authority or law enforcement that can monopolize safety from criminal activity. She said cyberspace is like a single street that runs through both the best and worst parts of town, with people going about their daily lives alongside cyber criminals engaging in illegal activities. This is because the internet is built on the principle of connectivity, with no barriers or boundaries to prevent anyone from participating. It is worth noting that the internet was not designed to create safe neighborhoods. Initially developed as a military tool, the ARPANET was a network of computers designed to communicate with each other. Over time, it evolved to include universities and research institutions where trusted peers could email each other, collaborate in their work, and share data.

With the advent of the World Wide Web, the internet became commercialized, and anyone can now have access to information and resources on the internet. Unfortunately, this lack of control over who participates in the online world has created an environment where cybercrime is rampant, with bad actors taking advantage of anonymity and a lack of regulation to carry out their nefarious activities. As such, individuals and organizations must take proactive measures to protect themselves from cyber threats, although it will be difficult because sometimes, we would not even know we are already attacked. In conclusion, Zegart's metaphor of "no safe neighborhoods" illustrates the reality that there are no safe neighborhoods on the internet. It is up to individuals and organizations to take responsibility for their cybersecurity and protect themselves from the risks that come with participating in the online world.

2. **What does Zertag mean when she says that the Internet has a “huge attack surface”? How will the “Internet of Things” exacerbate this issue?**

- In today's interconnected world, nations with high levels of connectivity are especially vulnerable to cyber attacks. The United States of America, in particular, is both the most powerful and the most vulnerable country in cyberspace due to its reliance on networks and connectivity for its economy, civil society, government, and military. While the country's connectivity is a source of strength, it is also a source of weakness. Despite having the most connectivity, the US government only controls some of it, and most of the nation's critical infrastructure is owned and operated by the private sector. Therefore,

collaboration and partnership between the government and private sector are essential to defending against cyber-attacks. The "huge attack surface" of the internet, as noted by Zegart, refers to the numerous points of entry for potential cyber-attacks, ranging from personal computers and mobile devices to the vast network of interconnected devices like the Internet of Things (IoT): Home appliances, wearable technology, connected cars, healthcare devices, and many others. These devices often have less sophisticated security measures than traditional computers, making them more appealing to hackers seeking to steal sensitive information. As a result, securing this vast attack surface is becoming increasingly difficult, and new cybersecurity approaches will be necessary to protect against potential threats. Overall, the internet and cyberspace have brought us many benefits, but they have also brought us a whole new world of threats that we must learn to deal with.