Final Project: Capital One

Information Technology Incident Report and Summary

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1. **Introduction**

Cyberlaw principles, such as data protection, breach notification, and liability, serve as a regulatory framework for the secure management of sensitive information in the digital age. Various industries apply these principles including the financial sector. The financial sector is highly regulated due to the sensitivity of the data they handle. “The application of cyber principles in the financial industry ensures compliance with legal requirements, builds customer trust, and mitigates the risk of reputational and financial harm stemming from security breaches,” (SEC, 2019).

In 2019, a US-based financial services company named Capital One suffered a data breach, exposing the personal information of over 100 million customers, including their names, addresses, credit scores, and Social Security numbers. This breach was caused by a misconfigured firewall in the company’s cloud infrastructure, allowing Paige A. Thompson, a former Web Services employee to access and download the data by using administrator credentials that were obtained. The incident occurred between March and July 2019, but was discovered and reported by Capital One in July, leading to Thompson’s arrest.

Cyberlaw and Security Principles

The breach violated several cyberlaw principles, including data protection, breach notification, and liability. “Capital One failed to adequately secure and protect its customer data, leading to a breach that exposed sensitive information. Additionally, the company did not promptly notify affected customers of the breach, which is a legal requirement under various state and federal breach notification laws. As a result, the company faced significant reputational and financial harm, including a drop in its stock price, regulatory investigations, and class-action lawsuits,” (Wilson, 2019).

To address these issues, Capital One implemented various security measures, such as enhancing its cloud security, conducting internal audits, and providing free credit monitoring and identity theft protection to affected customers. “The company also faced regulatory action and paid a $80 million fine to the Office of the Comptroller of the Currency for its role in the breach,” (OCC, 2020).

The financial industry is one of the most heavily regulated industries, and cybersecurity is a critical aspect of its operations. Cybersecurity breaches can lead to significant financial losses, damage to reputation, and even legal liabilities. Therefore, the application of cyberlaw and security principles is essential to ensure the protection of financial data and assets. Here are some specific examples of how cyberlaw and security principles are applied to the financial industry:

Compliance with regulatory requirements: Financial institutions must comply with various cybersecurity regulations, such as the Gramm-Leach-Bliley Act, the Sarbanes-Oxley Act, and the Payment Card Industry Data Security Standard (PCI DSS). These regulations require financial institutions to implement specific cybersecurity controls to protect sensitive financial data and transactions.

Protecting customer data: Financial institutions are entrusted with highly sensitive customer data, such as social security numbers, bank account numbers, and credit card information. Cybersecurity measures such as encryption, access controls, and network segmentation help protect this data from unauthorized access.

Detecting and responding to threats: Financial institutions must implement robust cybersecurity monitoring and incident response programs to detect and respond to cyber threats in a timely manner. This includes conducting regular vulnerability assessments and penetration testing, as well as implementing threat intelligence and security information and event management (SIEM) solutions.

Employee training and awareness: Financial institutions must ensure that their employees are trained on cybersecurity best practices and aware of the risks associated with cyber threats. This includes regular security awareness training, phishing simulations, and enforcing strong password policies.

Summary

In summary, the application of cyberlaw and security principles serves to protect the financial industry from cyber threats and ensure the confidentiality, integrity, and availability of financial data and assets. By implementing these principles, financial institutions can maintain the trust of their customers and stakeholders, as well as comply with regulatory requirements.

1. **Case Analysis**

“Data breaches like these highlight the importance of strong cybersecurity practices, especially for cloud-based systems,” (Congresswoman Carolyn Maloney, as cited in Raval, 2019). This incident raised significant ethical and legal compliance issues within the organization and had a significant impact on customers' trust in the company.

Ethical Issues

One of the ethical issues that led to the incident was the lack of a robust cybersecurity culture within the organization. Capital One failed to implement proper security measures, such as regular security audits and training for employees, to prevent such incidents. As Reitinger (2019) notes, "Capital One was not living up to its responsibility to protect its customers' data. They had not invested the time, money, and attention that was required to keep customer’s data safe."

Legal Compliance

The legal compliance issues that led to the breach include non-compliance with the Payment Card Industry Data Security Standard (PCI DSS), which requires companies that accept credit card payments to implement proper security controls. Capital One failed to implement the required security controls, such as a properly configured firewall, which contributed to the breach. As a result, the company faced significant regulatory penalties and legal action from affected customers.

Societal and Cultural Impact

The societal and cultural impact of the breach was significant, as it eroded trust in Capital One and other financial institutions. The breach affected customers from diverse demographic groups, which raised concerns about the potential for identity theft and financial fraud. "The Capital One data breach is a reminder of how vulnerable our personal data can be and how much we rely on companies to protect it," (As Bonifacic, 2019).

1. **Incident Impact:**

Impact on Regulations

The Capital One data breach had a significant impact on the ethical and legal IT regulations of the time. The breach resulted in the exposure of the personal information of over 100 million customers, including their social security numbers, names, and addresses. The breach raised concerns about the security of cloud-based systems and highlighted the need for more stringent security measures. In response to the breach, the U.S. Congress held hearings on the security of consumer financial data and introduced the Consumer Online Privacy Rights Act to strengthen consumer privacy rights. One notable incident that happened a year prior and caused a sense of urgency for policymakers to address privacy issues is the Facebook-Cambridge Analytica scandal in 2018. The scandal involved the unauthorized harvesting of personal data from millions of Facebook users without their consent by a third-party data mining company, Cambridge Analytica. This incident raised significant concerns about privacy and data protection, as well as the ethics of data mining and targeting of individuals for political campaigns. The impact of the Facebook-Cambridge Analytica scandal on ethical and legal IT regulations was significant. The scandal led to increased scrutiny of technology companies' data privacy practices and spurred new regulations such as the European Union's General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA). As Kshetri and Voas (2019) note, "The Cambridge Analytica scandal exposed how vulnerable Facebook and other social media platforms were to abuse by data miners and hackers, creating a sense of urgency for policymakers to address the issue of privacy protection," (p. 243).

Industry Standards

The breach revealed legal compliance issues within Capital One’s organization. The organization was lacking in IT-specific alignment with regulations, particularly the cloud computing guidelines established by the National Institute of Standards and Technology (NIST). Capital One’s cloud infrastructure was not properly configured, and the organization failed to implement multi-factor authentication for accessing its data. “Capital One’s failure to properly configure its firewall permitted a known vulnerability to be exploited and resulted in the disclosure of millions of personal records,” (Federal Reserve Board, 2019). These compliance failures contributed to the data breach.

Cultural Impact

The cultural impact of the Capital One data breach was significant. Here are some potential ways in which this incident could have influenced these attitudes:

Increased skepticism and distrust of technology companies: The Capital One incident is just one in a series of high-profile data breaches that have occurred in recent years, including the Equifax breach and the Yahoo breach. These incidents may have contributed to a growing sense of skepticism and distrust of technology companies and their ability to protect sensitive personal information. As a result, people may be more cautious about sharing their personal information online and may demand greater transparency and accountability from technology companies.

Greater emphasis on data privacy: The Capital One incident may have also led to a greater emphasis on data privacy, both from a regulatory and cultural standpoint. Consumers may be more likely to scrutinize the privacy policies of companies and demand greater transparency about how their data is being used and protected. This could also lead to a greater cultural acceptance of privacy-enhancing technologies like encryption and virtual private networks (VPNs).

More awareness of cybersecurity risks: The Capital One incident, along with other high-profile data breaches, may have increased public awareness of cybersecurity risks. People may be more likely to take steps to protect their personal information online, such as using stronger passwords, enabling two-factor authentication, and avoiding suspicious links and emails. This could also lead to greater cultural acceptance of cybersecurity practices like regular software updates and anti-virus software.

Greater demand for cybersecurity professionals: As the risk of cyberattacks continues to grow, the need for skilled cybersecurity professionals is also increasing. The Capital One incident may have heightened awareness of this need and spurred more people to consider careers in cybersecurity. This could lead to a cultural shift toward valuing and prioritizing cybersecurity skills and knowledge.

Increased pressure for regulatory oversight: The Capital One incident, along with other high-profile data breaches, may have also led to increased pressure for regulatory oversight of technology companies. This could lead to greater cultural acceptance of government involvement in regulating cybersecurity practices and policies.

1. **Recommendations**

Relevant Changes to the Capital One Organization

Relevant changes to the Capital One organization that could have prevented the data breach incident include stricter data security measures, such as regular vulnerability assessments, third-party vendor oversight, and enhanced access controls. Implementing a robust incident response plan that includes frequent training and simulations for employees could also have been beneficial. Secondly, the bank should have implemented stricter access controls and segregation of duties for its cloud infrastructure. “Access controls could have limited the number of people with administrative privileges, while segregation of duties could have ensured that no single individual could make significant changes to the system without approval from others. These changes would have helped prevent the occurrence by minimizing the chances of a cyberattack and quickly detecting and mitigating any breaches that do occur,” (Mansfield & McNeal, 2020).

Ethical Guidelines

Reasonable ethical guidelines that could have helped prevent the incident and future incidents include, “requiring employees to report any suspicious activity or potential security threats, maintaining strict confidentiality and data privacy policies, and conducting regular risk assessments to identify potential vulnerabilities. A code of conduct that emphasizes the importance of data protection and ethical behavior could also have been beneficial,” (Nair, 2019).

Changes to Standards External to the Organization

Changes to standards external to the Capital One organization that might have helped prevent the incident include regulatory requirements for companies to implement stronger security measures, such as encryption and multifactor authentication, to protect sensitive data. Stricter penalties for non-compliance could also serve as a deterrent to companies that do not take cybersecurity seriously. For example, “the European Union's General Data Protection Regulation (GDPR) that became effective in May 2018, mandates companies to implement data protection measures and imposes significant fines for non-compliance of EU citizens,” (Baker & Ross, 2020). However, the GDPR did not apply to Capital One as it is an American bank, and the breach did not affect any EU citizens. Therefore, the US government should implement similar regulations to protect the personal data of American citizens.

1. **Global Considerations**

International Compliance

The incident is relevant to several international compliance standards, including the GDPR and the California Consumer Privacy Act (CCPA). The GDPR requires companies to implement data protection measures, report breaches to supervisory authorities, and notify affected individuals, among other requirements. The CCPA provides California residents with the right to access and delete their personal information, as well as the right to opt out of the sale of their data. International compliance standards that would have been relevant to the incident also include the Payment Card Industry Data Security Standard (PCI DSS) and the ISO/IEC 27001 standard. The PCI DSS provides guidelines for securing credit card transactions, while the ISO/IEC 27001 standard provides guidelines for establishing, implementing, and maintaining an information security management system (ISMS). “Compliance with these standards could have helped prevent the incident and limit its impact,” (Mansfield & McNeal, 2020).

Global Communication and Commerce

The incident had a significant impact on global communication and commerce, with consumers and businesses becoming increasingly aware of the importance of data security and privacy. The incident highlighted the need for companies to implement stronger security measures to protect their customers' data, and the potential financial and reputational damage that can result from a data breach. “In addition, the incident demonstrated the interconnectedness of global technology systems and the need for companies to take a collaborative approach to cybersecurity,” (Baker & Ross, 2020). The Capital One incident has broader implications for society, including the potential impact on individuals and the economy. The breach has exposed personal information, which can lead to identity theft and financial fraud. This can have significant impacts on individuals and families, and can also have broader economic impacts. The incident has also highlighted the need for greater collaboration and cooperation in cybersecurity, which is important for protecting individuals and society as a whole.

Global Technology Environment

The incident had a significant impact on the global technology environment, leading to increased regulatory scrutiny of companies' data protection practices and increased investment in cybersecurity technologies. “The incident also highlighted the need for global cooperation in addressing cyber threats, as attackers can operate from anywhere in the world. As a result, there have been increased efforts to develop international cybersecurity standards and frameworks to facilitate collaboration and information sharing among countries and organizations,” (Nair, 2019). The Capital One incident has brought increased awareness and education to cybersecurity, both for individuals and organizations. This incident has demonstrated that cyberattacks are a serious threat, and that everyone must take steps to protect their data and systems. The incident has also highlighted the need for more education and training in cybersecurity, which is important for preventing future breaches.

1. **Summary**

To analyze the Capital One breach, I first applied cyberlaw principles. Cyberlaw refers to the legal framework that governs the use of technology and the internet. In this case, the breach occurred due to a vulnerability in the cloud infrastructure, which is a critical component of modern technology. Therefore, it is important to ensure that the organization has adequate security measures in place to prevent such vulnerabilities. In addition, cyberlaw principles require that organizations take appropriate steps to protect customer data and inform customers in a timely manner if their data is compromised.

Next, I considered ethical needs. Ethical considerations are critical when analyzing data breaches, as they involve the privacy and security of customer data. The Capital One breach resulted in the exposure of sensitive customer information, including Social Security numbers and bank account numbers. Therefore, it is important for organizations to prioritize the protection of customer data, as this is a fundamental ethical principle.

Finally, I analyzed the legal compliance standards related to the Capital One breach. Legal compliance standards are critical for ensuring that organizations meet their legal obligations related to cybersecurity. In this case, Capital One was required to comply with various data privacy and security regulations, such as the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA). Failure to comply with these regulations can result in significant legal and financial penalties.

In summary, analyzing the Capital One breach required applying cyberlaw principles, ethical needs, and legal compliance standards. By doing so, we can gain a comprehensive understanding of the circumstances, business model, and IT issues that the organization faced. This allows us to develop effective strategies for preventing and responding to data breaches in the future.

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