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CYBERSECURITY AND PERSONAL DATA PROTECTION

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Abstract: In the contemporary landscape of rapidly evolving digital technologies, cybersecurity and the protection of personal data have emerged as critical global concerns. This article presents a comprehensive theoretical analysis of key cybersecurity concepts, identifies current threats and challenges associated with personal data breaches, and explores effective strategies for the prevention and mitigation of cybercrime. Particular attention is given to the legal, technical, and social dimensions of cybersecurity in the context of growing digitalization.

Аннотация: На фоне стремительного развития цифровых технологий кибербезопасность и защита персональных данных становятся важнейшими глобальными задачами. В данной статье проводится всесторонний теоретический анализ ключевых понятий в сфере кибербезопасности, рассматриваются актуальные угрозы и проблемы, связанные с утечками персональных данных, а также предлагаются эффективные стратегии по предотвращению и минимизации киберпреступности. Особое внимание уделяется правовым, техническим и социальным аспектам обеспечения безопасности в условиях нарастающей цифровизации.

Keywords: Cybercrime, Phishing attacks, Personal data, Business, Malware, Data protection

Ключевые слова: Киберпреступность, Фишинговые атаки, Персональные данные, Бизнес, Вредоносное программное обеспечение, Защита данных

INTRODUCTION

In today's rapidly developing digital world, cybersecurity and the protection of personal data have become some of the most pressing challenges. Cybercrime has evolved into a complex and organized threat that challenges national security, economic stability, and individual privacy on a global scale. As Professor Michael McGuire (University of Surrey) notes, “Cybercrime is no longer just about hackers in hoodies—it has become a global, organized industry that rivals the size and structure of traditional crime syndicates.” This transformation has blurred the boundaries between conventional and digital criminality, requiring new strategies and multidisciplinary approaches for mitigation. Cybersecurity refers to the system of protecting information systems, networks, software, and data from both external and internal threats. Its main objective is to ensure the integrity and confidentiality of information and data. Currently, the number and variety of attacks carried out by cybercriminals are increasing. Examples include phishing attacks, computer viruses, malicious software, credential stuffing, and drive-by downloads. The rise of cyberattacks, cybercrime, and hacking activities has fundamentally transformed traditional views on personal privacy and the security of personal data in the digital environment. These threats have led to a decline in users' trust in the online space, and maintaining information confidentiality is becoming increasingly difficult. Ensuring the inviolability of personal life is no longer solely a technical issue but has become a significant matter requiring legal, ethical, and social approaches as well. Phishing, in particular, is a type of cyberattack aimed at deceiving users into revealing confidential information (such as passwords, bank card numbers, or personal identification codes) through online communication. The term "phishing" is similar to "fishing" in English—where the attacker "casts a hook" and waits for the user to "take the bait." Phishing attacks typically follow several steps: 1. Sending a deceptive message: The attacker sends an email, SMS, or social media message that appears to be from a legitimate source (e.g., a bank, social network, or government agency). 2. Deceptive link: The message usually warns of an issue ("Your account has been blocked", "Confirm your payment", "Your password has expired") and includes a link requesting the user to log in. 3. Redirect to a fake site: When the user clicks the link, they are taken to a fake website that looks almost identical to the original one but is actually controlled by the attacker. 4. Data theft: The user enters their login credentials, password, or bank details, which are then captured by the attacker. In today's digital age, cybersecurity and personal data protection have become paramount concerns for individuals, businesses, and governments alike. With the rapid advancement of technology and the increasing reliance on digital platforms, the risk of cyber threats has escalated, making it essential to implement robust security measures to protect sensitive information. Cybersecurity refers to the practice of safeguarding systems, networks, and programs from digital attacks. These attacks are typically aimed at accessing, altering, or destroying sensitive information, extorting money from users, or disrupting normal business operations. Common threats include malware, ransomware, phishing scams, and denial-of-service attacks. The consequences of these threats can be devastating, leading to financial losses, reputational damage, and legal repercussions. Personal data protection is a critical aspect of cybersecurity that focuses specifically on safeguarding individuals' private information. This includes any data that can be used to identify a person, such as names, addresses, social security numbers, and financial information. With the proliferation of data collection practices by businesses and organizations, there is an increasing need for stringent data protection regulations to ensure that individuals' rights are respected and their information is handled responsibly. One of the most significant developments in personal data protection has been the introduction of regulations like the General Data Protection Regulation (GDPR) in the European Union. The GDPR sets forth comprehensive guidelines for the collection and processing of personal information, granting individuals greater control over their data. It mandates transparency in data handling practices and imposes heavy penalties on organizations that fail to comply with these regulations. To enhance cybersecurity and protect personal data, organizations must adopt a multi-layered approach. This includes implementing strong access controls, conducting regular security audits, and providing employee training on recognizing potential threats. Additionally, utilizing encryption technologies can help secure sensitive data both in transit and at rest. Individuals also play a crucial role in protecting their personal information. Practicing good cybersecurity hygiene—such as using strong, unique passwords, enabling two-factor authentication, and being cautious about sharing personal information online—can significantly reduce the risk of data breaches. As cyber threats continue to evolve, the importance of cybersecurity and personal data protection cannot be overstated. Both organizations and individuals must remain vigilant and proactive in their efforts to safeguard sensitive information. By fostering a culture of security awareness and adhering to best practices, we can collectively mitigate risks and protect our digital lives.

In the past, cyber attacks have been launched against governmental servers and banking systems. Such attacks can cause great damage as governmental or personal data may be compromised and get into the wrong hands. Cyber attacks have also occurred during interstate conflict and alongside conventional warfare, as was the case in Ukraine. According to the United Nations Institute for Disarmament Research (UNIDR), some 47 UN member states have active cyber programmes that give some role to the armed forces.

Another major threat is malware—malicious software designed to infiltrate, damage, or disable computers and networks. Malware can steal personal data, monitor user activity, or take control of systems for further exploitation.

Cybercrime poses a significant threat to personal data. Unauthorized access to such data can result in identity theft, financial loss, and privacy violations. For businesses, cyberattacks can lead to operational disruption, reputational damage, and regulatory penalties. Small and medium-sized enterprises (SMEs) are especially vulnerable due to limited cybersecurity resources. A single breach can compromise customer data and disrupt business continuity.

The Importance of Data Protection To combat cybercrime, robust data protection practices must be implemented. These include: Regular software updates and security patches Use of strong, unique passwords and two-factor authentication Employee training to recognize phishing attempts.

Conclusion

Cybercrime continues to evolve alongside technological advancement. While phishing attacks and malware remain the most prevalent tools used by cybercriminals, the consequences for individuals and businesses are increasingly severe. Strengthening data protection mechanisms and fostering cybersecurity awareness are crucial steps in ensuring a secure digital environment.

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