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Conference Proceeding

Technology and Innovation in Business

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Preface

It gives us great pleasure to introduce this collection of papers for publication in Book with ISBN. We are very happy to preset this book in form of proceedings based on International Conference organized by our Institute on "Technology and Innovation in Business". It provides original research work presented at International Conference on Technology and Innovation in Business held on Saturday, 13th Jan. 2024. The International conference ideas are from multiple boundaries, which excel boundaries, not only between nations, but also between disciplines, between real and virtual worlds, and between languages.

The objective of conference is to publish original research papers in book. The book is accomplished through blind peer review, submitting plagiarism report by authors through standard plagiarism software's and an elite editing team. We found that our casual deliberately interactive approach provides a forum for industrialist, academicians, research scholars and students to learn from each other while sharing their own insights, dialogue in action.

Technology and Innovation in business management could give full of vitality to the development of enterprises and it has become the trend today. This book focuses on the current development status of enterprise business management and analyzes the role of technological innovation in business management. The strategies of the application of scientific and technological innovation are increasing. The present book emphasizes to strengthen the cultivation of talents and improve business with the help of scientific and technological innovation.

We look forward to constructive feedback from readers on the papers and research articles. We thank all the contributors to this book and hope all the readers will get a broader insight about the issues and challenges before the management educational institutes in India. Please send your mails at indoglobusventurespublication@gmail.com.

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CYBER SECURITY

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Abstract:-

Cyber security is an important subject for everyone, not just corporations. It's also vital for our children to understand how to stay safe online, and the need to be aware of any dangers that might come their way. Look around today's world, and you'll see that daily life is more dependent on technology than ever before. The benefits of this trend range from near-instant access to information on the Internet to the modern conveniences provided by smart home automation technology and concepts like the Internet of Things. With so much good coming from technology, it can be hard to believe that potential threats lurk behind every device and platform. Yet, despite society's rosy perception of modern advances, cyber security threats presented by modern tech are a real danger.

A steady rise in cybercrime highlights the flaws in devices and services we've come to depend on. This concern forces us to ask what cyber security is, why it's essential, and what to learn about it. So, what is cyber security and how serious are cyber security threats these days?

1. Objective:-

Cyber security aims to eliminate the risk of cyber-attacks and guard the system, networks, data and devices from unauthorized, unwarranted exploitation.It is crucial for the organization to have cyber security measures in place. The GDPR (General Data Protection Regulation) and DPA (Data Protection Act) 2018 require organizations to implement fitting security measures to protect personal data.

2. Introduction:-

Cyber security is the practice of protecting critical systems and sensitive information from digital attacks. Also known as information technology (IT) security, cyber security measures are designed to combat threats against networked systems and applications, whether those threats originate from inside or outside of an organization. Cyber security is a discipline that covers how to defend devices and services from electronic attacks by nefarious actors such as hackers, spammers, and cybercriminals. Cyber security has been used as a catch-all term in the media to describe the process of protection against every form of cybercrime, from identity theft to international digital weapons. These labels are valid, but they fail to capture the true nature of cyber security for those without a computer science degree or experience in the digital industry.

Cisco Systems, the tech conglomerate specializing in networking, the cloud, and security, defines cyber security as "…the practice of protecting systems, networks, and programs from digital attacks. These cyber-attacks are usually aimed at accessing, changing, or destroying sensitive information; extorting money from users; or interrupting normal business processes."

3. Types of Cyber Security:-

Cyber security is a wide field covering several disciplines. It can be divided into seven main pillars:

1. Network Security

Most attacks occur over the network, and network security solutions are designed to identify and block these attacks. These solutions include data and access controls such as Data Loss Prevention (DLP), IAM (Identity Access Management), NAC (Network Access Control), and NGFW (Next-Generation Firewall) application controls to enforce safe web use policies. Advanced and multi-layered network threat prevention technologies include IPS (Intrusion Prevention System), NGAV (Next-Gen Antivirus), Sandboxing, and CDR (Content Disarm and Reconstruction). Also important are network analytics, threat hunting , and automated SOAR (Security Orchestration and Response) technologies.

2. Cloud Security

As organizations increasingly adopt cloud computing, securing the cloud becomes a major priority. A cloud security strategy includes cyber security solutions, controls, policies, and services that help to protect an organization's entire cloud deployment (applications, data, infrastructure, etc.) against attack. While many cloud providers offer security solutions, these are often inadequate to the task of achieving enterprise-grade security in the cloud. Supplementary third-party solutions are necessary to protect against data breaches and targeted attacks in cloud environments.

3. Endpoint Security

The zero-trust security model prescribes creating micro-segments around data wherever it may be. One way to do that with a mobile workforce is using endpoint security. With endpoint security, companies can secure end-user devices such as desktops and laptops with data and network security controls, advanced threat prevention such as anti-phishing and anti-ransomware , and technologies that provide forensics such as endpoint detection and response (EDR) solutions.

4. Mobile Security

Often overlooked, mobile devices such as tablets and smartphones have access to corporate data, exposing businesses to threats from malicious apps, zero-day, phishing, and IM (Instant Messaging) attacks. Mobile security prevents these attacks and secures the operating systems and devices from rooting and jail breaking. When included with an MDM (Mobile Device Management) solution, this enables enterprises to ensure only compliant mobile devices have access to corporate assets.

5. IoT Security

While using Internet of Things (IoT) devices certainly delivers productivity benefits, it also exposes organizations to new cyber threats. Threat actors seek out vulnerable devices inadvertently connected to the Internet for nefarious uses such as a pathway into a corporate network or for another bot in a global bot network. IoT security protects these devices with discovery and classification of the connected devices, auto-segmentation to control network activities, and using IPS as a virtual patch to prevent exploits against vulnerable IoT devices. In some cases, the firmware of the device can also be augmented with small agents to prevent exploits and runtime attacks.

6. Application Security

Web applications, like anything else directly connected to the Internet, are targets for threat actors. Since 2007, OWASP has tracked the top 10 threats to critical web application

security flaws such as injection, broken authentication, misconfiguration, and cross-site scripting to name a few.With application security, the OWASP Top 10 attacks can be stopped. Application security also prevents bot attacks and stops any malicious interaction with applications and APIs. With continuous learning, apps will remain protected even as DevOps releases new content.

7. Zero Trust

The traditional security model is perimeter-focused, building walls around an organization's valuable assets like a castle. However, this approach has several issues, such as the potential for insider threats and the rapid dissolution of the network perimeter.As corporate assets move off-premises as part of cloud adoption and remote work, a new approach to security is needed. Zero trust takes a more granular approach to security, protecting individual resources through a combination of micro-segmentation, monitoring, and enforcement of role-based access controls.

4. Cyber Attack:-

A cyber attack is an attempt to disable computers, steal data, or use a breached computer system to launch additional attacks. Cybercriminals use different methods to launch a cyber attack that includes malware, phishing, ransomware, man-in-the-middle attack, or other methods. A cyber attack happens when cybercriminals try to gain illegal access to electronic data stored on a computer or a network. The intent might be to inflict reputational damage or harm to a business or person, or theft of valuable data. Cyber attack can target individuals, groups, organizations, or governments.

Botnet:-

A botnet is a network of devices that has been infected with malicious software, such as a virus. Attackers can control a botnet as a group without the owner's knowledge with the goal of increasing the magnitude of their attacks. Often, a botnet is used to overwhelm systems in a distributed-denial-of-service attack (DDoS) attack.

Types of Cyber Attacks

Malware

Malware is a term that describes malicious software, including spyware, ransomware, viruses, and worms. Malware breaches a network through a vulnerability, typically when a user clicks a dangerous link or email attachment that then installs risky software.

Phishing

Phishing is the method of sending fraudulent communications that seems to come from a reputable source, usually through email. The goal is to steal or get sensitive data like credit card and login information or to install malware on the victim's machine. Phishing is an increasingly common cyber threat.

Man-in-the-middle attack

Man-in-the-middle (MitM) attacks, also called eavesdropping attacks, occur when attackers insert themselves into a two-party transaction. Once the attackers interrupt the traffic, they can filter and steal data. Two common points of entry for MitM attacks:

1. On unsecure public Wi-Fi, attackers can insert themselves between a visitor's device and the network. Without knowing, the visitor passes all information through the attacker.
2. Once malware has breached a device; an attacker can install software to process all of the victim's information.

Denial-of-service attack

A denial-of-service attack fills systems, servers, or networks with traffic that exhaust resources and bandwidth. That makes the system incapable to fulfill legitimate requests. Attackers also use multiple compromised devices to launch this attack. This is known as a distributed-denial-of-service (DDoS) attack.

SQL injection

A Structured Query Language (SQL) injection happens when an attacker inserts malicious code into a server that uses SQL and forces the server to reveal information it normally would not. An attacker could carry out a SQL injection simply by submitting malicious code into a vulnerable website search box. Zero-day exploit. A zero-day exploit hits after a network vulnerability is announced but before a patch or solution is implemented. Attackers target the disclosed vulnerability during this window of time. Zero-day vulnerability threat detection requires constant awareness.

DNS Tunneling

DNS tunneling utilizes the DNS protocol to communicate non-DNS traffic over port 53. It sends HTTP and other protocol traffic over DNS. There are various, legitimate reasons to utilize DNS tunneling. However, there are also malicious reasons to use DNS Tunneling VPN services. They can be used to disguise outbound traffic as DNS, concealing data that is typically shared through an internet connection. For malicious use, DNS requests are manipulated to exfiltrate data from a compromised system to the attacker's infrastructure. It can also be used for command and control callbacks from the attacker's infrastructure to a compromised system.

5. Cyber Safety Tips:-

Here is a list of top cyber security tips to implement is given below:

1. Keep software up-to-date
2. Avoid opening suspicious emails
3. Use Antivirus and Antimalware software on the electronic devices
4. Use a security file-sharing solution to encrypt data.
5. Use strong passwords
6. Backup your data
7. Be cautious of phishing scams
8. Use password manager
9. Use two-factor authentication
10. Don't reuse passwords

6. Advantages :-

Today's cyber security industry is primarily focused on protecting devices and systems from attackers. While the bits and bytes behind these efforts can be hard to visualize, it's much easier to consider the effects. Without cyber security professionals working tirelessly, many websites would be nearly impossible to enjoy due to ever-present denial-of-service attack attempts. Imagine not having access to Simplilearn's community of experts and certified

professionals — no more tips, tricks, and advice to help you achieve your professional goals! Without solid cyber security defenses, it would be easy to destroy modern-day essentials like the power grids and water treatment facilities that keep the world running smoothly.

Simply put, cyber security is critically important because it helps to preserve the lifestyles we have come to know and enjoy.

7. CYBER ETHICS :-

Cyber ethics are nothing but the code of the internet. When we practice these cyber ethics there are good chances of us using the internet in a proper and safer way. The below are a few of them:

1. DO use the Internet to communicate and interact with other people. Email and instant messaging make it easy to stay in touch with friends and family members, communicate with work colleagues, and share ideas and information with people across town or halfway around the world.

2. Don't be a bully on the Internet. Do not call people names, lie about them, send embarrassing pictures of them, or do anything else to try to hurt them.

3. Internet is considered as world's largest library with information on any topic in any subject area, so using this information in a correct and legal way is always essential.

4. Do not operate others accounts using their passwords.

5. Never try to send any kind of malware to other's systems and make them corrupt.

6. Never share your personal information to anyone as there is a good chance of others misusing it and finally you would end up in a trouble.

7. When you're online never pretend to the other person, and never try to create fake accounts on someone else as it would land you as well as the other person into trouble.

Always adhere to copyrighted information and download games or videos only if they are permissible. The above are a few cyber ethics one must follow while using the internet. We are always thought proper rules from out very early stages the same here we apply in cyber space.

8. Conclusion :-

Computer security is a vast topic that is becoming more important because the world is becoming highly interconnected, with networks being used to carry out critical transactions. Cyber crime continues to diverge down different paths with each New Year that passes and so does the security of the information. The latest and disruptive technologies, along with the new cyber tools and threats that come to light each day, are challenging organizations with not only how they secure their infrastructure, but how they require new platforms and intelligence to do so. There is no perfect solution for cyber crime but we should try our level best to minimize them in order to have a safe and secure future in cyber space.

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