

Emerging Cyber Security Threats in Organization

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Abstract- Cyber-security is a preventive preparation of protecting sensitive information, information systems, computers, servers, critical infrastructure, mobile devices, and computer networks from unauthorized access or hackers. Now a day digital technology takes the most significant role in growth effectiveness and efficiency in the organization. However, new technologies like mobile technologies (5G), IoT and cloud computing are Coming with new information security threats. Employees still using the old software, they didn't update the software (operating system), they use a permanent password, they are still using weak and default password (Wife name or her phone number) information security literacy and behavior end users or IT staff. They don't have awareness about proactive cyber-attacks prevention policies and procedures. Because they have not took short and long term training on most serious cyber-attacks like ransom ware, social engineering, malware, DDoS, and phishing. This article attempts to assess or explore the most common and emerging cyber security threats. That the organizations facing. An in-depth literature review is delivered. The main objective of this article is to create awareness about the emerging and the most serious cyber-attacks occurring in the organization. The findings demonstrate that cyber security preparations and trained employees are very low; hackers becoming more sophisticated.

Keywords- Cyber security, Sensitive information, Threats, Information Security

I. INTRODUCTION

“Cyber security is information system management by individuals or organizations to manage end-users' security behaviors, on the basis of personal perceived behaviors toward potential security breach in work and non-work environment.”

By the growth of technologies of internet of things (IoT) and cloud computing, surrounded employees and organizations have greatly transformed. Cyber security is one of the serious issues in organizations. Complementary the spiteful benefits of technologies, security attacks and deliberate misconduct reason great suffering to people [1]. A 'Cyber Security Breaches Survey 2018' revealed that over four in ten (43%) businesses and two in ten (19%) charities in the UK suffered a cyber-attack. The survey found that 38% of small businesses had spent nothing at all to protect themselves from cyber security threats. Information security consciousness is about ensuring that all personnel are aware of the rules and regulations regarding securing the information within organization [2].

II. CYBER-CRIME STATISTICS

25+ million records exposed every day in 2018; 300 billion passwords will be generated by 2020 60% of frauds

originate form mobile devices 90% of hackers use encryption Healthcare ransom ware attacks will quadruple Personal data is chap.(SANS 2019). From at least in or about 2017, up to and including at least about in or about September 28, 2018, LIRIANO misused administrative access provided to him as an information technology employee at a New York City-area hospital (“Hospital-1”), to log in to employee accounts, and copy other employees' personal documents, including tax records, and personal photographs onto his own workspace computer for his own personal use.

Fraudulent emails designed to make recipients hand over sensitive information, extort money or trigger malware installation on shore-based or vessel IT networks remains one of the biggest day-to-day cyber threats facing the maritime industry. These threats often carry a financial liability to one or all those involved in the maritime transportation supply chain.

III. EMERGING CYBER SECURITY THREATS

3.1 Phishing

Phishing can be well-defined as “...the fake practice of transferring emails asserting to be from reliable companies in order to persuade individuals to disclose personal information such as passwords and credit card numbers”

(Oxford Online Dictionary). This ensued to most Ethiopians are incapable to recognize phishing emails because no training is given to create awareness. The innovative inform in the news newly is about ransom ware attack called 'WannaCrypt'. Ransom ware is a kind of spiteful software planned to block access to a computer system until an amount of money is paid. A year ago, malware was normally apparent to be the highest threat facing companies. As we approach 2020, phishing attacks are the main concern. Phishing is a method of social engineering where an illegal hacker attempts to fake the user into clicking a malicious link or downloading an infected attachment or exposing sensitive or confidential information. Hackers and/or social engineering attack techniques use numerous up to date methods to gain personal information, including passwords. Five common contemporary attacks include phishing, baiting, quid pro quo, pretexting, and piggybacking [3].

3.2. Ransom ware

Ransom ware is a form of malware that locks users out of their devices in a pay-to-unlock your-device trick; it has grown by increases and limits as a threat category since 2014. Ransom ware is getting more sophisticated Consider the case of ransom ware attack on the NHS in May 2017. The attack resulted in a significant meltdown of emergency services in the UK. It is now being argued that the attack on NHS could have been prevented through due care, regular updates to NHS IT infrastructure and employee training [4]

3.3. APT Threats

Advanced Persistent Threats are a method of cyber-attack wherever an illegal attacker encryption enters an innocent organization network and remains there for a long dated hidden. Rather than imposing harm to these systems, APTs will gently be seated, theft sensitive information and other critical security information.

3.4. Distributed Denial of Service attacks

A distributed denial-of-service (DDoS) attack is a malicious effort to disturb usual traffic of a directed server, service or network by overwhelming the target or its surrounding infrastructure with a flood of Internet traffic. DoS attacks, as well as Distributed Denial of Service attacks, are the main categories of attacks that can affect availability at the network level [5].

3.5. SQL injection

A SQL (Structured Query Language) injection happens while an attacker enclosures malicious cypher into a server that uses SQL (a domain-specific language). SQL injections are only effective when security weakness exists in an application's software. Fruitful SQL attacks force a server to deliver access to data. Human error is to fault for 88% of data breaches in the UK according to research by Kroll [6].

IV. LITERATURE REVIEW

Cyber security is worried with safeguarding organization commerce continuousness and avoiding the influence of security events that threaten information of the organization. He agreed with the cyber security is vital but the threats is to demonstrate the influences contributing to difficult itself. Due to that declaration, safeguarding company information from outsiders is becoming strictly important [7].

Besides, once argued on the cyber security, here are numerous languages might be organized to the security of sensitive information. Certain terms looked are phishing, email scam, fraud etc. Refer to Mustaffa (2015), Cyber Security Malaysia has managed more than 57,000 incidents from 1997 to 2014. These incidents include intrusion, fraud, cyber harassment, spam and malicious code. This was supported by Norhayati & Adnan (2017) in their research, due to the point that cyber security is a complex, dynamic and multifaceted discipline in which no single component may be ignored, the effective management of this discipline is essential for any organization wishing to survive and thrive in the information age [8].

Insider Threat data breaks initiated through insiders can occur to a business of any size and in any business. According to the 2019 Verizon Data Breach Investigations Report, 34% of data breaches in 2018 involved internal actors. On behalf of companies nowadays, cyber-attack is universally. However for all the moneys they have completed to secure their systems and safeguard clients, businesses are still struggling to make cyber security an exciting, proactive part of strategy, operations, and culture [9].

4.1. Malicious Insider

This is when an employee who might have legitimate access to your network has malicious intentions and uses that access to intentionally leak confidential data. Employees who intentionally provide access to the network to an external attacker are also included in this threat. An insider attack includes employees from the inside, such as an authorize employee, attacking the network Insider attacks can be malicious or no malicious. An insider attack is a malicious attack perpetrated on a network or computer system by a person with authorized or privileged system access

4.2. Accidental Insider

This is when an employee makes an honest mistake that could result in a data breach. Something as simple as opening a malicious link in an email or sending sensitive information to the wrong recipient are all considered data breaches. The main cause of accidental insider data breaches is poor employee education around security and data

protection and can be avoided by practicing good security practices.

4.3. Third Party

There is a data protection risk that arises when third-party contractors or consultants are provided with permission to access certain areas of the network. They could, intentionally or unintentionally, use their permission to access private information and potentially cause a data breach. Past employees who haven't had their security access revoked could also access confidential information they are no longer entitled to and could be seen as a threat.

4.4. Social Engineers

Although this threat is technically external a social engineers aim is to exploit employees by interacting with them and then attempting to manipulate them into providing access to the network or revealing sensitive information.

V. RESEARCH DESIGN AND METHODOLOGY

Cyber security consciousness can be defined as the individual's inactive participation and better attention to sure matters and it is measured one of the key mechanisms of consciousness-raising the other being action [2]. According to the theory of planned behavior, the transformation in manners depends on the purpose of the person. There are two influences that effect intention. One factor is attitude and the other is subjective norms. So the level of intention towards an action will be higher if the person has a more positive attitude and more of a subjective norm towards the behavior.

5.1. Identify your Sensitive Data

The first step to securing your data is to identify and list all of the private information that you have stored in your network and taking note of whom in your organization has access to it. By gathering all of this information you are able to secure it properly and create a data protection policy which will help keeps your sensitive data secure [10].

5.2. Create a Data Protection Policy

A data protection policy should outline the guidelines regarding the handling of sensitive data, privacy and security to your employees. By explaining to your staff what they are expected to do when handling confidential information you reduce the risk of an accidental insider data breach.

5.3. Create a Culture of Accountability

Both employees and managers should be aware of and understand their responsibilities and the responsibilities of their team when it comes to the handling of sensitive information. By making your team aware of their responsibilities and the consequences of mistakes and negative behavior you can create a culture of accountability. This also has the more positive effect of highlighting any

issues that exist before they develop into full problems which can then be dealt with training or increased monitoring [11].

5.4. Utilize Strong Credentials & Access Control

By making use of stronger credentials, restricting logins to an onsite location and preventing concurrent logins you can make your network stronger and remove the risk of stolen credentials being used to access the network from an external location.

5.5. Review Accounts and Privileged Access

It is significant that you regularly review your user's privileges and account logins to ensure that any inactive accounts no longer have access to private information and that users don't have unnecessary access to data. This helps to reduce the risks of both accidental and malicious insider data breaches [12].

VI. CONCLUSIONS

In humble languages, outdated software means unsecured software. So, all the organizations globally must switch to the latest software. The threat of an insider data breach continues to be an issue to businesses throughout a range of sectors. However, by putting a plan in place for these insider security threats it improves the speed and effectiveness of your response to any potential issues that arise. Culture and religion also another factor to information security. Employee attitudes regarding cyber-attacks must be changed. Employee (end user) of the organization in Ethiopia does not have knowledge about cyber security and they are aware of cyber security, they are not trained. Organization should make a continuous cyber security assessment. Cyber-attacks have increased from 479 and 576 to 791 grand attacks annually during the past three successive years Information Network Security Agency (INSA, 2019). Despite the growing trends of using technologies in the country, the awareness and capacity to prevent cyber-attack is still poor; and this makes the situation even worse, Ifrah stated. Lack of awareness, legal frameworks, and poor cyber security governance, among others, are among the major problems cited. Thus increasing awareness and building the capacity of citizens and institutions in cyber security are among the next directions to be prioritized by the government and other stakeholders.

VII. RECOMMENDATIONS

- 1) Organization should train their employees.
- 2) Organization should make a continuous cyber security assessment.
- 3) Organization should turn their employees into partners.
- 4) Organization incident response plan.

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