Security and Privacy by Design: ISO/IEC 27001 Lead Auditor

This exercise aims at elaborating on audit activities. Based on several scenarios, some questions give the possibility to study use cases and elaborate on different situation discuss

SCENARIO NO: 1

Scenario: Northstorm is an online retail shop offering unique vintage and modern accessories. It initially entered a small market but gradually grew thanks to the development of the overall ecommerce landscape. Northstorm works exclusively on line and ensures efficient payment processing, inventory management, marketing tools, and shipment orders. It uses prioritized ordering to receive, restock, and ship its most popular products.

Northstorm has traditionally managed its IT operations by hosting its website and maintaining full control over its infrastructure, including hardware, software, and data administration. However, this approach hindered its growth due to the lack of responsive infrastructure. Seeking to enhance its e-commerce and payment systems, Northstorm opted to expand its in-house data centers, completing the expansion in two phases over three months. Initially, the company upgraded its core servers, point-of-sale, ordering, billing, database, and backup systems. The second phase involved improving mail, payment, and network functionalities. Additionally, during this phase, Northstorm adopted an international standard for personal identifiable information (PII) controllers and PII processors regarding PII processing to ensure its data handling practices were secure and compliant with global regulations.

Despite the expansion, Northstorm's upgraded data centers failed to meet its evolving business demands. This inadequacy led to several new challenges, including issues with order prioritization.

Customers reported not receiving priority orders, and the company struggled with responsiveness. This was largely due to the main server's inability to process orders from YouDecide, an application designed to prioritize orders and simulate customer interactions. The application, reliant on advanced algorithms, was incompatible with the new operating system (OS) installed during the upgrade.

Faced with urgent compatibility issues, Northstorm quickly patched the application without proper validation, leading to the installation of a compromised version. This security lapse resulted in the main server being affected and the company's website going offline for a week. Recognizing the need for a more reliable solution, the company decided to outsource its website hosting to an ecommerce provider. The company signed a confidentiality agreement concerning product ownership and conducted a thorough review of user access rights to enhance security before transitioning.

Based on the scenario above, answer the following question:

Which of the following situations represents a vulnerability in Northstorm's systems?

A. The new version of the application directly affected the main server

B. The need for a replacement version of the application

C. The new version of the application was not legitimate

SCENARIO NO: 2

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Which principle of information security has been affected regarding the website issue in scenario?

A. Availability, because Northstorm's website was unavailable

B. Integrity, because the new operating system did not support the application

C. Confidentiality, because Northstorm's website was hosted on the provider's servers

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Which of the following is a preventive control based on scenario?

A. Using an application that prioritized orders based on its prior knowledge

B. Signing a confidentiality agreement

C. Expanding the capacity of the in-house data center

SCENARIO NO: 4

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According to scenario, Northstorm reviewed users' access rights. What is the type and function of this security control?

A. Detective and administrative

B. Corrective and managerial

C. Legal and technical

SCENARIO NO: 5

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Based on scenario, which international standard did Northstorm adopt during the second phase of expansion?

A. ISO/IEC 27701

B. ISO/IEC 27009

C. SO/IEC 27003

SCENARIO NO: 6

After an information security incident, an organization created a comprehensive backup procedure involving regular, automated backups of all critical data to offsite storage locations. By doing so, which principle of information security is the organization applying in this case?

A. Integrity

B. Confidentiality

C. Availability

SCENARIO NO: 7

A data processing tool crashed when a user added more data to the buffer than its storage capacity allows. The incident was caused by the tool's inability to bound check arrays. What kind of vulnerability is this?

A. Intrinsic vulnerability, i.e., inability to bound check arrays, is a characteristic of the data processing tool

B. Extrinsic vulnerability, i.e., the exploit of the buffer overflow vulnerability, is caused by an external factor

C. None; buffer overflow is not a vulnerability; it is a threat

SCENARIO NO: 8

Which of the following best defines managerial controls?

A. Controls related to the management of personnel, including training of employees, management reviews, and internal audits

B. Controls related to organizational structure, such as segregation of duties, job rotations, job descriptions, and approval processes

C. Controls related to the use of technical measures or technologies, such as firewalls, alarm systems, surveillance cameras, and IDSs

SCENARIO NO: 9

What is the objective of penetration testing in the risk assessment process?

A. To conduct thorough code reviews

B. To identify potential failures in the ICT protection schemes

C. To physically inspect hardware components

SCENARIO NO: 10

Which controls are related to the Annex A controls of ISO/IEC 27001 and are often selected from other guides and standards or defined by the organization to meet its specific needs?

A. General controls

B. Strategic controls

C. Specific controls

SCENARIO NO: 11

Which of the following statements regarding threats and vulnerabilities in information security is NOT correct?

A. Vulnerabilities can be intrinsic or extrinsic, related to the characteristics of the asset or to external factors

B. Threats must exploit a vulnerability to have a negative impact on the confidentiality, integrity, and/or availability of information

C. All vulnerabilities require immediate implementation of controls regardless of corresponding threats

SCENARIO NO: 12

Which situation presented below represents a threat?

A. An employee accesses unauthorized files using their legitimate credentials

B. An organization fails to implement multi-factor authentication (MFA) for its cloud services

C. Cyber attackers infiltrated the network by exploiting a zero-day vulnerability in the organization's firewall software

SCENARIO NO: 13

A cybersecurity company implemented an access control software that allows only authorized personnel to access sensitive files. Which type of control has the company implemented in this case?

A. Preventive control

B. Detective control

C. Corrective control

SCENARIO NO: 14

Scenario: Clinic, founded in the 1990s, is a medical device company that specializes in treatments for heart-related conditions and complex surgical interventions. Based in Europe, it serves both patients and healthcare professionals. Clinic collects patient data to tailor treatments, monitor outcomes, and improve device functionality. To enhance data security

and build trust, Clinic is implementing an information security management system (ISMS) based on ISO/IEC 27001. This initiative demonstrates Clinic's commitment to securely managing sensitive patient information and its proprietary technologies.

Clinic established the scope of its ISMS by solely considering internal issues, interfaces and dependencies between activities conducted internally and those outsourced to other organizations, and the expectations of interested parties. This scope was carefully documented and made accessible. In defining its ISMS, Clinic chose to focus specifically on key processes within critical departments such as Research and Development, Patient Data Management, and

Customer Support.

Despite initial challenges. Clinic remained committed to its ISMS implementation, tailoring security controls to its unique needs. The project team excluded certain Annex A controls from ISO/IEC 27001, incorporating additional sector-specific controls to enhance security. The project team meticulously evaluated the applicability of these controls against internal and external factors, culminating in developing a comprehensive Statement of Applicability (SoA) detailing the rationale behind control selection and implementation.

As preparations for certification progressed, Brian, appointed as the team leader for the project team, adopted a self-directed risk assessment methodology to identify and evaluate the company, strategic issues, and security practices. This proactive approach ensured that Clinic's risk assessment aligned with its objectives and missions.

Based on the scenario above, answer the following question:

Does the Clinic's SoA document meet the ISO/IEC 27001 requirements for the SoA?

A. Yes, because it comprises an exhaustive list of controls considered applicable from Annex A of ISO/IEC 27001 and the other sources

B. No, because security controls selected from sources other than Annex A of ISO/IEC 27001 are included

C. No. because it does not contain the justification for the exclusion of controls from Annex A of ISO/IEC 27001

SCENARIO NO: 15

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As preparations for certification progressed, Brian, appointed as the team leader for the project team, adopted a self-directed risk assessment methodology to identify and evaluate the company, strategic issues, and security practices. This proactive approach ensured that Clinic's risk assessment aligned with its objectives and missions.

According to scenario, was the scope of Clinic's ISMS determined correctly?

A. No, Clinic should have also considered external issues

B. Yes, the scope of Clinic's ISMS was determined correctly

C. No, Clinic should have also included exclusions along with justifications for them as part of its ISMS scope