Module-6

Data and Information Management

Information and Knowledge Management

- **What is data?**
  - Data is unprocessed **facts, or figures** without any added interpretation, or analysis.
  - For **example**, Asha's salary is Rs. 10,000 per month.
- **What is information?**
  - Information is data that has been **interpreted, or analysed** so as to give it some meaning.
  - For **example**, Asha's salary is Rs. 10,000, which is 10% lesser than her peers.
- **What is knowledge?**
  - Knowledge is the **combination of information, experience and insight** that is useful for deciding a course of action.
  - For **example**, if Asha develops her writing skills, her salary can reach at par with her peers.

Knowledge required for the job of Information Security Analyst

1. Knowledge of the Organization
2. Technical Knowledge

Knowledge required for the job of Information Security Analyst

1. **Knowledge of the Organization**
   - To be able to work in any organization, an employee, **irrespective of the role** they have been assigned, **needs to know about the organization** they are working with.

Knowledge required for the job of Information Security Analyst

1. **Knowledge of the Organization**
   - This includes knowledge about the company's **policies, procedures, structure, culture, your role and responsibilities, overview of other departments, information needs of other departments, key contact points**, etc.

Knowledge required for the job of Information Security Analyst

2. Technical Knowledge

- Technical knowledge helps a person **understand a field of work.**

Knowledge required for the job of Information Security Analyst

2. Technical Knowledge

- If the Information Security Analyst does not know what a **gateway** is, or what a **hub** is, or how they **function**; how can one can be expected to install them?

Knowledge Management

- Knowledge management is the **systematic management of an organization's knowledge assets** for the **purpose of creating value, and meeting tactical and strategic requirements**.

Knowledge Management

- An Information Security Analyst usually has to deal with the following **type of data and information**, to perform their job effectively:
  - Information about the current security systems, if any.
  - Computer **hardware and software specifications**
  - Information about the **networking systems**
  - Information about the **latest security systems available in the market**
  - **Feedback of the users**
  - **Problems** faced by the users

Classification of data

- **Public data**:
- This type of data is **freely accessible to the public** (i.e. all employees/company personnel).
- It can be freely used, reused, and redistributed without consequences.

- An example might be **first and last names, job descriptions, or press releases.**

Classification of data

- **Internal-only data**:
- This type of data is **strictly accessible to internal company personnel or internal employees who are granted access**.

- This might include internal-only **memos or other communications, business plans, etc.**

Classification of data

- **Confidential data**:

- Access to confidential data requires **specific authorization** and/or clearance.
- Types of confidential data might include **Social Security numbers, cardholder data.** Usually, confidential data is protected by laws like HIPAA and the PCI DSS.

HIPAA stands for the Health Insurance Portability and Accountability Act

PCI DSS stands for Payment Card Industry Data Security Standard.

Classification of data

- **Restricted data**:
- Restricted data includes data that, if compromised or accessed **without authorization**, which could lead to criminal charges and massive legal fines or cause irreparable damage to the company.

- Examples of restricted data might include **branded information or research** and data protected by state and federal regulations.

How to Manage Data/Information Effectively?

- **What is a policy?**
  - A policy is a statement of agreed intent that clearly sets out an **organization's views with respect to a particular matter.**
- **What is a procedure?**
  - A procedure/practice is a **clear step-by-step method for implementing an organization's policy**, or responsibility.

How to Manage Data/Information Effectively?

- Why does an Information Security Analyst need to understand the organization's policies and procedures?
  - It gives a **framework for actions** to get on with their job.
  - It helps **understand the expectations** out of him/her. In other words, it helps one understand **their role and responsibilities**.
  - It helps comply with the **legal requirements**.
  - It helps understand the **quality standards** set out by the organization.

How to Manage Data/Information Effectively?

- **Understanding the organization's policies for recording and sharing information:**
  - **Not only** does an Information Security Analyst need to **understand the organization's policies** and procedures for the type of data and information that you can use, but also the **procedures for how to use them**. Such policies clearly lay out the formats in which the data has to be stored, when and where.
  - Also, the way it has to be shared. For example, an organization could have a policy to record every system testing data in an online format that can be accessed by the senior management any time.

How to Manage Data/Information Effectively?

- **Understanding the procedures for updating data in appropriate formats**
  - Just like organizations have policies and procedures for using, storing and sharing data, they have **policies for updating data in the appropriate formats**.
  - For example, the Information Security Analyst may get feedback in various forms like verbal, written, through feedback forms, etc. but the organization policy could state that all **feedback should be up-to-date in a pre-specified format.**

How to Manage Data/Information Effectively?

- **Understanding the knowledge management culture of your organisation**
  - Each organisation has a **culture of managing its data and information**, which basically stems from its policies, procedures and of course, its people, especially the senior management.
  - For **example**, if your line manager gives importance to maintaining data records in specific formats, you too would take it seriously, and vice-versa.

How to Manage Data/Information Effectively?

- **Identifying the appropriate people to take advice from and to report to with appropriate data/ information**
  - The kind of data and information that an Information Security Analyst deals with is sensitive in nature, so one needs to be aware of the company policy about whom one can share the data with, and whom one can take advice from.
  - For example, **the R&D division of a company** may not want to share the details of its security systems with heads of other departments, so as an Information Security Analyst, you will have to be careful about that.

How to Manage Data/Information Effectively?

- **Understanding the importance of validating information before use**
  - As an Information Security Analyst, you will be inundated with lots of data and information.
  - However, you need to validate that data for correctness and usefulness before using it. This is especially true of information accessed from the Internet.
  - For example, one of your colleagues may have told you about a security system that your competitor is using.
  - Instead of copying that, you should validate that information and study whether it suits your organization's needs, or not.

How to Manage Data/Information Effectively?

- **Understanding the importance of getting data/ information reviewed by others**
  - An Information Security Analyst cannot be expected to validate all information by oneself, so one can take help from colleagues.
  - However, one has to be careful that one gets the data reviewed only by authorized persons who have the domain knowledge.

Understanding the scope of work and data requirements

- An organisation has unlimited amounts of data. Therefore, an Information Security Analyst needs to understand **what the scope of work is.**

Understanding the data/ information that you may need to provide

- The Information Security Analyst needs to be aware of the data and information that comes under their purview. Time and again, one may need to share some data and information with peers, or senior managers

Understanding the templates/ formats

- An Information Security Analyst should have an understanding of the various templates and formats that your organisation uses for data storage and sharing.

Understanding the techniques for obtaining data/ information

- The Information Security Analyst should have knowledge about the various data access techniques that are available in the market, and the company policy for the same.

Ensuring the quality of data

- The Information Security Analyst should always ensure that the data and information provided by him/her meets the quality standards set by the organisation.
- Parameters
    - Error-free
    - Up-to-date
    - In the specified format
    - Easy to retrieve
    - During retrieval, data shouldn’t get altered
    - Complete
    - Consistent
    - Timely availability
    - Valid
    - Relevant

Understanding the process for data analysis

- Data analysis refers to the process of manipulating data to get meaningful results.
- The Information Security Analyst should be careful to carry out rule-based analysis on the data, or information.
- Tools for data analysis:
  - MS Excel
  - SAS -Statistical Analysis System
  - SPSS -Statistical Package for Social Science
  - Minitab

Understanding, identifying and reporting the anomalies

- As an Information Security Analyst, not only do you have to ensure that you store data properly, you need to identify the anomalies, and report them.

CRM

- Customer Relationship Management (CRM) is an approach to managing a **company's interaction with current and future customers.**
- It often involves using technology to organize, automate, and synchronize sales, marketing, customer service, and technical support.

Database

- collection of information that is organized so that it can easily be accessed, managed, and updated.
- Microsoft Excel

Skills required to manage data and information effectively

- Technical Skills
- Human Skills
- Conceptual Skills
- Generic Skills
- Professional Skills
    - Decision Making
    - Planning and Organising
    - Customer Centricity or focus
    - Problem Solving
    - Analytical Thinking
    - Critical Thinking
    - Attention to Detail
    - Team Work-

Performance Evaluation Criteria for an Information Security Analyst

- The nature of the job of an Information Security Analyst and what would help them perform this role well. The **criteria** that would be used to evaluate the performance of an Information Security Analyst ability to manage data effectively.
  - Coordinates with the appropriate people for data and information needs.
  - Is reliable; gets data from reliable sources.
  - Communicates with colleagues clearly, concisely and accurately.
  - Integrates work effectively with that of others.

Performance Evaluation Criteria for an Information Security Analyst

- The criteria that would be used to evaluate the performance of an Information Security Analyst ability to manage data effectively.
  - Shares essential information on time.
  - Takes help from the appropriate people when there are any problems in the data.
  - Follows the company rules while analyzing data.
  - Keeps a track of the needs of the organization.
  - Honors commitments.
    - If for some reason, the analyst is unable to carry out their promises, they inform in advance and suggest alternatives.

Performance Evaluation Criteria for an Information Security Analyst

- The criteria that would be used to evaluate the performance of an Information Security Analyst ability to manage data effectively.
  - Maintains good relationships with colleagues.
    - Sorts out problems with them, if any.
    - Shows respect for others.
  - Follows the policies, procedures and culture of the organization.
  - Keeps up-to-date with the technological developments.
  - Reports any unresolved anomalies in the data to the appropriate people.
  - Takes care of quality issues.

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