Data & Information in Organizations

What is Data ?

Data is raw, unorganized, unanalyzed, uninterrupted, and unrelated used in different contexts.

For instance, facts and stats gathered by researchers for their analysis can collectively be called data.

It can be in the form of numbers, text, images, or any other form of representation.

Data on its own lacks significance until it is processed and interpreted.

What is Information ?

When that data is analyzed, structured, and given composure or context to make it useful, we find information.

In essence, information is systematic, filtered, and useful.

Information adds value by presenting data in a comprehensible and actionable format.

Types of data.

Primary Data

- **Qualitative Data** - Data that cannot be counted, measured or easily expressed using numbers. It is collected from text, audio and images and shared using multimedia tools
- **Quantitative Data** - Data that can be expressed in terms of numbers, counted or compared

Secondary Data

- **Internal Data** - Internal data is private data collected within the organization
- **External Data** - External data is data collected and processed from outside the organization.

Interrelationship and Differences

Data to Information Transformation: The process of transforming data into information involves organizing, analyzing, and interpreting data to extract meaningful insights. For example, raw sales figures (data) can be analyzed and presented as quarterly sales performance reports (information).

Context and Relevance: Information provides context and relevance to data, helping users understand its significance and implications. While data may consist of isolated facts, information places these facts within a broader context, making it more meaningful.

Purpose and Use: Data serves as the foundation for generating information. Information, in turn, serves specific purposes such as decision-making, problem-solving, or communication. It is tailored to meet the needs of users and supports their objectives.

Representation: Data can exist in various forms and formats, whereas information is typically presented in a structured and organized manner that is easier to understand and interpret.

Uses of data in an organization

Strategic Level:

Features and Characteristics: At the strategic level, data and information requirements focus on long-term planning, decision-making, and setting organizational goals.

Implications: Data and information at this level often involve analyzing changing markets, assessing the impact of global and national trends, and anticipating future opportunities and challenges.

For example, analyzing market research data to identify emerging trends or assessing the impact of setting up new offices on the organization's growth strategy.

Uses of data in an organization

Management Level:

Features and Characteristics: The management level deals with overseeing day-to-day operations, monitoring performance, and making tactical decisions to achieve organizational objectives.

Implications: Data and information requirements include managing customer data, employee information, supplier details, and financial performance data.

For instance, tracking customer satisfaction metrics, evaluating employee performance, managing supplier relationships, and analyzing financial reports to ensure profitability.

Uses of data in an organization

Operational Level:

Features and Characteristics: The operational level involves executing routine tasks, managing resources, and ensuring efficient business processes.

Implications: Data and information needs at this level include monitoring available resources, tracking stock levels, analyzing customer numbers, and managing cash flow.

For example, maintaining inventory levels using 'just in time' systems, optimizing production schedules based on resource availability, and analyzing cash flow statements to ensure liquidity.

Datas used to define organisational requirements and devise IT systems and solutions.

Organizational Records: Internal documents, reports, and databases containing information about the organization's structure, processes, and operations.

Market Research Data: Information gathered from market studies, surveys, and customer feedback to understand market trends, consumer preferences, and competitors' strategies.

Financial Data: Financial statements, budgets, and accounting records providing insights into the organization's financial health, revenue, expenses, and profitability.

Customer and Sales Data: Data related to customer demographics, purchasing behavior, sales transactions, and customer relationship management (CRM) systems.

Operational Data: Real-time data generated by operational systems, IoT devices, sensors, and machinery to monitor production processes, track equipment performance, and ensure operational efficiency.

Datas used to define organisational requirements and devise IT systems and solutions.

Employee Data: Personnel records, performance evaluations, training data, and HR databases containing information about employees' skills, roles, and performance.

Supply Chain Data: Information about suppliers, inventory levels, procurement processes, and logistics to optimize supply chain management and operations.

External Data Sources: Data from external sources such as industry reports, government databases, regulatory filings, and market intelligence platforms.

Data and information needs at different levels of an organization can vary based on several factors.

Sector and Type of Organization: Different industries have unique data requirements. For example, healthcare organizations may need patient records and medical history data, while financial institutions require transaction data and regulatory information.

Size of the Organization: Larger organizations typically deal with more complex data sets and require scalable systems to manage data effectively. Smaller organizations may have simpler data needs but still require accurate information for decision-making.

Services and/or Products Provided: The nature of the organization's offerings influences its data needs. Retailers may need sales data and inventory records, while software companies may require data on product usage and customer feedback.

Aims and Goals of the Organization: Data is crucial for aligning organizational strategies with business objectives. Organizations need relevant data to measure performance, track progress towards goals, and make informed decisions.

Defining the Scope of Customer's Needs: Understanding customer needs and preferences requires data analysis of customer interactions, feedback, and purchasing behavior.

Managing Day-to-Day Tasks and Services: Operational data such as task assignments, scheduling, and resource allocation helps organizations streamline daily operations and ensure efficient service delivery.

Ensuring Continuation and Provision of Service/Product: Data is essential for maintaining service levels, monitoring product quality, and identifying areas for improvement to meet customer expectations.

Identifying and Planning Improvements: Organizations use data to identify inefficiencies, bottlenecks, and areas for optimization, leading to process improvements and innovation.

Setting and Developing Policy: Policy decisions rely on data-driven insights to address regulatory compliance, risk management, and strategic planning.

Communication with Staff, Colleagues, and Customers: Data supports internal and external communication by providing accurate information for reporting, collaboration, and customer support.

Customers, Staff, and Location: Data about customer demographics, employee performance, and geographic factors helps tailor products/services, manage workforce, and target marketing efforts effectively.

Operational Tasks: Data supports various operational tasks performed by individuals and IT systems, including data entry, analysis, reporting, and automation of routine processes.

Data source and data set requirements of organisations and IT systems:

Organizations and IT systems have specific data source and data set requirements that consider factors such as volume, velocity, variety, veracity, and value.

Volume: Refers to the quantity of data generated or processed by the organization or IT system. This includes the sheer amount of data produced, stored, and analyzed. Examples include transaction records, sensor data, social media interactions, and more.

Velocity: Represents the speed at which data is generated, collected, and processed. It highlights the real-time or near-real-time nature of data streams. For instance, financial trading platforms require high-velocity data processing to execute trades quickly based on market fluctuations.

Variety: Encompasses the diversity and complexity of data types and sources. Organizations deal with structured and unstructured data from various sources such as databases, documents, multimedia files, social media, and IoT devices. Managing this variety of data requires flexible data processing and storage solutions.

Veracity: Refers to the quality, accuracy, and reliability of the data. It ensures that the data used for decision-making and analysis is trustworthy and free from errors or inconsistencies. Data veracity is essential for maintaining the integrity and credibility of organizational insights.

Value: Represents the financial and operational significance of the data to the organization. It reflects the potential benefits and outcomes derived from analyzing and leveraging the data. Organizations prioritize data that provides actionable insights, drives innovation, enhances decision-making, and ultimately adds value to the business.