

DATA & INFORMATION

Key Reasons to Understand the Difference Between Information and Data

01

Informed
Decision-Making

Accurate Analysis

02

03

Value Extraction

Strategic Planning

04



WHAT IS DATA?

Data represents raw elements or unprocessed facts, including numbers and symbols to text and images. When collected and observed without interpretation, these elements remain just data—simple and unorganized. When these pieces are analyzed and contextualized, they transform into something more meaningful.

Data comes in various forms:

- Quantitative data, like an item's weight, volume, or cost, is provided numerically.
- Qualitative data is descriptive but non-numerical, such as a person's name and sex.

WHAT IS INFORMATION?

You get information when data is processed, organized, interpreted, and structured. The comprehensible output derived from raw data helps inform decisions, strategies, and actions. Information is essentially data made valuable and accessible—an integral component of decision-making.

For instance, if data points include daily temperature readings over a year, information is recognizing the trend of temperatures, understanding seasonal changes, and predicting future weather conditions.

WHAT IS THE DIFFERENCE BETWEEN DATA AND INFORMATION?

The transformation from data to information is fundamental in harnessing the potential of business analytics and involves several key distinctions. In its original form, data is raw and often chaotic, lacking meaningful structure or context. On the other hand, information is the refined, analyzed, and structured output derived from this data, tailored to provide actionable insights and facilitate strategic decision-making.

- Data is raw and unstructured, like individual customer interactions or transaction logs.
- Information provides context and insights, like a trend analysis that shows increasing customer satisfaction or sales figures over time.
- Data is often abundant and readily available but can be overwhelming without interpretation.
- Information is curated and actionable, offering strategic insights to guide business decisions.

DATA VS INFORMATION

1. Informed Decision-Making

Differentiating between data and information allows us to make more informed decisions. Data alone lacks context and meaning, whereas information provides the necessary insights and analysis derived from processed data. By understanding this distinction, you can avoid making erroneous decisions based on raw facts and instead leverage meaningful information to drive effective strategies.

2. Accurate Analysis

You can only conduct an accurate analysis when you know the difference between information and data. By recognizing that data is the foundation for information, you can ensure that your analytical processes are based on accurate and reliable data sources. This, in turn, enhances the credibility of the analysis, leading to more robust insights and conclusions.

3. Value Extraction

Extracting value from data requires transforming it into actionable information. Data holds limited value, but when processed, organized, and contextualized, it becomes valuable information that can drive innovation, uncover trends, and support business growth. Understanding this distinction empowers us to extract insights and derive actionable knowledge from the vast available data.

4. Strategic Planning

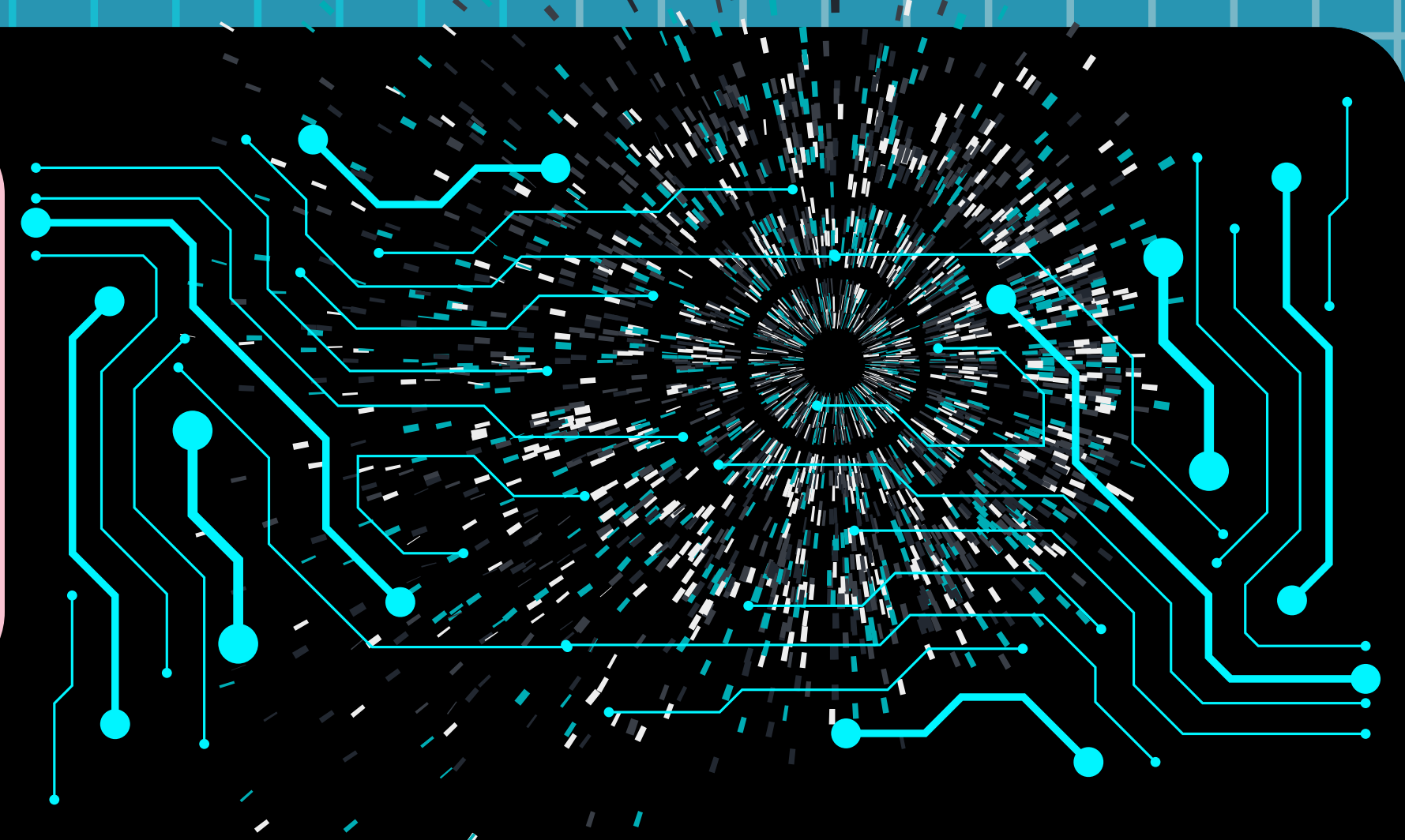
Differentiating between data and information is crucial for strategic planning. The information provides a comprehensive view of the business landscape, competitive dynamics, and market trends, allowing organizations to develop informed strategies that align with their goals. Without this understanding, organizations risk basing their strategies on incomplete or misleading data, compromising their chances of success.

DATA VS INFORMATION

	Data	Information
Definition	It is a set of characters, symbols, and numbers that require processing	It is a set of characters, symbols, and numbers that require processing
Format	Exist in the form of characters, letters, digits, and symbols	Follows the format of references
Structuring	Can be structured as – 1. Tables 2. Graphs 3. Data tree	Structured as – 1. Insights 2. Ideas 3. Thoughts 4. Languages
Making Decisions	Data in its original form can't support decision making	Information is self-sufficient to help in decision making
Dependency	Independent of information	Depends on data
Feature	Represents logical meaning derived from data	Represents logical meaning derived from data
Unit	Representation is based on binary digits – Bits and Bytes	Can be represented as time, quantity, etc.
Flow	Data flow is absolute	Information requires a definite flow
Usefulness	Data is raw and discreet and it doesn't communicate any insights	Information communicates insights, impacting decision-making and user behavior
Meaning	It is not much reliable	Much reliable. It allows users to draw conclusions

INFORMATION SYSTEMS

Information system, is an integrated set of components for collecting, storing, and processing data and for providing information, knowledge, and digital products. Business firms and other organizations rely on information systems to carry out and manage their operations, interact with their customers and suppliers, and compete in the marketplace. Information systems are used to run inter-organizational supply chains and electronic markets. For instance, corporations use information systems to process financial accounts, to manage their human resources, and to reach their potential customers with online promotions. Many major companies are built entirely around information systems.



5 COMPONENTS OF INFORMATION SYSTEMS

- **Hardware** - This is the physical technology that works with information.
- **Software** - A set of instructions that tells the hardware what to do. Unlike hardware, software is not tangible.
- **Data** - A collection of facts and information. For example, your street address, city, name, and phone number are all pieces of data that help describe you. Like software, data is intangible.
- **People**- From the front-line help desk workers up to the chief information officer (CIO), all people involved with the information system.
- **Process**- A series of steps undertaken to achieve a desired outcome or goal. Information systems are becoming increasingly integrated with organizations' processes.



6 MAJOR TYPES OF INFORMATION SYSTEMS

1. Transaction Processing System (TPS)

Transaction processing is essential to helping businesses perform daily operations. Transactions are any activity or event affecting the company and include deposits, withdrawals, shipping, billing customers, order entry, and order placement. TPS supports these business transactions.

Example:

- A point-of-sale (POS) system used in retail stores, where each sale is recorded and processed immediately, updating inventory levels and generating a receipt for the customer.

2. Office Automation System (OAS)

OAS comprises computers, communication-related technology, and personnel assigned to perform official tasks. It covers office transactions and supports official activity at every level in the organization, subdivided into managerial and clerical activities.

Office automation systems include the following applications:

- Email
- Voice Mail
- Word Processing

Example:

Microsoft Office Suite, where tools like Word, Excel, and Outlook help employees automate tasks such as document creation, data analysis, and email communication, improving overall productivity.

3. Knowledge Work System (KWS)

The KWS is a specialized system that expedites knowledge creation and ensures the business's technical skills and knowledge are correctly applied. The Knowledge Work System aids workers in creating and disseminating new information using graphics, communication, and document management tools.

Example:

- CAD (Computer-Aided Design) is used by software engineers and architects to design and test structures, enabling knowledge workers to create detailed models and simulations.

6 MAJOR TYPES OF INFORMATION SYSTEMS

4. Management Information System (MIS)

Middle managers handle much of the administrative chores for day-to-day routines and performance monitoring, ensuring that all the work is aligned with the organization's needs. That's why MIS is such a valuable tool. Management Information Systems are designed to help middle managers and supervisors make decisions, plan, and control the workflow. The MIS pulls transactional data from various Transactional Processing Systems, compiles the information, and presents it in reports and displays.

Additionally, these reports can be produced monthly, quarterly, or annually, although MIS can have more immediate reports (e.g., hourly, daily).

Example:

An HR management system that generates reports on employee attendance, performance, and payroll, helping managers make informed decisions about workforce management.

5. Decision Support System (DSS)

The DSS is a management-level, interactive, computer-based information system that helps managers make decisions. The Decision Support System gives middle managers the information necessary to make informed, intelligent decisions.

Decision Support Systems use different decision models to analyze or summarize large amounts of data into an easy-to-use form that makes it easier for managers to compare and analyze information. Often, these summaries take the form of charts and tables.

Example:

A financial forecasting system that uses data analysis and modeling to assist company executives in making investment decisions by predicting future market trends.

6. Executive Support System (ESS)

The ESS is like the MIS but for executive-level decision-making. Because the decisions involve company-wide matters, the stakes are higher, and they demand more insight and judgment.

The ESS provides greater telecommunication, better computing capabilities, and more efficient display options than the DSS. Executives use ESS to make effective decisions based on summarized internal data taken from DSS, MIS, and external sources. In addition, executive support systems help monitor performances, track competitors, spot opportunities and forecast future trends.

Example:

A dashboard system that provides CEOs with a real-time overview of key performance indicators (KPIs) such as sales revenue, market share, and customer satisfaction, enabling high-level decision-making and strategic planning.

ANALYSIS

Data is a collection of raw, unprocessed , figures, or details that can be in the form of numbers, text, images, or other types of observations. It represents the basic building blocks of information but has no meaning on its own until it is organized, analyzed, or interpreted. Data refers to raw and unprocessed facts, figures, or symbols that lack context and meaning. It requires analysis and interpretation to extract insights and derive value. It involves understanding the data's relationships, patterns, and implications to derive meaningful insights. This interpretation adds value to the data and transforms it into actionable information. A list of temperatures recorded throughout the day or a set of survey responses are considered data. Information on the other hand, is data that has been organized, processed, or interpreted in a way that gives it meaning and makes it useful. It's what we get when raw data is put into context, allowing us to understand, make decisions, or solve problems. For example, knowing the temperature is 75°F is data, but understanding that it's a warm day and deciding to wear a t-shirt based on that is information. Information helps us make sense of the world and guides our actions. In addition, access to relevant and reliable information also facilitates collaboration and communication within an organization, enhancing teamwork and productivity. Information represents processed and organized data that has been given context, relevance, and meaning. It has already undergone analysis, summarization, and presentation, making it readily understandable and actionable for decision-making. Information systems are a set of interconnected information resources, including software, hardware, networks and system users that work together to collect, analyze, and disseminate data to facilitate decision-making processes within a business or organization. These systems are used to support business operations, decision-making, communication, and collaboration, as well as to provide digital products and services to customers. Information systems can range from simple manual systems, such as a paper-based filing system, to complex computer-based systems that use advanced technologies like cloud computing and artificial intelligence. Examples of Information Systems are TPS,MIS, ERP, DSS, CRM, and etc.

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