# Data and Information management

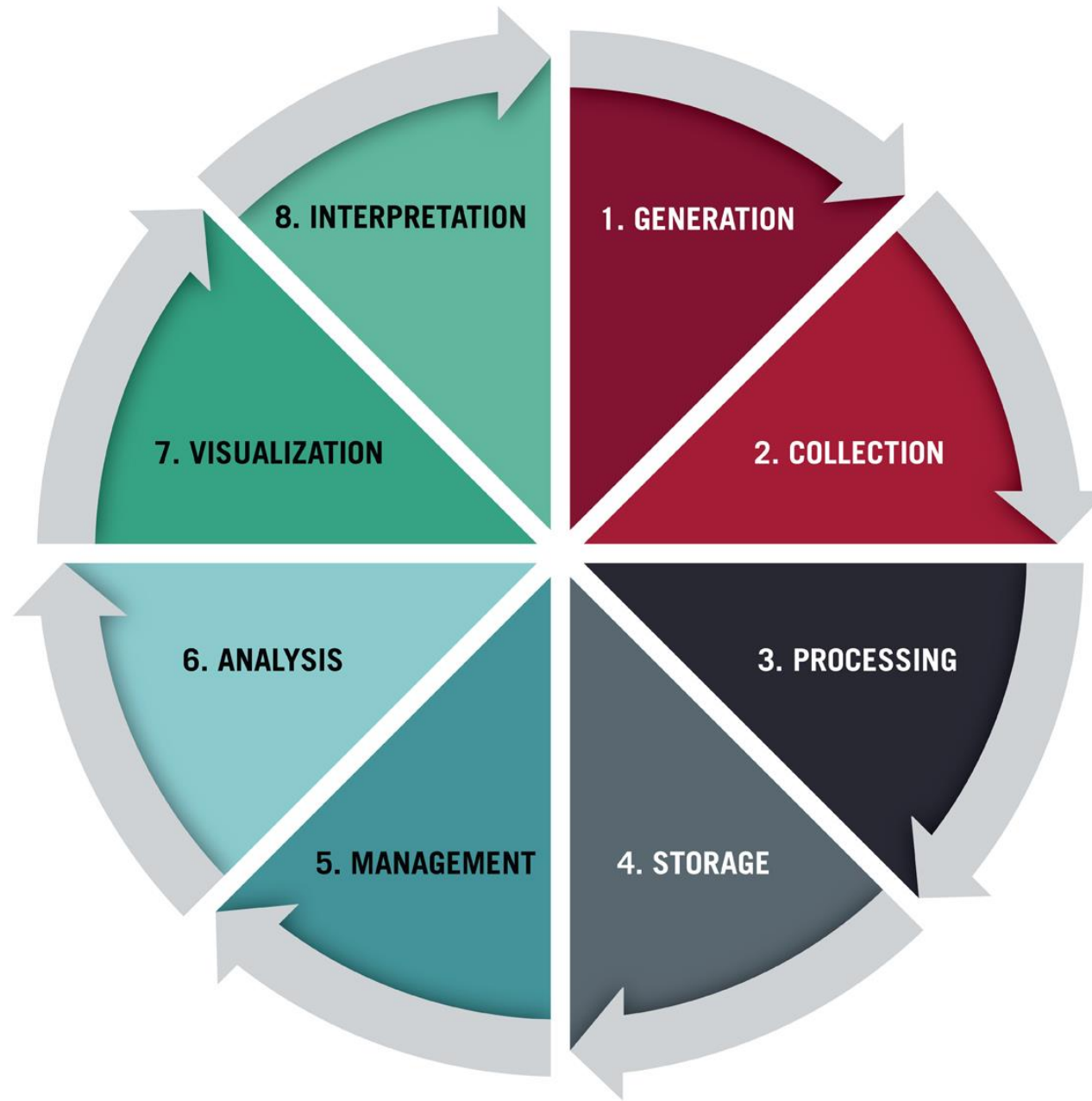| Data | Information |
|---|---|
| • Data refers to raw facts that have no specific meaning. | • Information refers to processed data that has a purpose and meaning. |
| • The word 'data' is derived from the Latin word 'datum', which means 'something that is given'. | • The word 'information' is derived from the Latin word 'informatiō', which means 'formation or conception'. |
| • The data is independent of the information. | • Information is dependent on data. |
| • Data or raw data is not enough to make a decision. | • The information is sufficient to help make a decision in the respective context. |

- Data management is the practice of collecting, organizing, protecting, and storing an organization's data so it can be analyzed for business decisions.

- As organizations create and consume data at unprecedented rates, data management solutions become essential for making sense of the vast quantities of data.

Link: https://www.tableau.com/learn/articles/what-is-data-management

**Data management techniques include the following**:

- **Data preparation** is used to clean and transform raw data into the right shape and format for analysis, including making corrections and combining data sets.

- **Data pipelines** enable the automated transfer of data from one system to another.

- **ETLs** (Extract, Transform, Load) are built to take the data from one system, transform it, and load it into the organization's data warehouse.

- **Data catalogs** help manage metadata to create a complete picture of the data, providing a summary of its changes, locations, and quality while also making the data easy to find.

- **Data warehouses** are designed for data analytics, which involves reading large amounts of data to understand relationships and trends across the data.

- **Data governance** is a set of principles and practices that ensure high quality through the complete lifecycle of your data.

- **Data architecture** is the process of standardizing how organizations collect, store, transform, distribute, and use data.

- **Data security** protects data from unauthorized access and corruption.

- **Data modeling** is the process of creating data models by which data associations and constraints are described and eventually coded to reuse.

DATA LIFE CYCLE

1. GENERATION
2. COLLECTION
3. PROCESSING
4. STORAGE
5. MANAGEMENT
6. ANALYSIS
7. VISUALIZATION
8. INTERPRETATION

**Steps in Data Life Cycle:**

- **Generation** occurs regardless of whether you're aware of it, especially in our increasingly online world. Some of this data is generated by your organization, some by your customers, and some by third parties you may or may not be aware of.

- **Collection** Not all the data that's generated every day is collected or used. It's up to your data team to identify what information should be captured and the best means for doing so, and what data is unnecessary or irrelevant to the project at hand.

- **Processing** Once data has been collected, it must be processed. Data processing can refer to various activities, including data cleaning, data compression, and data encryption

- **Storage** After data has been collected and processed, it must be stored for future use. This is commonly achieved through the creation of databases. These databases are stored in the cloud, on servers, or using another form of physical storage like a hard drive, CD, cassette, or floppy disk.

- **Management** involves organizing, storing, and retrieving data as necessary over the life of a data project. While referred to here as a "step," it's an ongoing process that takes place from the beginning through the end of a project.

- **Analysis** refers to processes that attempt to glean meaningful insights from raw data. Analysts and data scientists use different tools and strategies to conduct these analyses

- **Visualization** refers to the process of creating graphical representations of your information, typically using one or more visualization tools. Visualizing data makes it easier to quickly communicate your analysis to a wider audience both inside and outside your organization.

- **Interpretation** provides the opportunity to make sense of your analysis and visualization. Beyond simply presenting the data, this is when you investigate it through the lens of your expertise and understanding.

## PRODUCTIVITY

With good data management, your company will be more organized and productive. Employees will have an easier time finding, understanding, and relaying information.
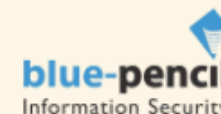
## COST EFFICIENCY

Data management can help your organization avoid unnecessary extra costs such as unneeded duplication. When data is easily accessible, You won't have to worry about employees conducting the same research over and over again.

## OPERATIONAL NIMBLENESS

Great data management makes it easy for companies to respond quickly to the world around them. This means companies can respond efficiently to market changes and react appropriately to competitors.

# WHY IS DATA MANAGEMENT IMPORTANT?

blue-pencil
Information Security

Source:http://www.blue-pencil.ca/what-is-data-management-and-why-it-is-important/

## SECURITY RISKS

Proper data management helps ensure that your information stays secure and never ends up in the wrong hands. A strong data management system will help protect your information from theft and attacks.

## REDUCED DATA LOSS

With a data management plan in place, you greatly reduce the risk of losing vital company information. It also ensures your important information is backed up and retrievable in case something happens to the original copies.

## ACCURATE DECISIONS

Proper data management helps ensure all employees and workers view and analyze the same, most recent information. This helps ensure that your company will be making the most accurate decisions based on the most accurate information

# Who's Using Data Management?

## Retail

Understanding customers and responding appropriately to expectations requires having an accurate, up-to-date view of all the data – whether it's streaming, cloud based, or stored in a data lake or warehouse. From marketing to merchandising to sales, trusted data management is essential to taking charge of retail data.

More retail solutions ❯

## Manufacturing

In the manufacturing industry, nothing speaks success like quality. With solid data management and data quality technologies, manufacturers can efficiently manage product inventory, and integrate structured and unstructured data from all sources to get an enterprise view of performance, drive better outcomes and make well-informed business decisions.

More manufacturing solutions ❯

## Banking

More than ever, issues around data privacy, compliance and digitization require banks to have a trusted data foundation. Only with a complete, integrated view of all their data – and sound techniques for quality, governance and personal data protection – can banks can gain customers' trust and pursue forward-looking digital transformation efforts.

**More banking solutions** ❯

## Health Care

Enterprise data management is a must-have in the health care industry. The industry counts on being able to integrate data from all formats and sources – including data from outside of the organization – all while spotting duplicate data, fixing data quality issues, and adhering to strict regulatory and compliance requirements for protecting personal data and privacy.

**More health care solutions** ❯

## Government

Local and national governments are responsible for a vast range of services and programs. Reliable data management technologies support all those efforts – from fighting fraud and improper payments to ensuring citizen safety to overseeing population health outcomes, economic development and smart city initiatives.

**More government solutions** ❯

## Small and midsize business

As small and midsize businesses work toward digital transformation, they need to implement data-driven business models and modernize legacy IT so they can be competitive with their larger counterparts. One way to get there is with reliable data management technology that can be catered to the needs of smaller businesses.

**More SMB solutions** ❯