EXPLORE AI ACADEMY

An introduction to dashboards and reports

Dashboards and reports

Leveraging data and information as strategic assets

In today's data-driven world, organisations are recognising the **value of data and information** as **strategic assets.**

These assets can be harnessed to **drive positive change**, **improve decision-making**, and **gain a competitive edge**.

Let’s explore the crucial role that **dashboards and reports** play in leveraging data for organisational growth and success.

Using data to achieve business success

> Organisations **leverage data** in various ways to **achieve success** and gain a **competitive advantage**. Here are **six common ways in which data are used** for this purpose:

Data-driven decision-making

By analysing **historical and real-time data**, organisations can make more **informed**, **strategic decisions** across various aspects of their operations. This helps in **reducing risks** and **optimising outcomes**.

Customer insights

Customer data allows firms to identify **preferences**, **behaviour patterns**, and **pain points**, enabling them to **tailor their products or services** to better meet customer needs. This can lead to improved **customer satisfaction** and **retention**.

Operational efficiency

Monitoring and analysing data on **resource usage**, **workflow efficiency**, and **supply chain management** allows organisations to **identify areas for improvement and cost reduction**. This can result in streamlined operations and improved profitability.

Using data to achieve business success

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Predictive analytics

Predictive analytics **uses historical data to forecast future trends and outcomes**. Organisations leverage predictive models to **anticipate market trends**, **demand**, and **potential issues**. This enables them to **proactively** adjust their strategies, allocate resources, and stay ahead of the competition.

Risk management

By analysing various types of data, including **financial, market, and cybersecurity data**, organisations can **identify potential risks** and develop strategies to mitigate them. This helps protect the organisation's assets and reputation.

Product development and innovation

Collecting and analysing data on **user feedback, market trends, and emerging technologies** allows organisations to identify opportunities for creating new **products that align better with customer needs and preferences**, leading to increased sales and market competitiveness.

The purpose of dashboards

> Dashboards serve the critical role of **providing real-time insights** into an organisation's performance. They are designed to **monitor key metrics**, **track progress toward goals**, and **facilitate data-driven decision-making**.

Real-time monitoring

Particularly valuable for **real-time monitoring** of an organisation's performance. They provide an **immediate snapshot of critical metrics**, allowing teams to stay informed about the latest developments.

KPIs and goals

Instrumental in **tracking Key Performance Indicators** (KPIs) and ensuring that an organisation is **making progress toward its strategic goals**. They offer a clear and accessible way to **assess whether the objectives are being met**.

Actionable insights

Engineered to provide actionable insights. The visual representation of data on a dashboard makes it **easy to spot trends, anomalies, and performance issues**. This, in turn, **empowers decision-makers to act quickly and make informed decisions.**

The purpose of reports

> Reports are **comprehensive documents** designed to convey **in-depth information**, **detailed analysis**, and **insights**. They serve a variety of essential purposes within organisations, making them crucial for informed decision-making, compliance, and communication.

Comprehensive analysis

A preferred tool for conducting comprehensive data analysis. They provide a **structured format for presenting data**, allowing for **detailed examination** and **interpretation**. This is especially useful when dealing with **complex or extensive datasets**.

Communicating complex information

Adept at conveying complex information in a clear and organised manner. They are frequently used to present **research findings, financial statements, performance metrics, and other data-rich content** to stakeholders, management, or external audiences.

In-depth exploration

Facilitate in-depth exploration of a topic or issue. They provide space for **extensive explanations**, **context**, and **background information**, making them valuable for educational, research, or investigative purposes.

Dashboards and reports

> Dashboards and reports are both essential tools for data analysis and communication. While they serve similar purposes, they have distinct differences in terms of their structure, presentation, and functionality.

Dashboards

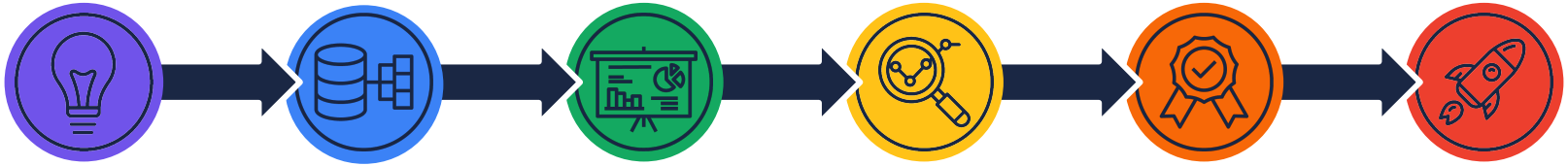
- Dashboards are **visual representations of data** that provide **real-time insights into KPIs and metrics**.
- They are **interactive** and allow users to explore data and make decisions on the fly.
- Dashboards are typically used for **monitoring and tracking** ongoing performance.
- They are typically **ideal for decision-makers** who need a quick overview of critical information.

Reports

- Reports are **structured documents** that present data in a more detailed and organised manner.
- They provide a **comprehensive view of historical data, trends, and analysis**.
- Reports are often used for **in-depth analysis, compliance, and documentation purposes**.
- They are suitable for **stakeholders who require a detailed, structured overview of data**.

The general process of creating a dashboard/report

Creating a dashboard involves several key steps to **design, develop, and deploy a data visualisation tool** that effectively conveys information to its **intended audience**.



Planning

Clearly **define the purpose** of the dashboard and identify the target audience to tailor the dashboard's content and design to their needs.

Data gathering and preparation

Identify the data sources that will be used for the dashboard, ensuring the **data is accurate, relevant, and up to date**.

Visualisation

Select the dashboarding tool, **design the layout and choose the appropriate charts and graphs** to use.

Interactivity

Enhance the dashboard with **interactive features**, such as filters, slicers, or drill-down options that allow users to explore data in more detail.

Testing and validation

Test the dashboard for **accuracy** and **functionality**, ensure that data updates correctly, interactive features work as intended, and visuals are error-free.

Deployment and maintenance

Continuously **monitor and maintain** the dashboard to ensure it remains accurate, relevant, and functional.

Popular dashboarding and reporting tools

Microsoft Power BI

A versatile tool for data visualisation and analytics, suitable for businesses of all sizes.

Tableau

Known for its interactive and user-friendly features, Tableau is ideal for exploring and presenting data.

Google Data Studio

A free tool from Google for creating interactive reports and dashboards using data from various sources.

QlikView

Offers robust data analytics and visualisation capabilities, with a focus on self-service analytics.

Components of a dashboard in Power BI

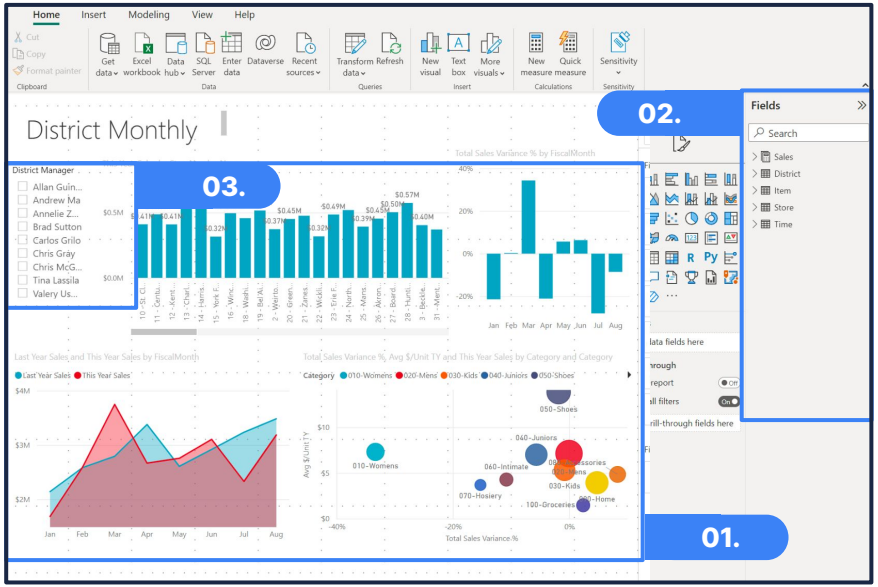
Dashboards consist of various components, including **widgets and visualisations**, **data sources**, and **filtering elements**. Understanding how these components relate to each other is essential for creating effective dashboards.

Components of a dashboard:

01. Widgets and visualisations: Dashboards typically feature widgets such as charts, graphs, and tables that visualise data in a meaningful way.

02. Data sources: Dashboards rely on one or more data sources, which can be databases, spreadsheets, or real-time feeds, to provide up-to-date information.

03. Filters: Dashboards can't be filtered or sliced. However, we can filter a dashboard tile in focus mode, but we can't save the filter.



Reports in Power BI

A Power BI report is a multi-perspective view of a dataset with visuals that highlight the dataset's results and insights. In Power BI, reports are visually very similar to dashboards, with the following key differences:

Dashboards	Reports
Created by connecting various data tables in one or more ways.	Generally created from a single dataset but could include multiple tables with relationships to other tables.
Display only the most impactful information specific to the end-user on a single page.	Typically multi-page documents providing a detailed breakdown of each category over multiple pages.
Focus on getting the most significant insights from the data.	Focus on getting a detailed analysis of the data.
Pinned to the page so that the reader can simply view the data. We can't filter or slice a dashboard*.	Incorporate filters, highlighters, and slicers that allow the user to interact with the dataset.

*You can filter a dashboard tile in focus mode, but can't save the filter.

Components of a report in Power BI

> Reports are topic-specific and provide in-depth information and a detailed summary of a large dataset based on the user's criteria.

Components of a report:

01. Widgets and visualisations: Like dashboards, reports feature visualisations such as charts, graphs, and tables that allow users to analyse the data.

02. Multi-page documents: Reports often have numerous pages that analyse various aspects of the dataset.

03. Filters and interactivity: Reports often include interactive elements like filters and slicers, allowing users to drill down into specific data subsets for deeper analysis.

Due to their similarities, we will be using the terms **dashboard and report interchangeably** within the Visualising data module.