

Analyzing customer churn in Power BI

CASE STUDY: ANALYZING CUSTOMER CHURN IN POWER BI



Iason Prassides

Content Developer, DataCamp

What is a case study?

- Apply your skills
- No new concepts
- Solve a real-world problem

Prerequisite courses:

- Introduction to Power BI
- Introduction to DAX in Power BI
- Data Visualization in Power BI



Data analysis flow in Power BI



Data Check



Explore Data



Analyze &
Visualize Data



Dashboarding



Communicate
Insights



Data analysis flow in Power BI



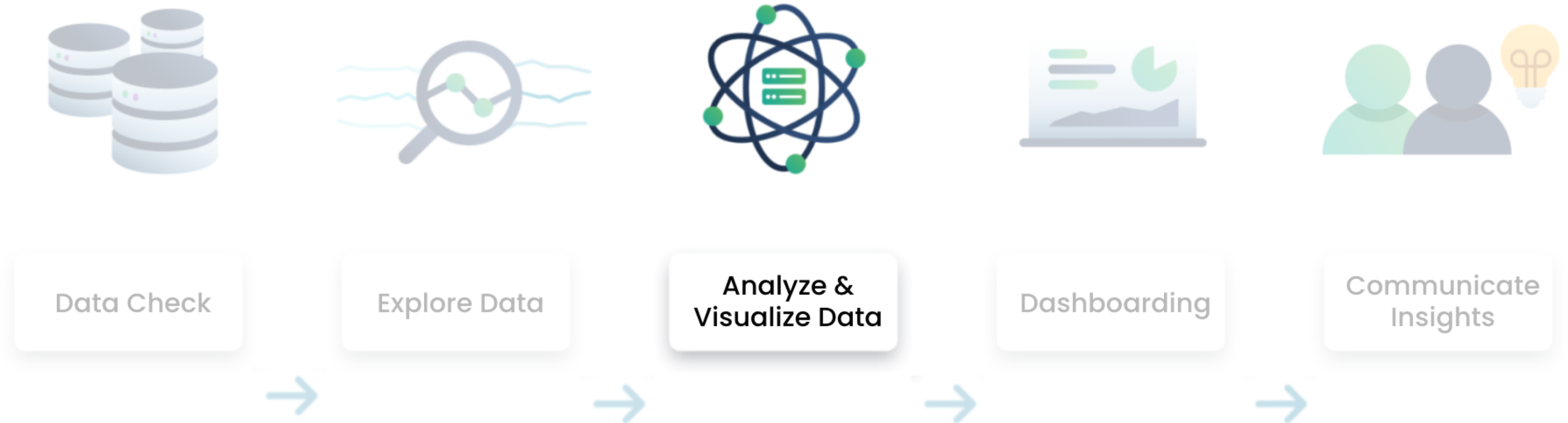
- Check for duplicate or missing values
- Do a sense check with other internal data sources

Data analysis flow in Power BI



- Ask yourself the right questions
- Build your first visualizations

Data analysis flow in Power BI



- Choose the right visualization to convey a message
- Perform more advanced analysis

Data analysis flow in Power BI



- Combine visualizations in one or more dashboards

Data analysis flow in Power BI

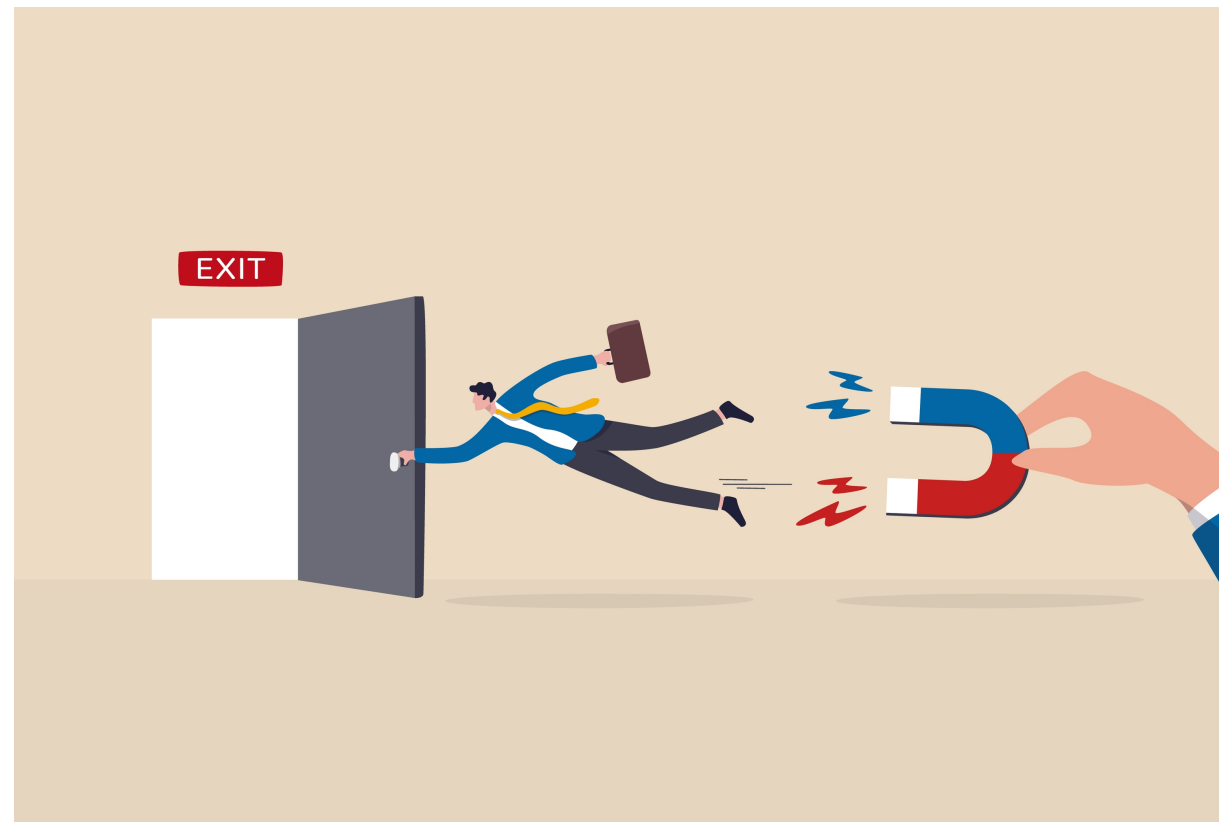


- Communicate your insights to stakeholders

The problem

Solving customer churn

- A fictitious dataset about churn from a Telecom provider (Databel)
- Your task: discover why customers are churning



Defining churn

The **churn rate**, also known as the rate of attrition or customer churn, is the rate at which customers stop doing business with an entity

- Leaky bucket problem
- Keeping customers is easier than getting new customers
- Reducing churn is a priority for many companies



¹ <https://www.investopedia.com/terms/c/churnrate.asp>

Calculating churn

Simplified formula

Churn rate = customers lost / total number of customers

Churn rate = 10 / 100

10 / 100 = 10%

There are **multiple ways** to calculate churn

- Varies by industry and revenue model
- An e-commerce platform could e.g. define a churner as someone who hasn't made a purchase in the last 12 months

The data

Key characteristics

- Databel, a fictitious Telecom provider
- One big table containing 29 columns
- One row per **customer**
- Snapshot of the database at a specific moment in time



The data

Dimensions

| Column name | Description |
|--------------------|---|
| Customer_id | The unique ID that identifies a customer |
| Churn Label | Contains 'Yes' or 'No' to indicate if a customer churned. |
| Demographic fields | Age, Gender, State, ... |
| Premium plans | Unlimited Data, International Plan, ... |
| ... | ... |

The data

Measures

| Column name | Description |
|-----------------------------|--|
| Total charges | Sum of all monthly charges |
| Monthly charge | The average of all monthly charges billed to the customer |
| Extra data charges | Extra charges for data downloads above the specified customer plan |
| Extra international charges | Extra charges for international calls for customers not on an international plan |
| Customer service calls | Number of calls made to customer service |
| ... | ... |

Metadata sheet

Let's start analyzing!

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