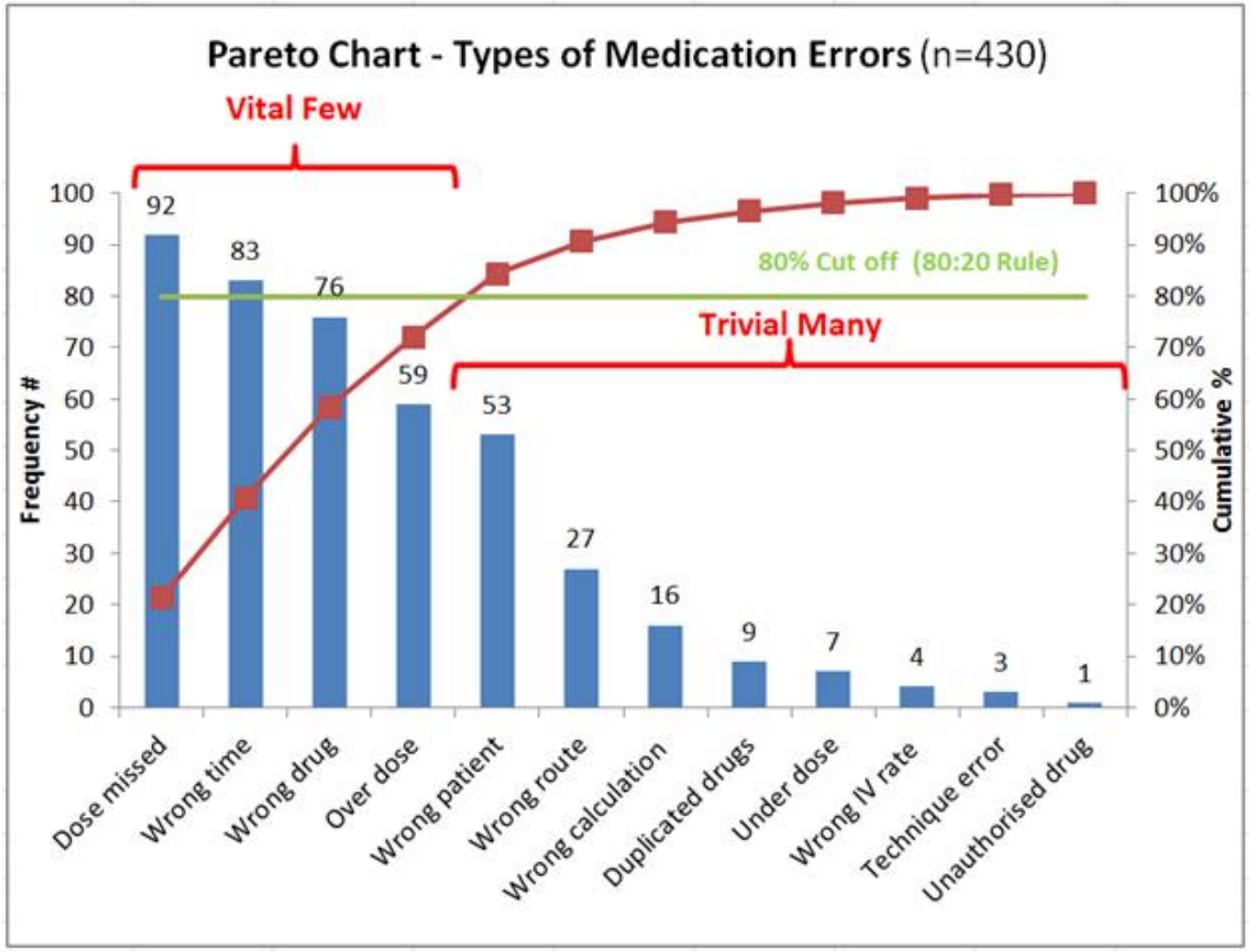
Introduction to the BDM course

What is the need for this course?

Majority of the data sets and analyses that we will come across will be from the space of business:

- *from within companies*
- *from the markets in which the companies operate*

Example 1: Use of Pareto charts

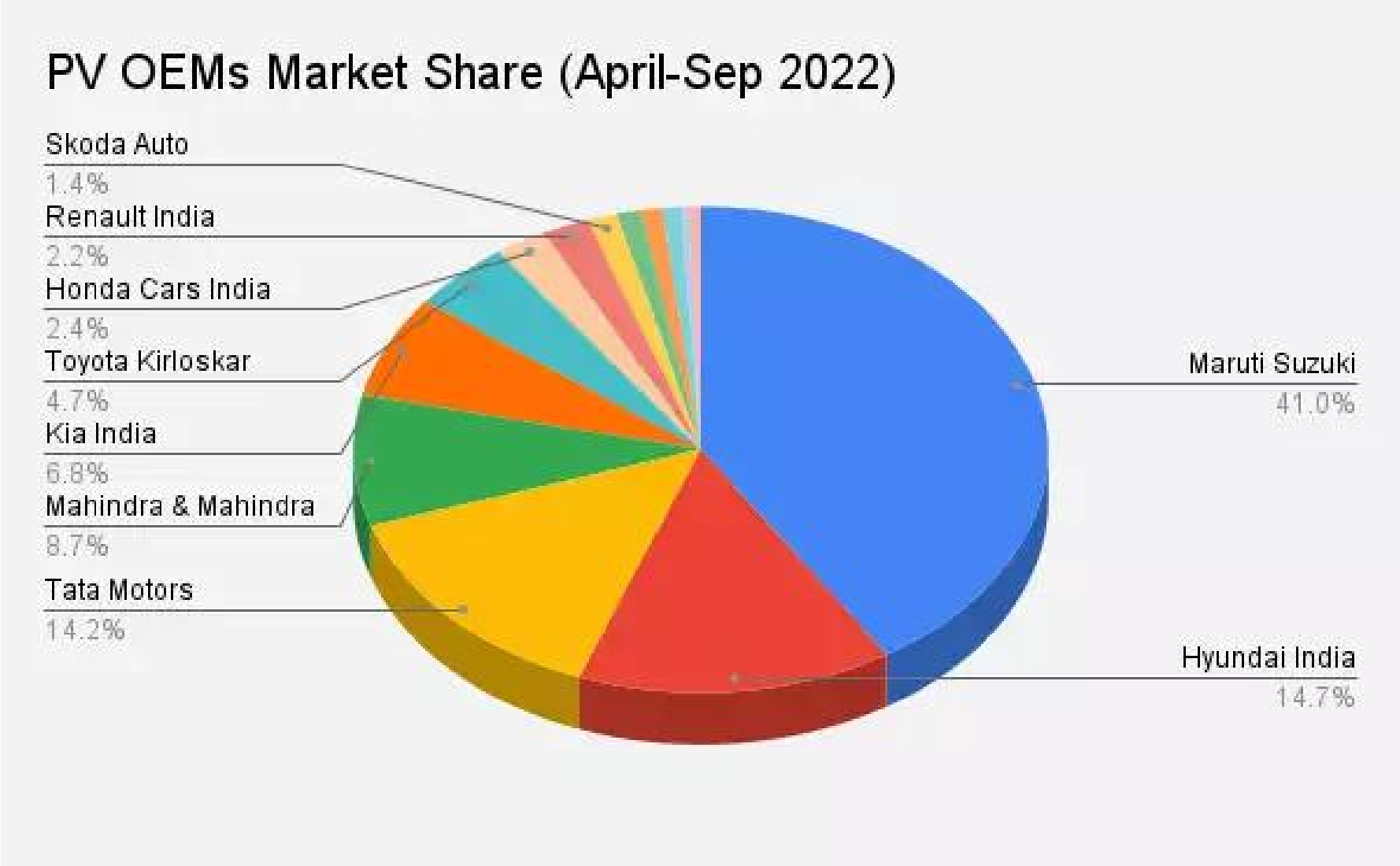


Using this chart, a pharma company can focus on remedies for the four most common types of medication errors that lead to lower performance of their drug

To prepare a chart like this, it will need to collect data about medication error incidents from hospitals and other places.

In the chart shown 430 such data items were collected

Example 2: Use of pie charts

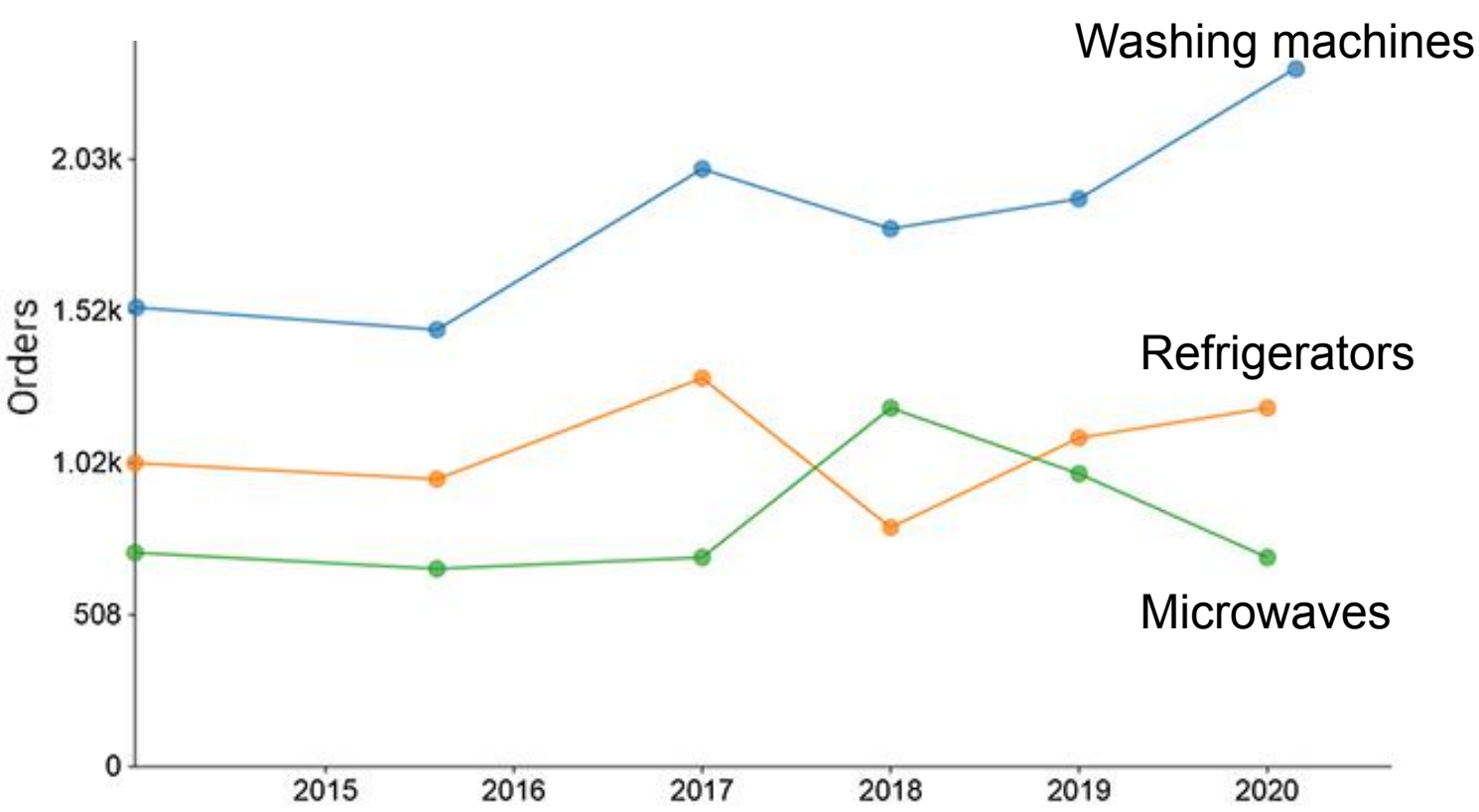


Using this chart, an auto company can determine where it stands with respect to its competitors

To prepare a chart like this, we need information about all cars sold during that period. This can be obtained from:

- Survey of dealers
- Ministry of road transport which registers these vehicles
- ...

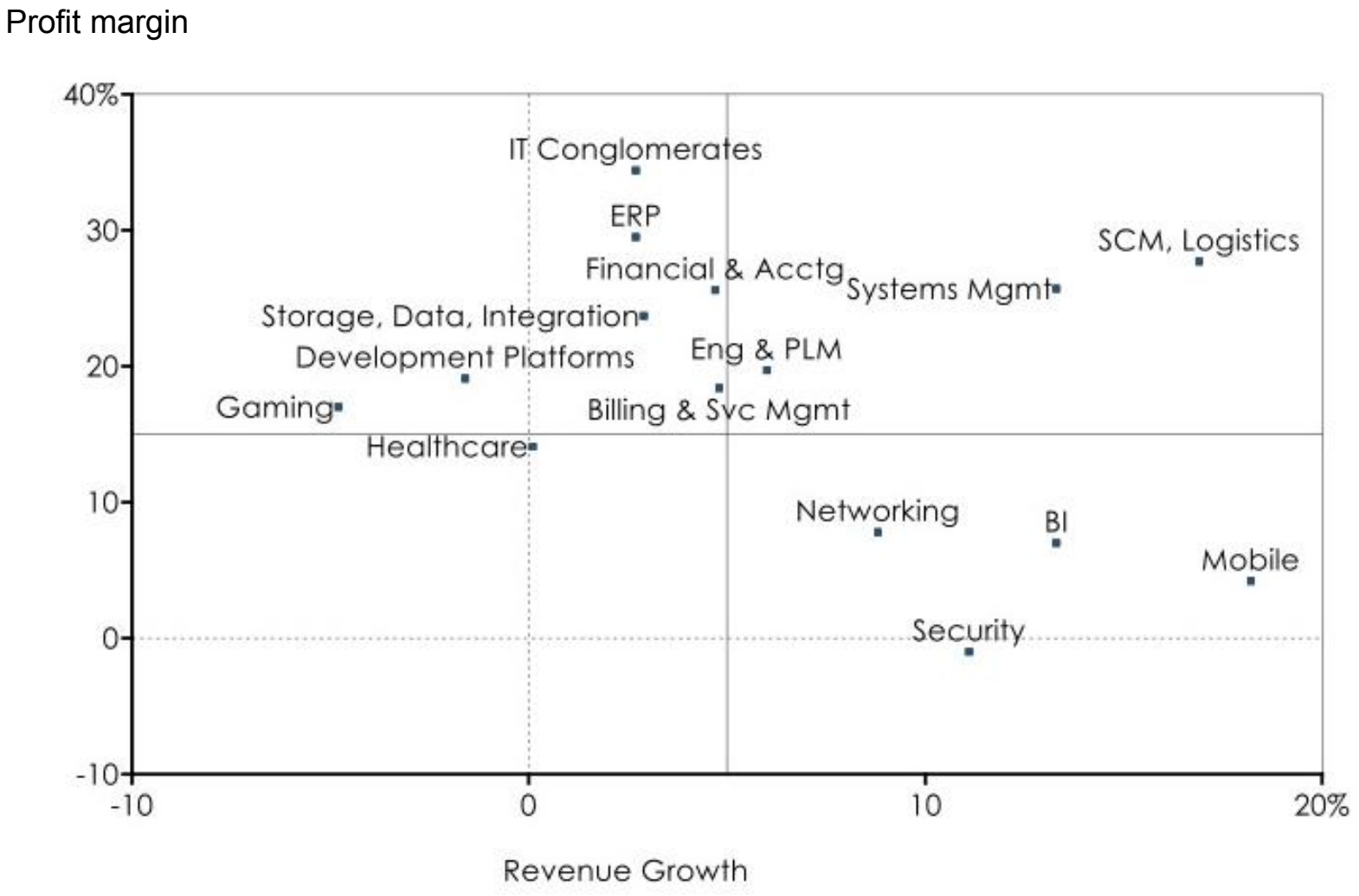
Example 3: Use of trend charts



Using this chart, a electrical durables store can determine which items to stock

To prepare a chart like this, the store needs to analyse all the sales bills over several years

Example 4: Use of 2 x 2 scatter diagrams



Using this chart, a software product startup can determine which product area to get into

To prepare a chart like this, the startup needs access to sales and profit information of all the software companies over several years

Data sources for the 4 examples

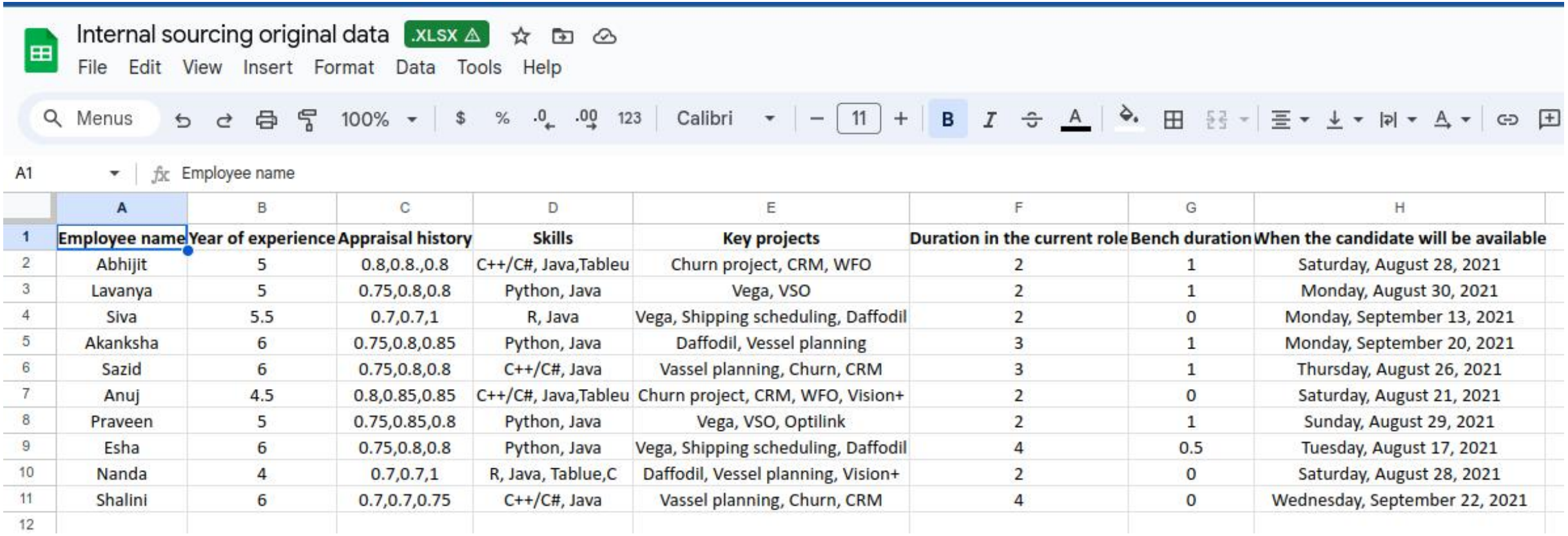
Example	Data source
• Pareto chart of medication errors	• Internal/External
• Pie chart of market share	• External
• Trend chart of sales	• Internal
• 2x2 scatter diagram of sales growth and profit margin	• External

First 4 weeks of the course: Analysis of external data sources

Next 8 weeks of the course: Analysis of internal data sources through 4 case studies

The only tool we will use is a spreadsheet

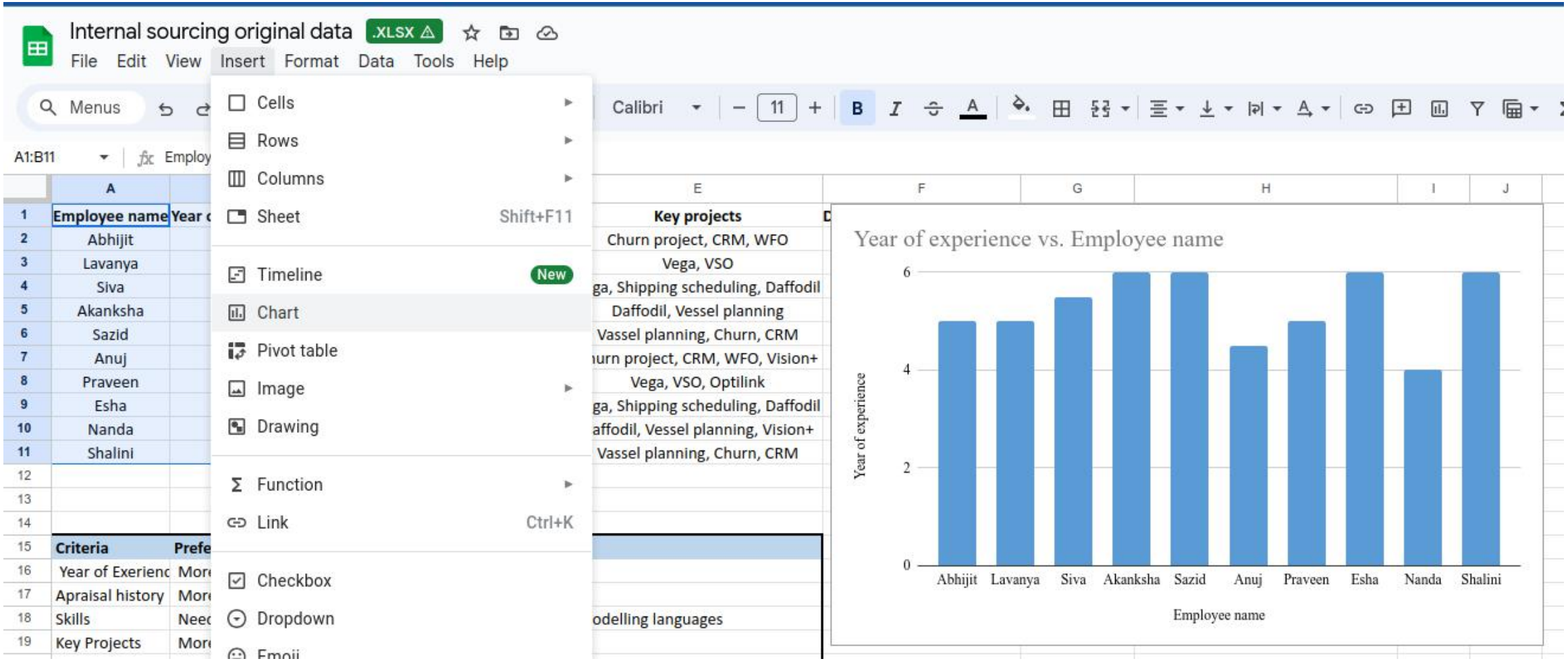
- Example spreadsheets: Microsoft Excel, Google sheets, ...



	A	B	C	D	E	F	G	H
1	Employee name	Year of experience	Appraisal history	Skills	Key projects	Duration in the current role	Bench duration	When the candidate will be available
2	Abhijit	5	0.8,0.8.,0.8	C++/C#, Java,Tableu	Churn project, CRM, WFO	2	1	Saturday, August 28, 2021
3	Lavanya	5	0.75,0.8,0.8	Python, Java	Vega, VSO	2	1	Monday, August 30, 2021
4	Siva	5.5	0.7,0.7,1	R, Java	Vega, Shipping scheduling, Daffodil	2	0	Monday, September 13, 2021
5	Akanksha	6	0.75,0.8,0.85	Python, Java	Daffodil, Vessel planning	3	1	Monday, September 20, 2021
6	Sazid	6	0.75,0.8,0.8	C++/C#, Java	Vassel planning, Churn, CRM	3	1	Thursday, August 26, 2021
7	Anuj	4.5	0.8,0.85,0.85	C++/C#, Java,Tableu	Churn project, CRM, WFO, Vision+	2	0	Saturday, August 21, 2021
8	Praveen	5	0.75,0.85,0.8	Python, Java	Vega, VSO, Optilink	2	1	Sunday, August 29, 2021
9	Esha	6	0.75,0.8,0.8	Python, Java	Vega, Shipping scheduling, Daffodil	4	0.5	Tuesday, August 17, 2021
10	Nanda	4	0.7,0.7,1	R, Java, Tablue,C	Daffodil, Vessel planning, Vision+	2	0	Saturday, August 28, 2021
11	Shalini	6	0.7,0.7,0.75	C++/C#, Java	Vassel planning, Churn, CRM	4	0	Wednesday, September 22, 2021
12								

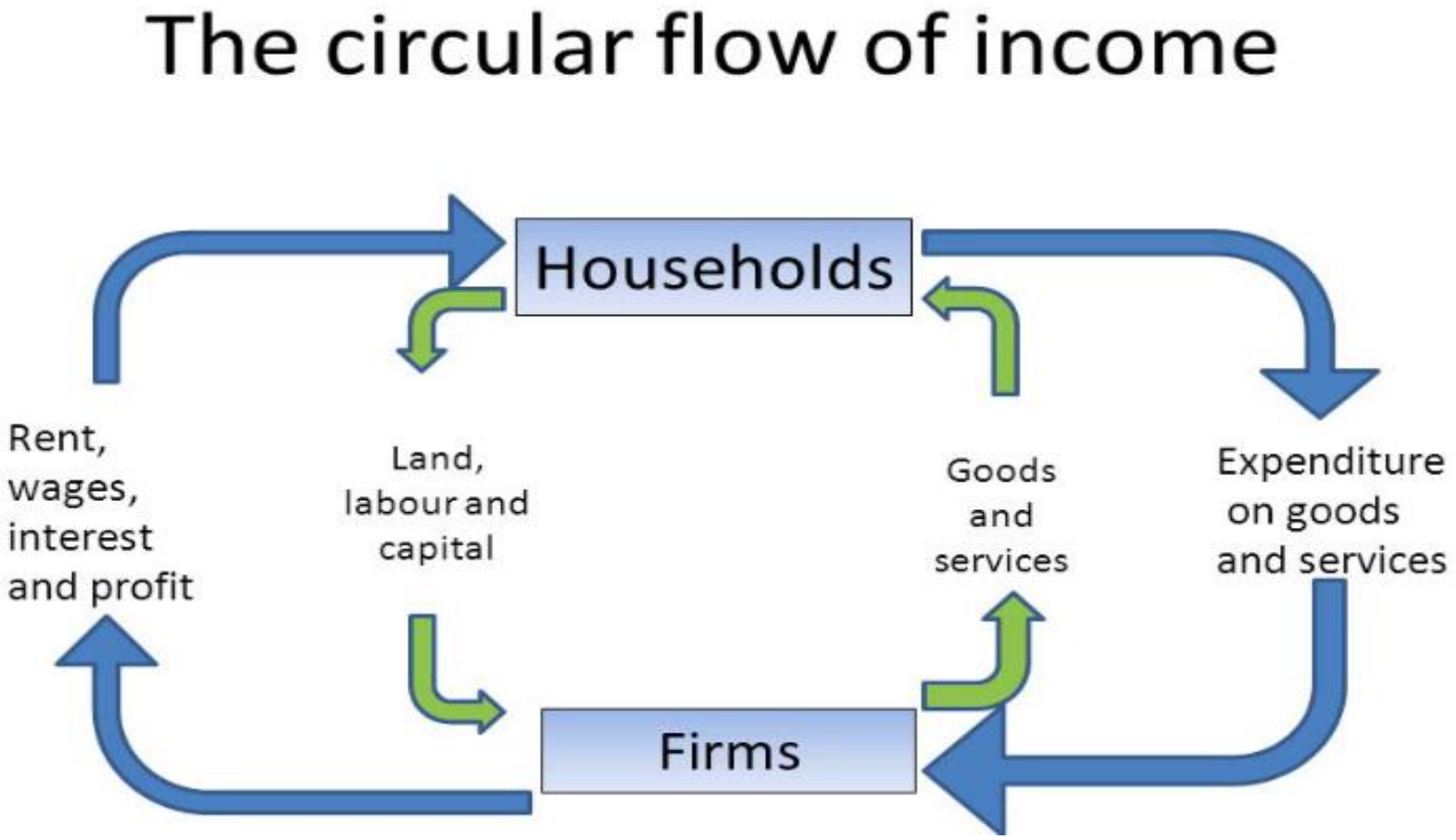
The only tool we will use is a spreadsheet

- We will also use it for producing charts ...



Economics: Producers, consumers and exchange

- Households buy goods and services from firms
- Households offer land, labour and capital to firms
- The flow of these from one side to another is studied in economics
- It is an excellent place to start if we are to understand the context of all the **external** data
- *A very basic introduction to key economic concepts will be provided during the first 4 weeks*



First 4 weeks: External data

- Household consumption data (what they have bought in the last month)
- Household aspirational data (what they would like to buy)
- Carrying out custom surveys
- Analysing consumption data using Excel
- Determining the number of people who will buy two wheelers from the data sets
- Determining the number of people who will take loans to buy two wheelers
- Using loan issue data to analyse the market for loans

Retail market case study: e-commerce company

- How the e-commerce industry works
- Analysis of the sales by units and amount of different categories of products
- Determining which products to focus on - pareto
- How the products are distributed to customers
- Maintaining the right level of stocks in warehouses based on analysis of data
- How to store the products in the warehouse - 2x2 scatter diagrams

Manufacturing case study: automotive gears company

- How the manufacturing industry works
- Using sales and market data to forecast the production volumes
- Planning the production
- Managing efficiency of operations by reducing wastage and improving utilisation
- Purchasing materials at the right time
- Improving unit profitability

Recruitment case study: IT company

- Introduction to unstructured data sets
- How the recruitment function works - different channels used for recruitment
- Resume and job description data
- Analysing resume information to short list candidates
- Using unstructured data analysis to determine the optimal channel to use

Financial services case study: payment company

- How the payment industry works
- Introduction of a new product (buy now pay later) - what are the considerations
- Analysis of payment data to determine appropriate customers to target
- Nudge economics - driving adoption through nudges
- Using A/B testing to determine the effectiveness of the nudge

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