Introduction to modelling

What is a model?

A simplified representation of reality that helps you make business decisions.

Why do we use models?

Most business decisions cannot be solved perfectly, so we develop models - for insights.

When do we use models?

For ill-structured problems, which do not have:

1. Clear objectives for the analysis
2. Obvious assumptions
3. All the necessary data available
4. A well-understood logical structure behind the analysis

Powell & Batt's 4 – stage process

Frame the problem > **Diagram the problem** > **Build the model** > **Generate insights** > **Decision**
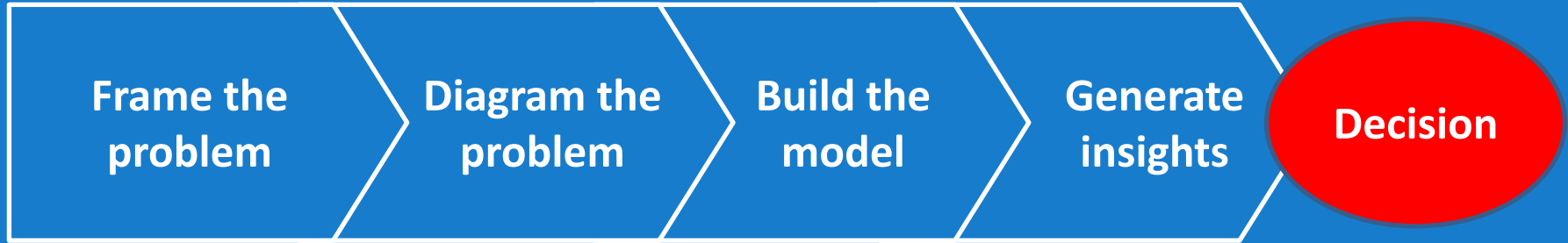
Case study: Zippy Airways

Startup airline based in London
Zippy has been operating for 3 months out of Gatwick Airport in London and has 16 flights per day between London and four European cities.

No-overbooking policy ... yet
Unlike most other airlines Zippy does not operate an overbooking policy. Overbooking is a policy airlines use to gain extra revenue from passengers who don't show up.

Risk and reward
Extra revenue if # no-shows is greater than the additional tickets sold.
If too many passengers show up, the airline must pay a 'bumping cost' to move passengers to a later flight.

Case study: Additional Information

Flight data provided
The data for each flight can be downloaded in the Excel file underneath the video

Bumping costs
If a customer gets bumped to another Zippy Airways flight later that day, then Zippy will pay them on average £150 in vouchers for the inconvenience.
If a passenger is bumped from a flight that has no Zippy Airways planes later that day, she will fly home with SloMo Airways, which has an agreement with Zippy to look after all bumped passengers at a cost of £175 per passenger. The passenger still receives the voucher from Zippy.

Additional considerations
Many of Zippy Airways passengers are business customers and would not appreciate being bumped from a flight. It may affect their decision to fly with Zippy in the future

Powell & Batt's 4 – stage process