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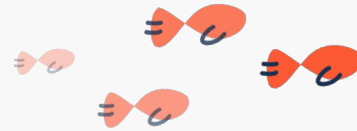
School and Pool for Digital Talent

Analytical Problem Solving



'Problem solving is 20% figuring out the answer and 80% figuring out the question'

- Andrew



Objective

Answer the right question

The job of an analyst is to solve problems...

But what is the problem?



Agenda

Learn What Problems to Solve

- 1. Prioritising:**
Pick Your Battles
- 2. Analytics Workflow:**
Step by Step
- 3. Root Cause Analysis:**
Getting to
the right Question



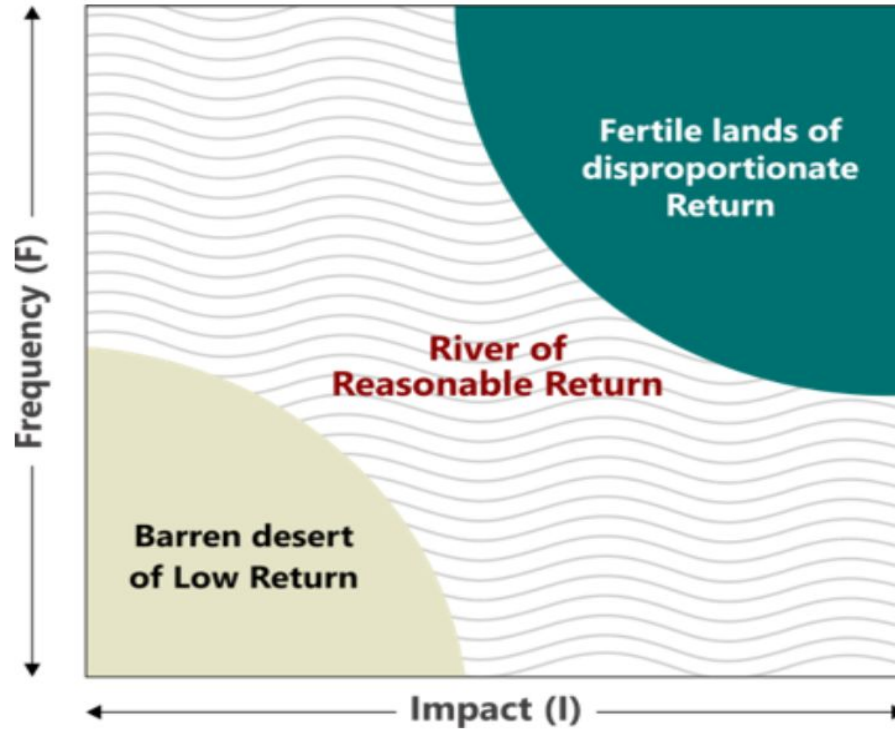
Agenda

Learn What Problems to Solve

1. Prioritising: Pick Your Battles



Prioritisation: Choosing which problems to solve

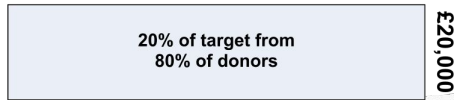
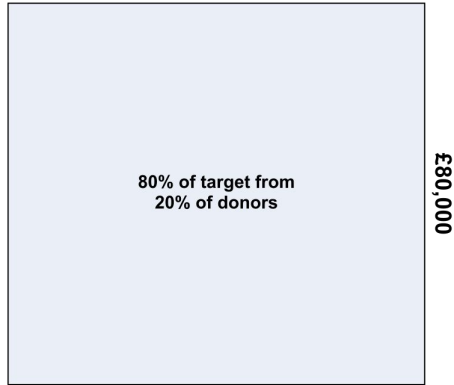


Prioritising with Pareto Analysis

80-20 rule

'80% of the consequences originate from only 20% of causes'

Target £100,000



Prioritising with Pareto Analysis

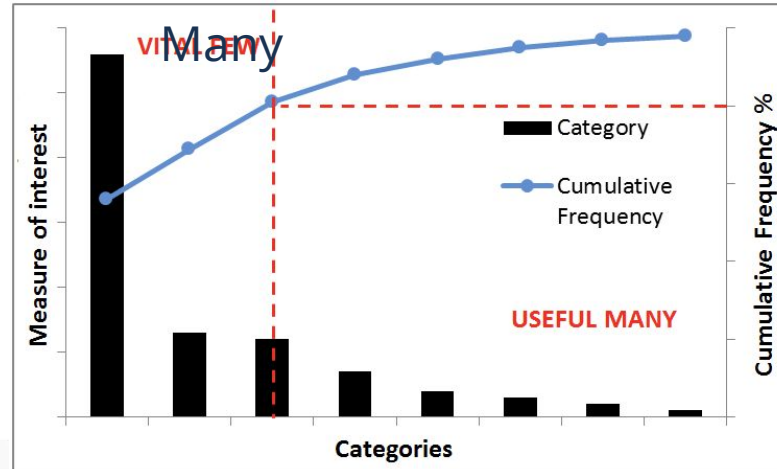
80-20 rule

'80% of the consequences originate from only 20% of causes'

Target £100,000



Vital Few vs Trivial



Agenda

**Learn what
problems to solve**

2. Analytics Workflow:
step by step



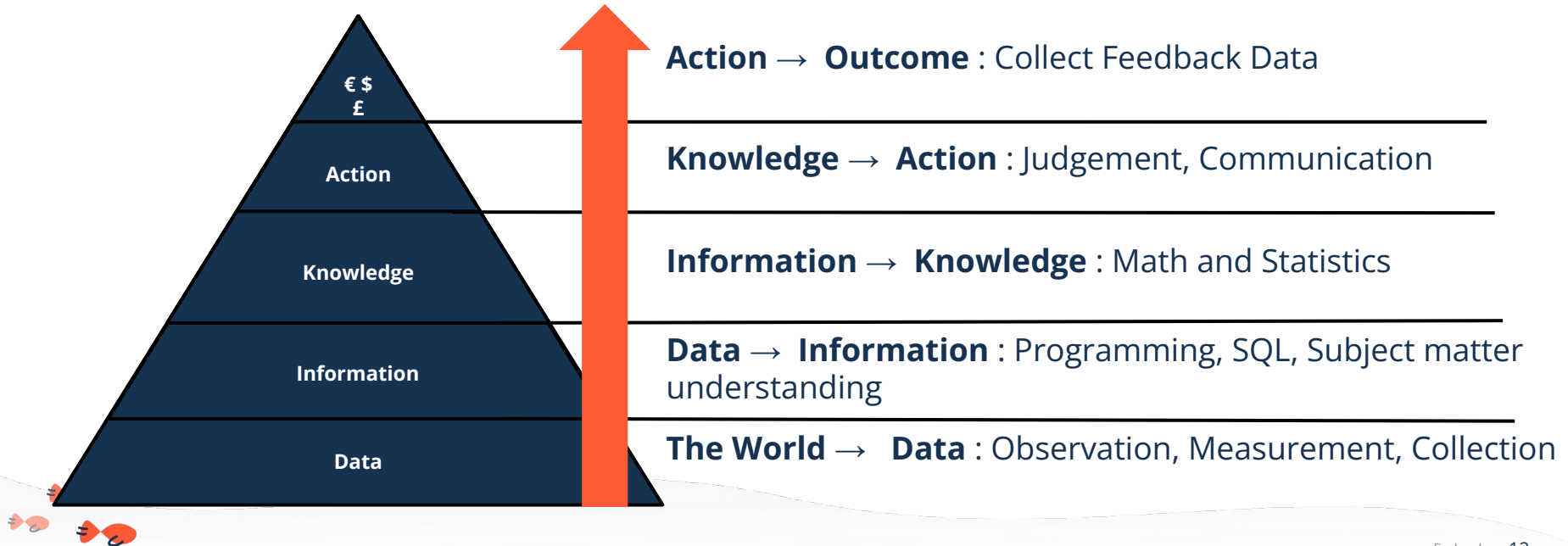
Analyst Workflow

Linear Dream



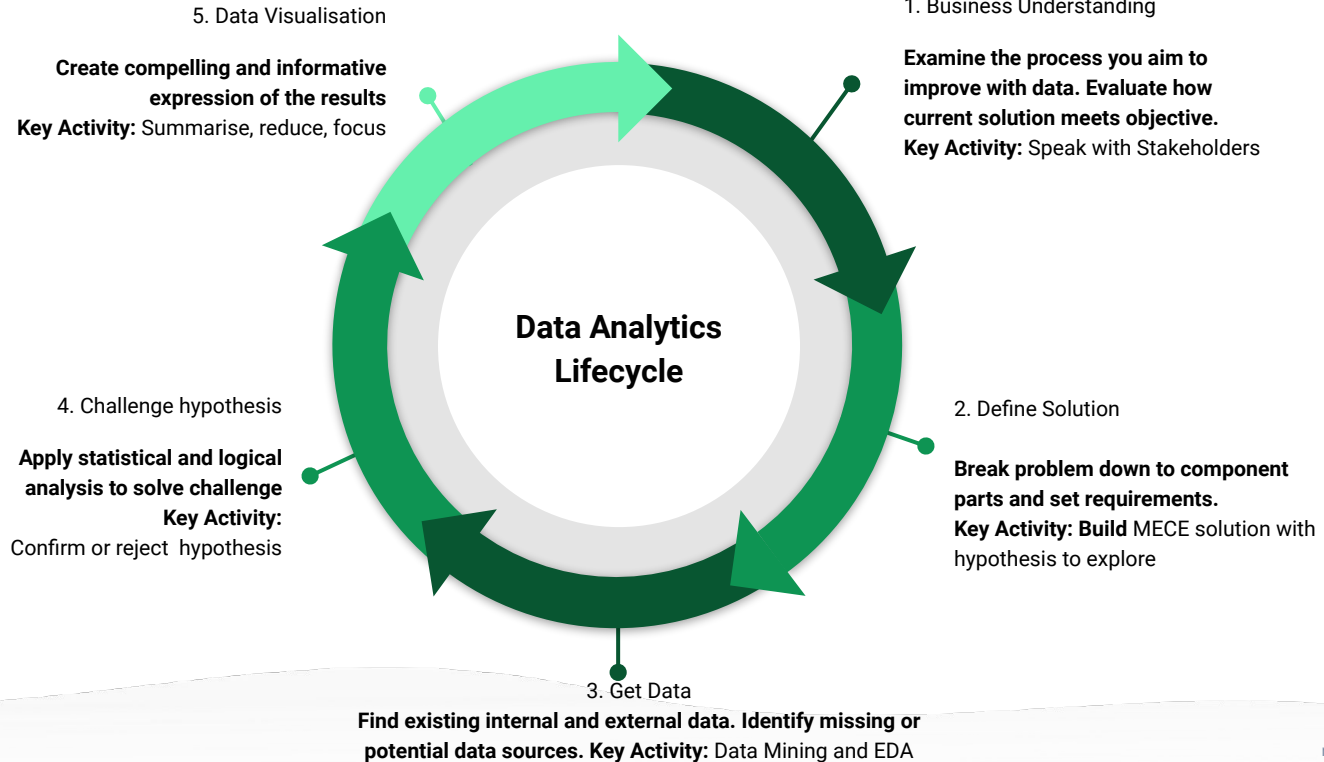
Analyst Workflow

Specialised skills are needed to progress up each step



Analyst Workflow

Circular Reality

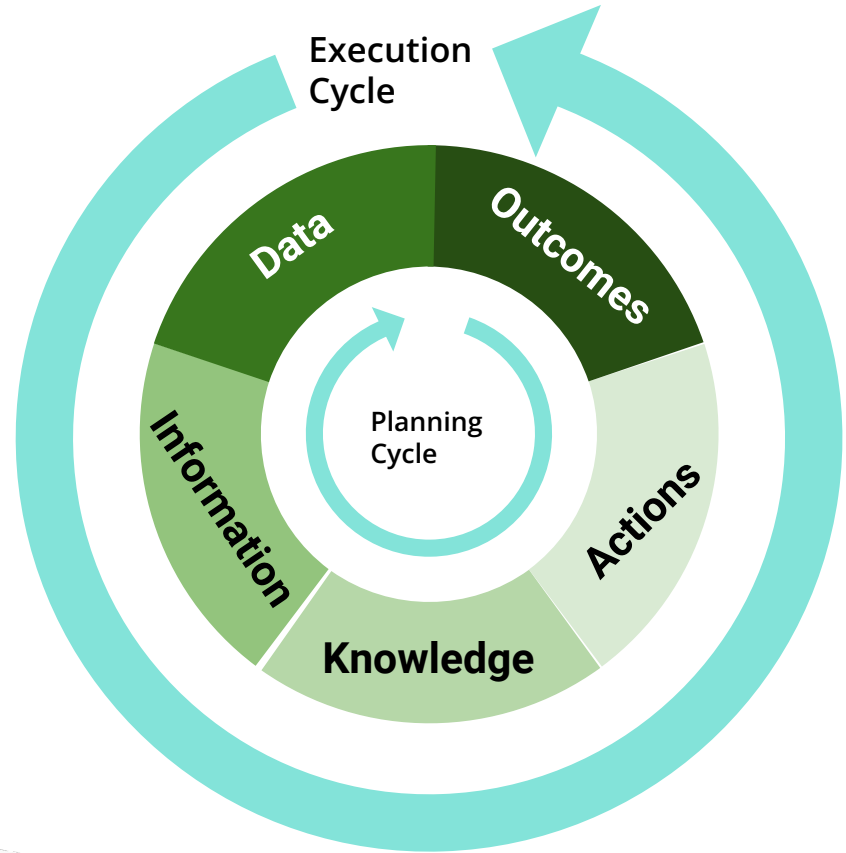


Analyst Workflow

Plan then Execute

Working in two directions:

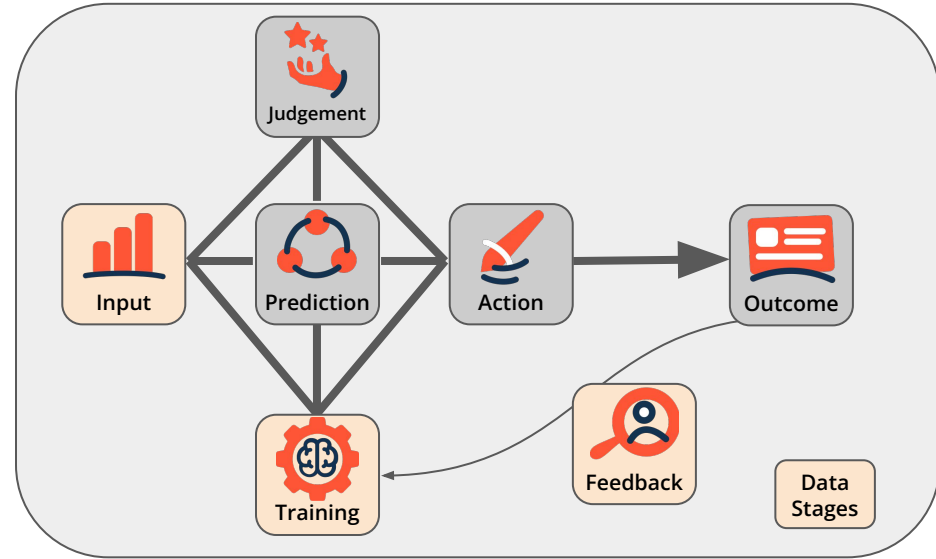
- When planning:
 - start with outcome
- When solving:
 - start with data



Analyst Workflow

Understand Decision Making

- Different data is required for different purposes at different times of process



Agenda

Learn what problems to solve

3. Root Cause Analysis: Getting to the right question



Break Problems Down

Small is easier than big



Root Cause Analysis

5 Whys

- I need a USB-C to USB-A adapter
- I need to plug the cable from my laptop into my phone
- I need to transfer a photo from my phone to my laptop
- I need to get this picture of my signature onto my computer
- I need to put my signature on this file
- I have to sign a pdf contract



Root Cause Analysis

5 Whys: A marketing manager asks a data analyst for a detailed report on website traffic for the past year.

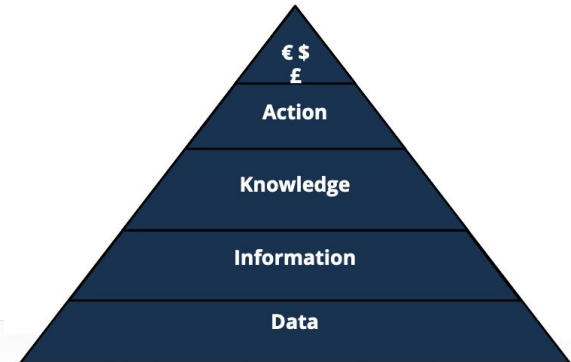
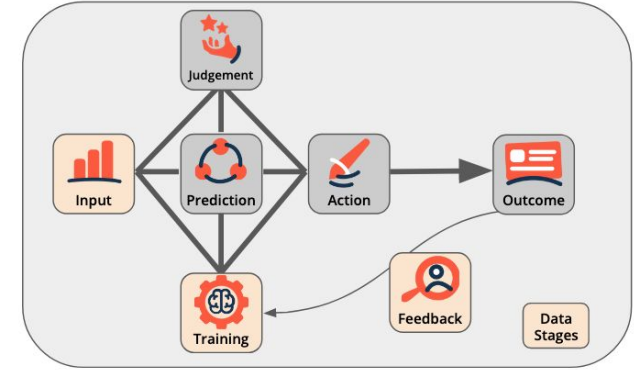
- I want to assess our website's overall performance.
- I want to compare it to the previous **year's** data."
- I want to identify any significant changes in our website's performance.
- If there are significant changes, it might indicate a need for adjustments to our marketing strategies.
- Ultimately, we want to ensure that our marketing efforts are effective and aligned with our business goals."



Finding scope of solution

Map the upstream and downstream processes

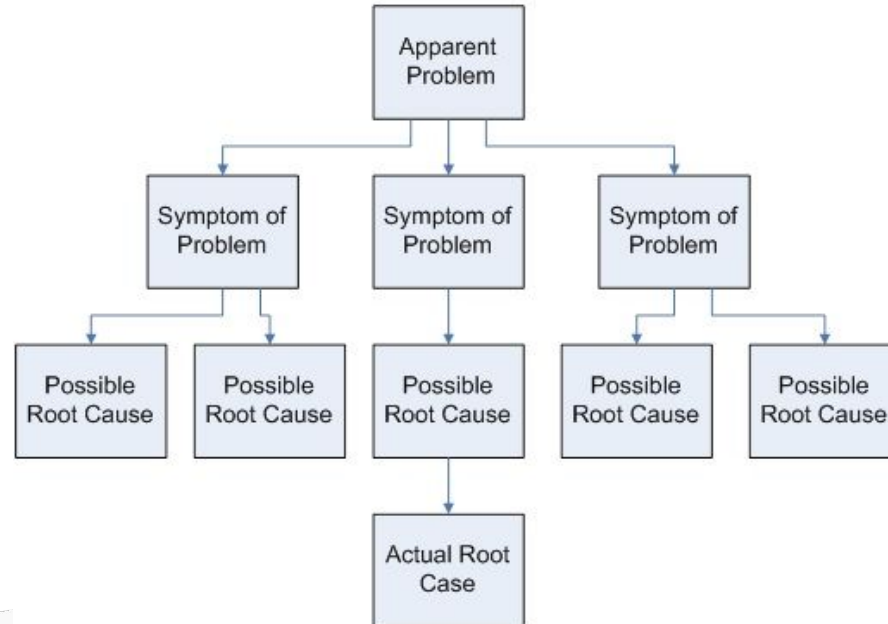
- Where in the task matrix is the stakeholder
- Increase the value of your work by moving up the Pyramid
- Map the discussion



Root Cause Analysis

Tree Structure

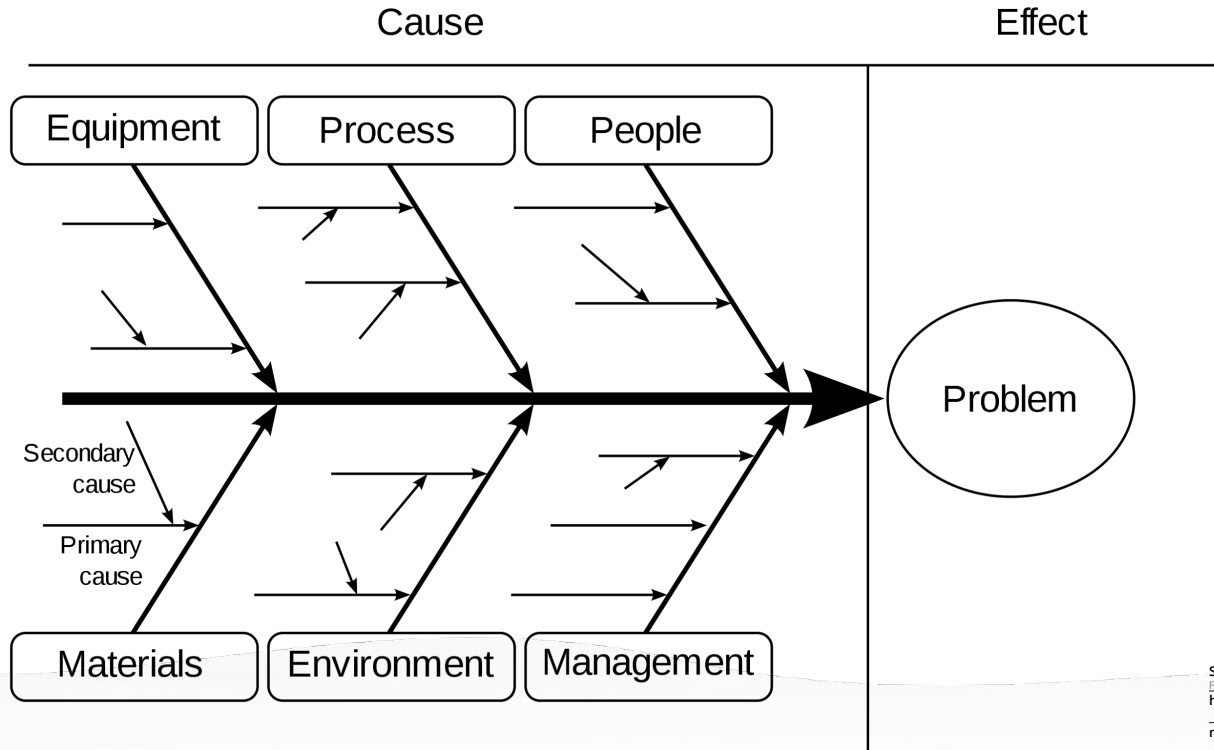
Root Cause Analysis Tree Diagram



Source: Wikipedia
https://en.wikipedia.org/wiki/Root_cause_analysis#/media/File:Root_Cause_Analysis_Tree_Diagram.jpg

Root Cause Analysis

Fish Bone Analysis



Source: Wikipedia

https://en.wikipedia.org/wiki/Ishikawa_diagram#/media/File:Ishikawa_Fishbone_Diagram.svg

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Summary

Useful Tools

■ Prioritisation

- Impact / Frequency Matrix
- 80-20 rule

■ Workflow

- Circular Analytics workflow
- Plan backwards
- Find the beginning

■ Getting to the question

- Tree Map
- Fishbone
- 5 Whys



Root Cause Analysis

5 Whys Exercise

[Exercise link](#)

(... to be found in your Google Drive)



Resources

Read more:

[Are You Solving the Right Problem? by Dwayne Spradlin](#)

[HBR: A Simple Tool to Start Making Decisions with the Help of AI](#)

[What Is SIPOC? How to Use a SIPOC Diagram](#)

