ICT Analysis

Solving Problems Creatively !

What is Critical thinking?

What is Critical Thinking ?

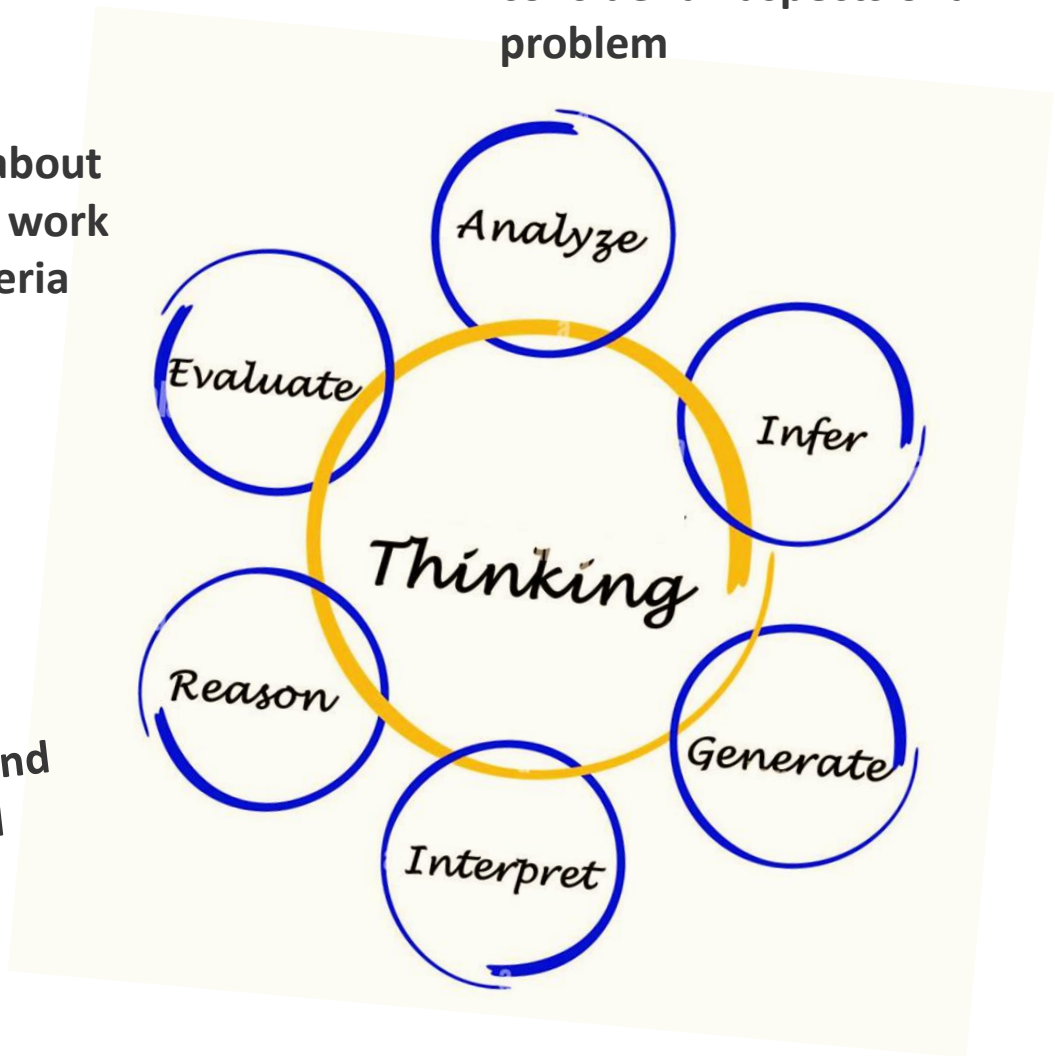
…an *objective* analysis and evaluation of something…

in order to …

form a *judgement* about the related *statements*

Examining information to consider all aspects of a problem

Making judgements about information, ideas or work based on a set of criteria



Problem solving - developing alternative solutions, evaluating alternatives and making a recommendation

Questioning - Asking for information to better understand the issue, gain perspective and challenge assumptions

Deciphering information to develop understanding

Basis for good Critical thinking

Thinking about thinking !

Scientific method

1. Point of View: Are the issues considered from different points of view.
2. Disposition: What type of attitude do we bring to the issues
3. Procedures: Is a process followed
   (eg: asking questions, identifying assumptions)
4. Criteria: Are beliefs properly established (eg supported by data).
5. Logic: Does thinking proceed from facts, data and evidence.
6. Reasoning: Are conclusions inferred from supporting evidence

Example - Critical thinking

A manager analyzes customer feedback forms and uses this information to develop a customer service training session for employees.

Point of View: Customer

Disposition: Customer is always right

Procedure:

- Quantitative: Assess question vs rating
- Qualitative: Review individual responses

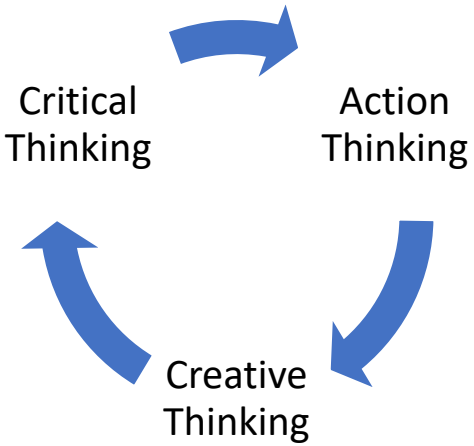
Criteria:

- Analyse and look for consistent low rating
- Analyse and Look for insightful responses

Logic and reasoning:

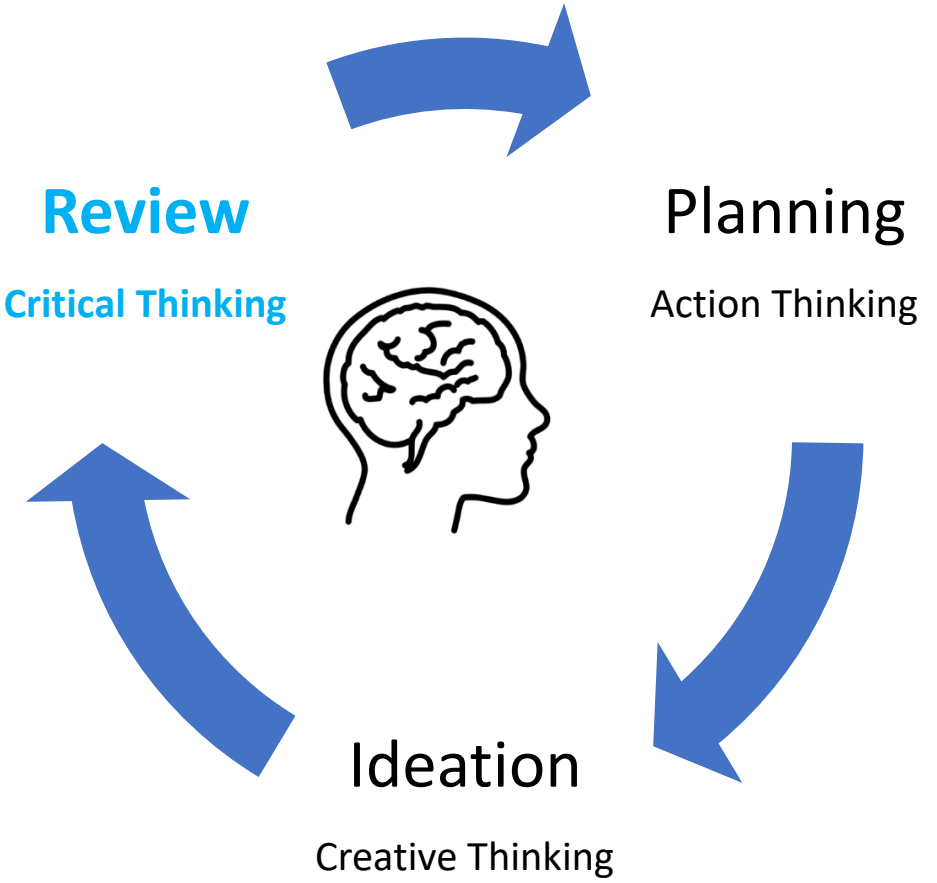
- Session built from analysis

Understanding bias in decisions



- **Status quo bias** - our tendency to stick with what we know, instead of choosing something new and different.
- **Anchor bias** – our tendency to rely too heavily on the first thing we hear. For example, its what makes discounts appealing even if it shouldn't be the deciding factor.
- **Sunk cost bias** – our tendency to stay with something we have already invested in.
- **Halo effect** – our tendency to be influenced by strong feelings or impressions. For example, to be impressed by the charisma of a sales-person.

Critical questioning a solution



Asking critical questions

- Can it solve the problem ?
- Will it deliver significant value?
- Is the proposed solution realistic ?
- Is the proposed solution economical ?
- Is the proposed solution fair and ethical ?
- Are there more advantages than disadvantages ?
- Will it align with the organisational vision, mission and standards ?

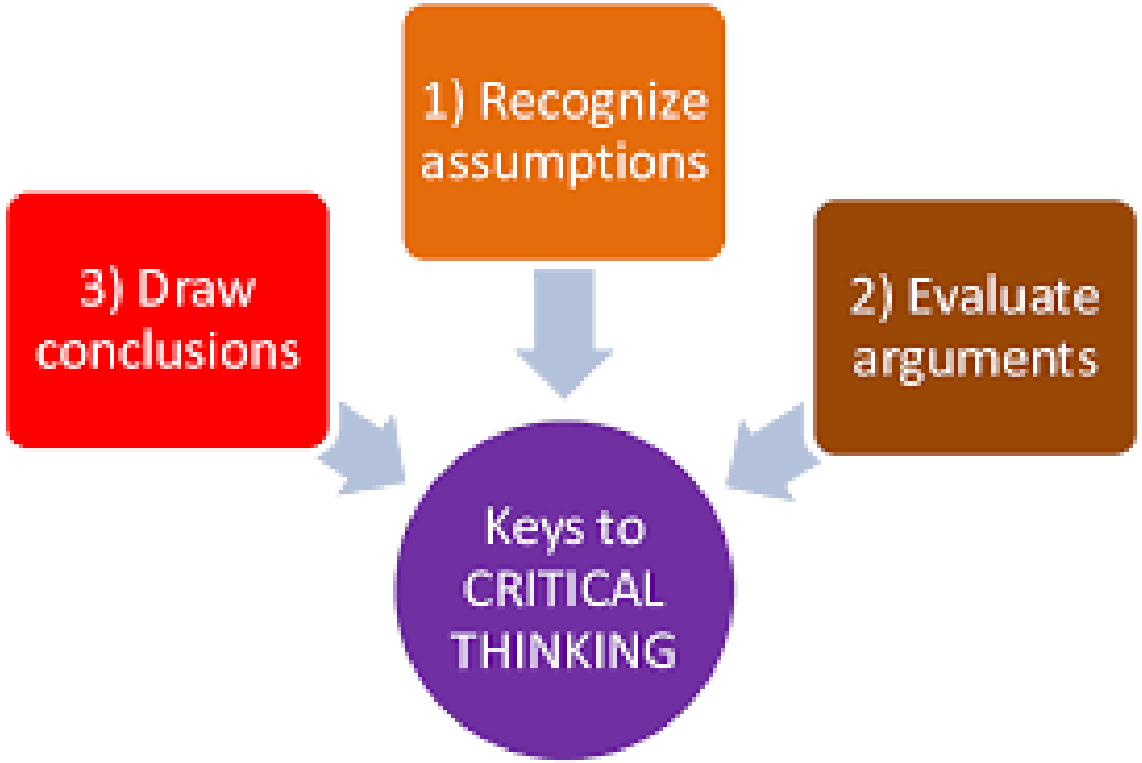
Critical decision-making models

A process intended to get the best possible outcomes independent of beliefs, perceptions and self-interests…

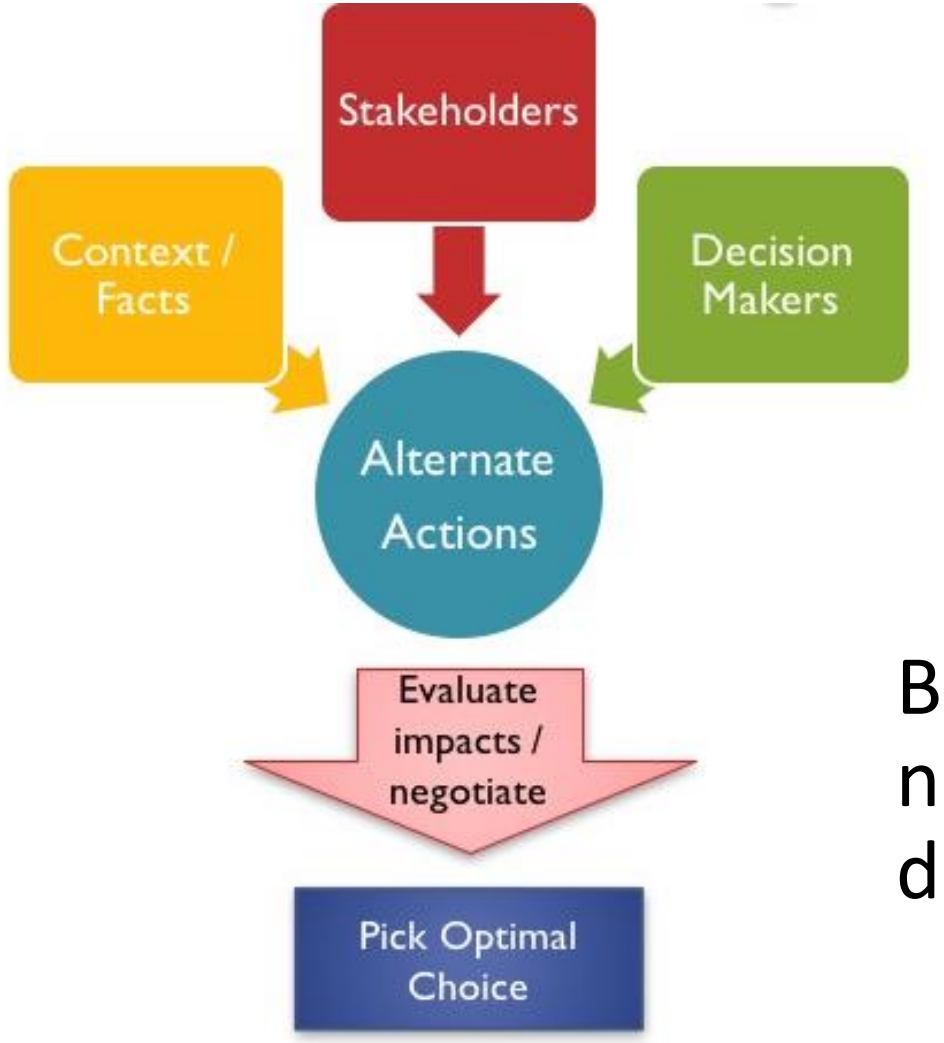
Value based Critical Decision model

Pearson RED model

A 3-step method to critically evaluate ideas and inform decisions



Ethical decision-making models



Bring an increased focus on the non-deciding stakeholders in a decision-making process

Tools for Creative and Critical Thinking

Mind maps – Exploration

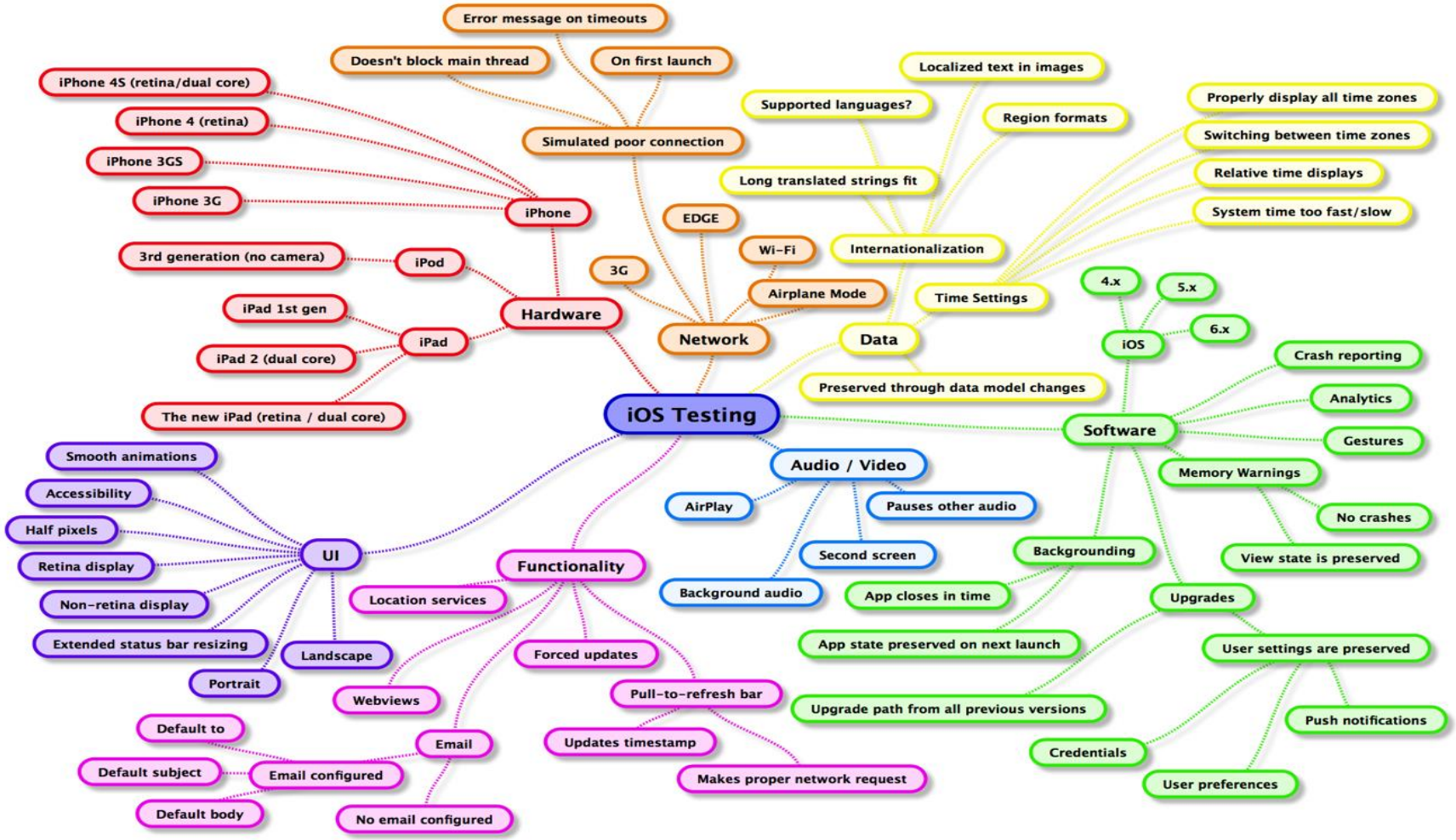


Image source: pinterest.com

The 5 W's – Questioning

1. What do we know about the issue?
2. What else has recently changed?
3. What is the current environment?
4. When does the issue occur?
5. Has the issue occurred before?
6. How often does the issue occur?
7. Are other people having the same issue?
8. How has this issue been solved in the past?

Socratic methods - Questioning

Clarification questions

What do you mean by...?
Could you put that another way?
What do you think is the main issue?
Could you give us an example?
Could you expand upon that point further?

Questions about an initial question or issue

Why is this question important?
Is this question easy or difficult to answer?
Why do you think that?
What assumptions can we make based on this question?
Does this question lead to other important issues and questions?

Assumption questions

Why might someone make this assumption?
What is _____ assuming here?
What could we assume instead?
You seem to be assuming_____.
Do I understand you correctly?.

Reason & Evidence Questions

What would be an example?
Why do you think this is true?
What other information do we need?
Could you explain your reason to us?
Is there reason to doubt that evidence?
What led you to that belief?

Origin or source questions

Is this your idea or did you hear if from some place else?
Have you always felt this way?
Has your opinion been influenced by something or someone?
Where did you get that idea?
What caused you to feel that way?

Implication and consequence questions

What effect would that have?
Could that really happen or probably happen?
What is an alternative?
What are you implying by that?
If that happened, what else would happen as a result? Why?

Viewpoint questions

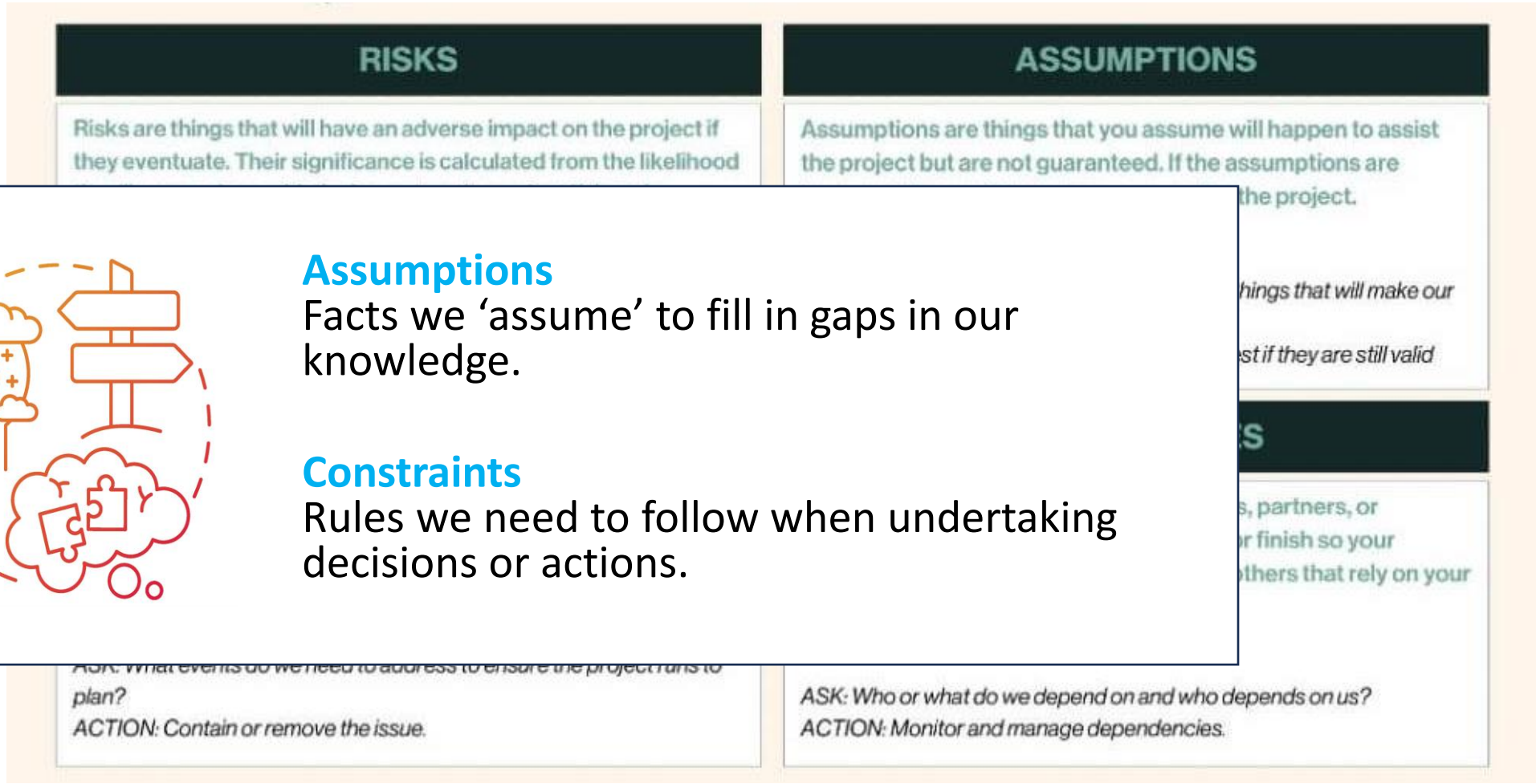
How would other groups of people respond this question?
Why?
How could you answer the objection that _____would make?
What might someone who believed ____ think?
What is an alternative?
How are ___ and ___'s ideas alike? Different?

Image source: leadershipeffect.com.au

SWOT Matrix - Interpreting

Helps understand all aspects of a decision or solution

RAID - Interpreting



Assumptions
Facts we 'assume' to fill in gaps in our knowledge.

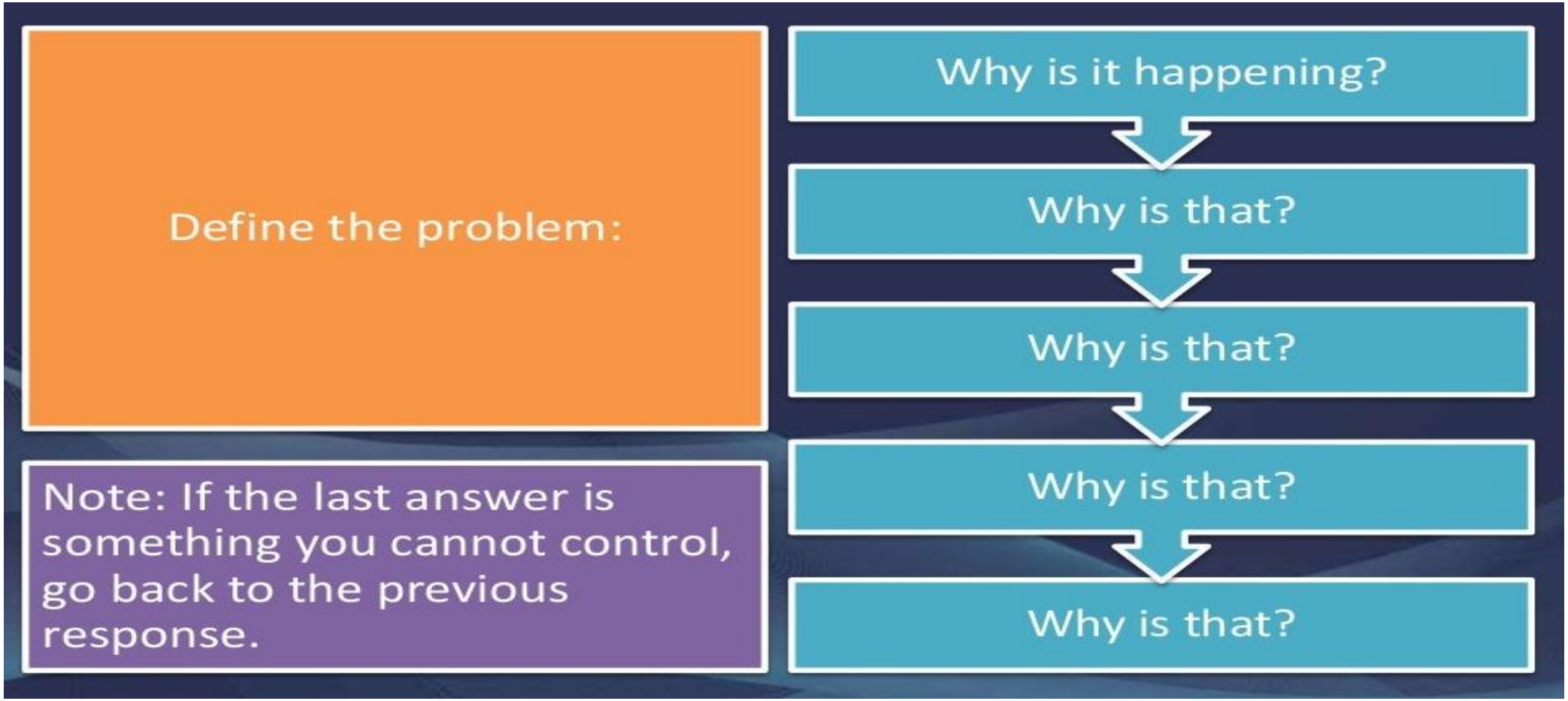
Constraints
Rules we need to follow when undertaking decisions or actions.

Image source: leadershipeffect.com.au

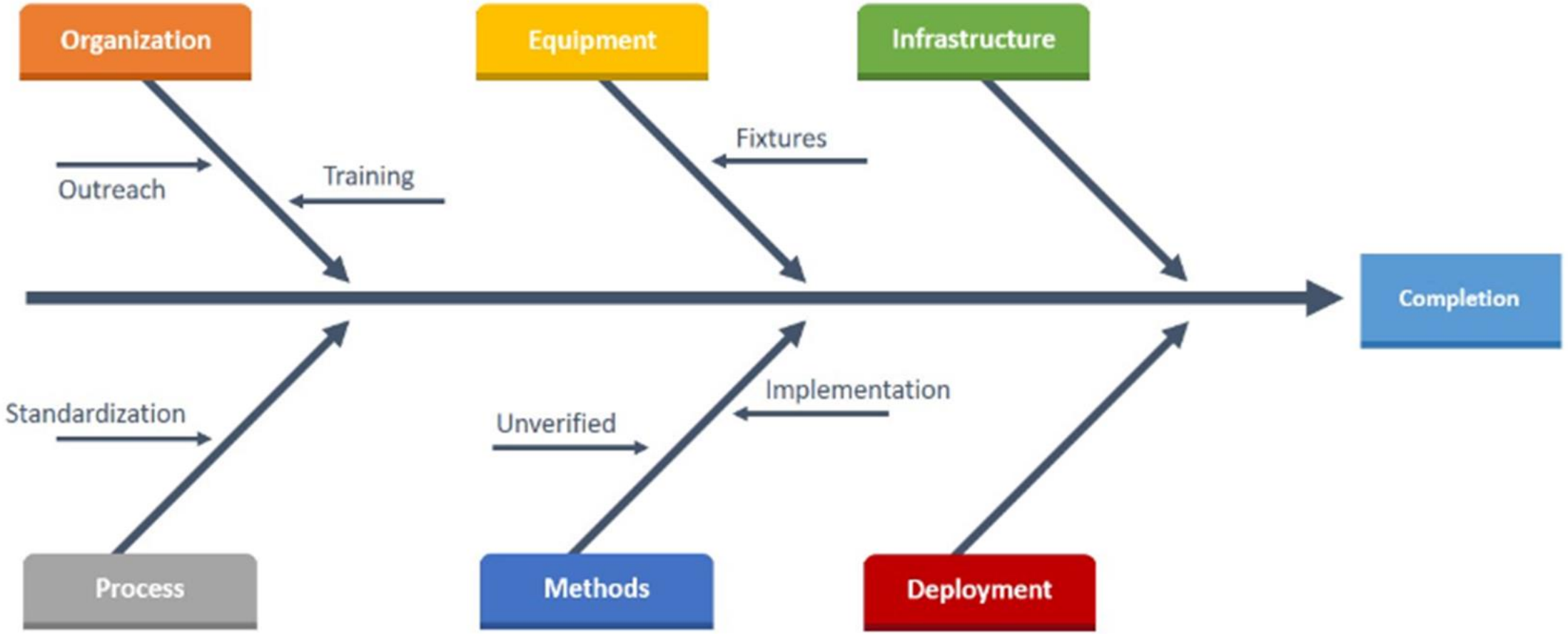
The 3 What's – Problem solving

What?	So What?	Now what?
Lockdown forces us to stay at home	We are unable to work in the office together	Invest in Microsoft Teams and better collaboration software
Everyone has to work form home	Not all have a good setup at home	Make a small budget available for remote work tech (e.g Second Display)
COVID prevents our annual conference	Canceling would cause income loss since we already collected payments	Switch to 100% virtual conference

The 5 Why's – Root cause Analysis



Ishikawa– cause and effect analysis



Pros and Cons Matrix – Evaluating

‘My way is, to divide half a sheet of paper by a line into two columns, writing over the one pro, and over the other con’
Benjamin Franklin

PRO	PROBABILITY	IMPORTANCE	WEIGHT	CONS	PROBABILITY	IMPORTANCE	WEIGHT
Lorem ipsum dolor sit amet	10%	60%	6%	Lorem ipsum dolor sit amet	20%	30%	6%
Lorem ipsum dolor sit amet	30%	20%	6%	Lorem ipsum dolor sit amet	50%	40%	20%
Lorem ipsum dolor sit amet	60%	30%	18%	Lorem ipsum dolor sit amet	40%	60%	24%
Lorem ipsum dolor sit amet	40%	80%	32%	Lorem ipsum dolor sit amet	80%	20%	16%

Image source: thinkinsights.net

Benefits of critical thinking

- Deepens understanding
- Enhances creativity
- Reinforces problem solving
- Builds troubleshooting skills
- Assists planning and decision making
- Develops leaders

Risks of not adopting critical thinking

- Lack of innovation
- Lack of clarity
- Poor decisions
- Poor organisational strategy and direction

Any Questions?