

## Analytical Thinking

### What is Analytical Thinking?

We often accept that a statement is true or correct because 'it stands to reason' or 'it's common sense'. Whilst the statement may well be true, how do we know it is so? We are often content to accept it without even thinking about it, far less challenging it, because it seems OK on the surface. Analytical thinking has been described as:

***'The logic of turning of raw data into useful information.'***

Some people will find this comes naturally, others less so.

### Some basic rules for analytical thinking

- **Start with known facts** and figures, not beliefs and assumptions.
- **Check back** to make sure you are looking at causes, not symptoms.
- **Compare like with like.** For instance, if you are comparing one month's sales or cash collection with the same time last year, make sure there were no variables such as Easter which affect one set of figures only.
- **Avoid opinions** unless and until these are supported by facts. Although ideas for conclusions may be welcome, they are only ideas.
- **Dig deep and sift** evidence for relevance. If something is not relevant, do not use it just because it points to a conclusion you like.
- **Test your conclusions.** You will often be able to draw more than one conclusion from your analysis; test each one to see if it is possible, probable, and relevant.
- **Make sure all relevant information is included** in your thinking, and no random but relevant factors have been omitted.
- **Beware 'dodgy logic'** where two true statements appear to make a third one true, which is in fact false.

#### **Example:**

- |   |         |
|---|---------|
| • Last month was April.                                   | (True)  |
| • Last month we sold more machines than an average month. | (True)  |
| • Next April we will sell more machines than average.     | (False) |

*In fact, the rise in sales may be due to a particularly big order from a Council (for example) and was co-incidental with it being April.*

*Analytical thinking is in many ways the opposite of creative thinking; although you may have flashes of insight or inspiration, they should be treated as possibilities until proven. It is not safe to take short cuts when thinking analytically, as some vital fact may be assumed or data omitted.*

*Analytical thinking has also been described as the opposite of strategic thinking as one is about detail and the other is about a top line overview. However, for maximum effect, both should be used together as needed.*

## A process for analysing an issue

1. **Start by going back to the root** of the issue; the sales figures, margin made, etc. until you reach data which cannot be disputed. Make sure you are looking at the cause, not the symptoms. At this point, avoid using conclusions that other people have reached from this data; they may well be flawed.
2. **If necessary, take the data apart** and examine how it was reached before accepting it as factual. For example, if a customer survey shows something to be true, would asking different customers have reached a different conclusion?
3. **Weight the facts** where necessary. Look for likely causes rather than spurious ones.
4. **Sift and sort the data**, and gradually re-assemble it, checking all the way that random or irrelevant data is identified as such and where necessary discarded.
5. **Compare like with like** as outlined above.
6. **Estimate a likely answer** where appropriate; if your final answer is way out from this, check carefully you've not made an error of logic.
7. **Form hypotheses**. These are statements such as 'Given the data, we have, is it safe to conclude that.....?'
8. **Challenge the hypotheses**; if they stand up to examination, they may well be true. You should also challenge anyone else's conclusions in the same way.
9. **Weigh up the options** and use your logic to decide which fits the facts best and is most likely to be correct.
10. **Construct future hypotheses** if appropriate, such as A could lead to B or C depending on D. This will assist forward planning. Remember however that these are only hypotheses until they happen.

### A hypothesis:

- Sally has sold more products than Richard. (Fact)
- Richard has made more margin than Sally. (Fact)
- Richard has sold higher margin products. (Hypothesis)

Although this would appear to be valid logic, in this case it would be wise to check what products they have sold before accepting this as a safe conclusion.

### For related topics see Top Tips:

- **Creative Thinking**
- **Decision Making**
- **Problem Analysis**
- **Strategic Thinking**