Handling Information and Data

When pulling together information and data to create meaningful communications, it is important to interpret it in order to draw conclusions, then present these results in a way that is easily understood. This article outlines the difference between information and data, providing guidance on the practice of processing and presenting information and data.

The difference between information and data
The terms 'information' and 'data' are often confused, but there is a considerable difference between them. Data are the raw objective facts (e.g. numbers, statistics, dates). Once they have been analysed and a useful meaning has been established, it then becomes information, i.e. it informs or provides meaning. So, information is facts (or data) processed into a form that is meaningful and will improve knowledge. (NB: data is the plural, i.e. a number of facts, while datum is the singular, i.e. a single fact.)

Qualitative and quantitative
There are two broad types of information or data: qualitative and quantitative.

- **Quantitative** is information that is definable, can be measured, and is normally expressed in figures. This type of information is particularly valuable for making comparisons between targets and results, between specifications of resources, or finished products.

- **Qualitative** is information that is descriptive and may involve value judgements or opinions. This type of information is more useful when analysing people’s views on products or services. Each individual is likely to have different opinions as to what is good or bad, and what could be done to improve a product, service or situation.

Processing data
- Techniques for analysing data are best selected with regard to the type of information collected.
- Quantitative data will rely on statistical analysis, while qualitative data might include analysis of transcripts from questionnaires, or survey results. However, when analysing any data, it is important to start by reviewing the objectives of the research, including research aims, purpose and audience. This will help in organising the data and ensure that the focus is only on what is relevant.
- Often the data or information collected is unwieldy, such as numerical data, interview transcripts and survey responses. It therefore needs to be processed and reformatted into a usable format before any conclusions can be drawn from the findings.
- Summarising information or data will help to identify patterns and compare results. For example, tables can list key criteria such as gender, age or educational background of respondents. Numerical data can easily be summarised in mathematical terms, such as averages or frequencies.

Ref: [http://member.goodpractice.net/Leadership-Foundation-KB/resources/personal-skills/handling-information-and-data/handling-information-and-data.gp](http://member.goodpractice.net/Leadership-Foundation-KB/resources/personal-skills/handling-information-and-data/handling-information-and-data.gp)
Once information has been summarised, it is much easier to identify patterns and interpret meanings from the data. However, if the information is in a very cumbersome format, it may be necessary to process it further before summarising. Quantitative and qualitative information can also be processed using specially tailored computer software, designed to reveal patterns in the data collected.

Presenting data

- Once all the data have been collected and processed, the next step is to present the results in the form of a report, a presentation, or whatever form is most relevant to the research.
- The purpose of presenting the data is to convince the audience that meaningful and productive information has been produced. Therefore, the interpretation of the results must be clearly supported by the data as evidence. It is also important to be open with the audience about the steps in the research process: what methodology was chosen, what other methods were considered and why they were disregarded. Provide as much background information as possible (without making the report too long or complicated). By informing the audience of plans and choices, they will trust the credibility and validity of the research.
- Both qualitative and quantitative data can be presented in a variety (or combination) of the following formats:
  - Written – any form of text or written information.
  - Oral – for example, in speeches or presentations.
  - Pictorial – photographs, drawings, etc.
  - Graphical – in a chart or graph depicting numerical information, showing the relation of one variable to another in the form of a diagram.
  - Numerical – information given in a number value format, such as statistics.
- When reporting data, it is crucial to present the information clearly. Diagrams, photographs, tables, maps, graphs or other visual representations will negate the need for lengthy description. All visuals should be numbered consecutively, presented in a consistent style, and have a caption or a heading. If graphs are used, all axes must be labelled and measurements shown clearly. When using information from other sources, it is vital to ensure that it is properly referenced. When writing a report, all the information should be listed in a contents page so that it is easy to find. If the report is very long it may be beneficial to include a more detailed index of contents at the end of the report, so people can use this to get straight to the page required. If there is a lot of supplementary information, such as data tables or photographs, it may be more appropriate to include these as appendices to the main report.
- The level and range of information presented will depend on the audience for whom it is intended. If it includes any recommendations, it is a good idea to follow these with action plans, stating responsibility (i.e. who is going to do what as a result of the findings, and by when). It is also a good idea to record the research methodology, which can be referred to in the future whenever a similar research effort is needed.