Investigating a document layout

You will require computer access for this activity.

Have a look at the manuscript instructions provided by INCOSE (the International Council for Systems Engineering) for its annual international symposium. Using your Internet browser, go to the 2006 INCOSE international symposium website at **www.incose.org/symp2006/**

In the left-hand panel on that web page you will find 'Manuscript Instructions/ Template'. Click on this and the template instructions will be downloaded as an MS Word file (**Manuscript_Template_2006.doc**). Look at the layout instructions in this file.

When considering the layout of the contents of a report, your aim is for your reader to be able to concentrate on what you are saying (that is, your words) without any distractions caused by the layout. Therefore, keep the content layout simple and consistent.

In addition to the layout instructions already given, here are a few more simple guidelines to help achieve this:

- Don't end a page with a heading or subheading
- Ensure that lists are aligned using correct indentation
- Don't let the last word of a paragraph end on a separate page (instead, insert a page break to ensure at least one complete line appears on the following page)
- Make sure that all your table captions are consistent (with the same justification and font size and type)
- The final thing you should do before printing off or sending off a document should be to check its page layout.

Report structure

In an important sense, the structure of any document – the nature and extent of the different sections, and the order in which they appear – represents the design of the document. A good document structure will take into account the purpose of the document and its target readership. When writing a report, you are not being asked to write a textbook, but to competently conduct a piece of work for an informed readership. In the case of your project document, its primary purpose is to report on your project, and its primary audience is your examiners. Many project reports are far too long and lack purpose.

A student project report is a combination of status, progress and forecasting reports. However, by its nature, a student project report has also to have considerable elements of specification within it – this will not typically be the case in industry project reporting (unless there are specific technical issues that need consideration during the review).

To satisfy your readers – the examiners – you should be aiming for:

- **Continuity:** so that your material is ordered both so as to demonstrate the development of your work and to develop the reader's understanding

- **Completeness:** so that you give as full account of your work as is necessary and (especially) that nothing significant is left out. Put simply, the report must tell a story – a full story, and an interesting one.

Unlike an essay, a report contains headings and subheadings that support the storyline. Each subheading may be further divided into subsections or subdivisions. Each section and subsection is numbered and relates to the 'design' of the story.

To develop and improve the continuity of a report, it is necessary to pay more attention to the fine structure of your document – to how the individual chapters within the main body of your report are designed. If these are thought out beforehand, in outline or even just as subheadings, then at least you will know where you are going as you write. For each subsection in your outline plan, try to begin with a more general idea (or a broad picture) and then develop your argument (or focus) towards the more detailed points or areas you want to consider. This follows the maxim 'Move from the general to the particular', which is also useful when you finally come to write the paragraphs.

The main sections

Any report that you are developing will be divided into sections. Here we shall discuss the specific requirements for your project reports. Typically, the sections supporting the general flow of the story of your project should include:

- **Title page:** state the title, your full name, the qualification for which the work is being submitted, the university name and the date of submission.

- **Abstract:** a synopsis of your work, which gives a flavour of the work and encourages busy researchers to read on: a brief informative summary of about 250 words normally written as the last item in your project when everything else is already known (so that it can encapsulate what the project is actually about). The abstract summarises the content of your report, the scope of the work, the research methodology used, and the main findings or conclusions.

- **Acknowledgements:** this section provides acknowledgements of help from supervisors, other members of staff, colleagues who helped and any other relevant people. Where access to facilities, resources or individuals was provided, this must be mentioned and the relevant providers thanked. Don't forget to give credit to any individuals who may have commented on early drafts of your work and to helpful librarians and technicians.

- **Table of contents:** this table gives the full headings of all chapters (and the sections within them) with the appropriate page numbers. It should also list the appendices in similar fashion. Page numbers should be right-margin aligned.

- **List of figures:** if any figures appear in the text, this list will provide the number and name of each, together with the relevant page numbers. Note that sometimes this may be split into a List of Figures and a List of Tables (if the report contains many tables in addition to diagrams and charts). Number your figures consistently using either sequential numbering (for example, Figure 1, Figure 2 and Figure 3) or numbering within chapter (for example, Figure 1.1, Figure 1.2, Figure 2.1, Figure 2.2, Figure 2.3 and Figure 4.1). Tables should be numbered separately from figures (for example, Table 1, and Table 2 or Table 1.1 and Table 1.2)

- **Abbreviation list:** if you have used any abbreviations (for example, abbreviations of components, methodologies or different sections within an organisation) within the text, you should list them in this section for easy reference (just before the main report)

- **Introduction:** the introduction contains a brief outline of the topic as a whole. The aim and objectives of the report are then stated. What is the purpose of the report and what did it set out to investigate? There should be no indication of the author's own personal stance on the topic. The statement 'the impact of the proposed M39 to the East Dublin region' is more appropriate than 'the M39 will damage all the wild life in the area'. The second statement may be the conclusion of the report or indeed the findings of the report, but it cannot be the objective.

  The introduction is probably the first chapter that you will write as it sets out the work. It is probably also the last chapter that you will rewrite to reflect the changes that have taken place in the work

- **Method consideration:** explaining your choice of method

- **The context:** this section examines the organisational context of the project. For example, was the investigation carried out by a well-financed, well-resourced multinational organisation, or carried out by a local group concerned about the environment? These factors may affect the information gathered. A group from a multinational organisation may have talked to businesses, but found local residents unco-operative. They therefore would be unable to give a clear idea of local feeling towards the proposed road. On the other hand, a lack of money may affect the report of the small local group. They might not be able to carry out large-scale surveys. They may rely on the generosity of others to gather scientific information and ecological studies

- **Literature review:** review of previous research highlighting useful work on which you can build. Even a project focusing on a particular organisation will benefit from a literature review! If your project is more practical, this chapter should focus on the context that you are operating within, typical applications, alternatives tools and development approaches and how they have been used in practice or on alternative systems and what they do or do not achieve

- **Research design** (also known as research methods or methodology. This section is only needed for research-oriented reports): This section should include general research approaches, the information or data you need, methods for obtaining it, sample sizes and techniques for collecting and analysing the data. Note:

  Practical problem-solving projects may also feed in the structure of the lifecycle to take full account of the phases and activities that have taken place. This may replace the research design chapter (or sit alongside it).

  Remember that you need to relate your choice of method to the objectives and be discriminating in your choice. This will apply equally to research methods and development tools and processes.

  You could also add, or replace, sections to explain the various stages of the development lifecycle of your product

- **Results:** your data and findings

- **Evaluation:** discussion and analysis of the results with the aim of either validating or refuting the results. Here the collected information is evaluated to determine what conjectures can be deduced from it. All information is brought together and analysed and an evaluation is made

- **Summary and conclusion:** the final section summarises the project as a whole, outlines the main findings and lists the recommendations of the project. The summary should include what you set out to achieve, how you went about it and what you ended up doing. The conclusion section is also likely to include any limitations on the interpretation and recommendations for future work to be carried out in this area. The project planning should also be described and critically evaluated in light of actual events. If certain aspects were compromised as a result, you should explain why the decision was made and what impact it had on the project

Any omissions or scope reduction will contribute to additional further work, which can be recommended. Don't forget to comment and retrospectively evaluate both the product and the process used.

In this way you will get a chance to explore what you have learned and how you would do it differently next time. Note that this section may be split into two sections or even more – it depends on the number and type of comments that you have to make

- **Appendices:** additional material which did not make it into the main sections, but which is relevant to the report should appear as separate appendices. Such material should be self-explanatory or can be referred to from within the report itself. The appendices can also include material, which contained too much detail or was too lengthy for the main report. For example, you should aim to include lengthy items such as program code, raw data, text of questionnaires and detailed statistical analysis as separate appendices. This will enable the examiners to read them separately from the report

- **References:** a complete list of all the works mentioned in the text (and possibly in the appendices). Full bibliographical details are needed for each entry. If you feel there is a need for a brief bibliography that lists key books, papers and articles that you have not referenced, you may add a bibliography

- **Index:** not normally required for student project reports.

Activity 4.5

Creating a document structure

Try creating a title page and a table of contents for your project. Use the report structure just presented in this chapter to help you.

Prepare:

- A title page

- A draft table of contents.

Remember, before starting to write a document, you should always determine what document standards and/or document templates apply.

Some organisations will have both document layout standards and specific document structures for specific types of document – there may or may not be document templates available for use. For example, a feasibility study might have to contain certain standard sections, and would fail quality control checks unless it contained these sections.

Structuring an argument

Notice how any story flows from one section to the next in order to form a cohesive storyline. The core of any report is the argument (the storyline) it presents. The argument must be clearly defined and well presented. Without a clearly defined argument the material in the project report becomes little more than a list of unrelated ideas and facts, which serve little purpose. All information in your report should go some way towards proving the main argument in the essay is correct.

The structure of an argument has a number of different sections. Each section contains information vital to structuring your argument, and the sections should link together to make a unified storyline. It is not only reports written for university assignments that are structured this way. If you read any material written by academics in journals or books, it will also follow the same basic structure.