

The grant-writer's toolkit

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1 Why you need a toolkit.

The grant-writer’s toolkit is a set of tools that can be combined to assemble a generic ‘case for support’, which presents an idealised research proposal. This document is part of the support package for a workshop that explains the design of the tools and the toolkit. We start by considering the job that the case for support has to do.

An application for a research grant usually consists of two parts, a statement of the funds being requested, and a *case for support*. a statement describing and justifying the research that will be carried out if the funds are granted. Usually the funding agency specifies how to write the statement of funds being requested. The workshop is about how to write the case for support.

It is my experience that in the vast majority of grant applications, probably more than 90%, the case for support has elementary design flaws. Typically about 20% or more of applications get funded. This means that the traditional way of learning to write a case for support — imitating a successful example — is rather hit and miss. Most successful grant applications achieve their success despite, rather than because of, the case for support.

Here we approach the problem of how to write a case for support by considering the job it is trying to do. A grant application is, at its heart, a request for money. The job of the case for support is to persuade a funding committee to support a research project.

In order to work out how to design an ideal case for support, we should start by analysing the funding decision.

1.1 The funding decision

For our purposes there are three important questions about funding decisions.

1. Why do funding bodies give research grants?
2. Who makes the decision?
3. How do they make the decision?

Most grant applications focus exclusively on the question of why funding bodies give research grants and assume that the decision is made by a rational being with infinite wisdom, consummate patience and an inexhaustible capacity to extract information from written text.

However, we shall see that this is a bad strategy. The decision process is imperfect. It relies on very scanty information and it can be heavily influenced by the way the case for support is written.

1.1.1 Why do funding bodies give research grants?

The primary reason that a funding body awards a research grant is that the research described in the application gives a realistic prospect of answering an important research question in a cost-effective way. The case for support has to convince those who make the funding decision of two things:-

1. that the research question is so important that it is better to pay the price of the research proposal than to leave the research question unanswered, and
2. that the project described in the research proposal will answer the research question.

In this sense the application is a proposal to the funding body "If you give me the money, I will answer the question". For this reason we refer to the case for support as a proposal. In order to design the case for support in such a way that the funding body accepts the proposal and funds the application we need to consider who makes this decision and how they make it.

1.1.2 Who makes the decision?

Funding decisions are made by a grants committee of 'experts'. Failure to appreciate the limitations of the committee-members is the commonest, and the most damaging, mistake a grant-writer can make. There are two important limitations.

1. They will not be experts in your subject area. Although the committee consists of experts, usually the area covered by a committee is so broad that each of them covers only a tiny fraction of it. Consequently it is very unlikely that more than one of them has a deep knowledge of your research area. Indeed it is quite possible that none of them will. The names of committee members are often made public so it may be possible for you to check whether they are experts in your research area.

2. They will not have much time to understand the details of your application. They have very demanding jobs. They will also probably be running their own research projects and writing their own grant applications. They will receive your grant application as part of a bundle of several dozen that will arrive a few weeks before the committee meeting. They will read the applications in this massive bundle in snatched minutes of spare time, in their offices, in their laboratories, during boring meetings, on trains, buses and planes, in taxis, in bathrooms, in hotel dining rooms.

It is important to remember that, despite these limitations, a committee will be reluctant to fund a proposal that they do not understand. This means that the case for support has to enable them to understand the proposal. The best way to do this depends on how the committee makes the decision.

1.1.3 How does the committee make the decision?

The first thing to note is that the committee works very fast, and makes its decision on the basis of a relatively hasty appraisal of your proposal. At the most recent grants committee meeting I attended, 72 proposals were dealt with in 6 hours - that is 5 minutes per proposal.

Usually two members of the committee are designated to read a grant and present it to the committee. The designated members (DMs) present the grant orally to the committee, giving a synopsis of the proposed research and its background, an evaluation of its quality and relevance and a recommendation for the score.

The committee then discusses the grant and assigns it a score. Grants are then ranked by score and the highest ranked grants get funded.

The role of the designated member is not easy because of the complexity of individual proposals and the large number they have to deal with. It is fairly common for the DM not to know very much about the research area, let alone the precise topic of the research of a proposal. Moreover they will be under a lot of pressure as they will probably have other grants to present at the same committee meeting. At the meeting referred to above I presented 12 of the 72 proposals.

Despite all these limitations, the success or failure of the grant proposal depends on the view that the committee forms after they have listened to the designated member's presentation.

1.2 Objectives of the Case for Support:- Know, Understand, Believe

This account of the funding decision shows that in order for the case for support to do its job, the committee must know what the proposal is about, they must understand it and they must believe in it.

This triple task requires the case for support to be designed very carefully because the committee's exposure to it is extremely limited. Each member may have read it but it is much more likely that they will only have read the summary. If they have read the full proposal they will only have read it once and probably very hastily. However they will definitely have listened to an oral presentation lasting two or three minutes, given by two people with slightly more expertise than they have. These two 'experts', the designated members, may have spent as much as a couple of hours reading the proposal.

From this you can deduce that to write a successful case for support you will need tools to make the following three things happen very, very easily.

1. The DM must **understand** the proposal well enough to explain it to the committee clearly and convincingly.
2. The committee must think they **know** and **understand**:-
 - the nature of the research question;
 - why the question is important;
 - how the question will be answered by the proposed research;
 - how the answers will be disseminated.
3. The committee must also **believe**:-
 - (a) that the applicant is capable of carrying out the project described in the research proposal,
 - (b) that the applicant's environment is suitable for the research,
 - (c) that the resources requested by the applicant are necessary to allow the project to be completed successfully,
 - (d) that the resources requested by the applicant are sufficient to allow the project to be completed successfully and
 - (e) that the proposal represents good value for money.

The grant-writer's toolkit has the tools to help you construct a grant proposal that will make all this happen.

2 The Toolkit

The tools are mostly ways of writing to make it more likely that the committee will process information appropriately. Some of the tools can be identified with known psychological constructs or theories. In some of these cases the Psychological theory is contentious but in every case, the tool works.

2.1 Working Memory and the Four Item limit

One of the most famous papers in Psychology¹ points out that we can remember a list of up to seven pieces of information without needing to make notes. This means that if we want a committee to remember something like the structure of a research proposal, that structure should have no more than seven elements. We shall refer to the elements of a research proposal as 'themes'.

Grants committee meetings are actually rather stressful, particularly for the designated member, so we can expect the capacity of working memory to be reduced. Moreover, we want the memory for the important themes of the case for support to be effortless. For this reason I suggest that in designing the case for support we assume that the capacity of working memory is no more than four items. Hence the research proposal structure, outlined above, has four themes:-

1. the nature of the research question;
2. why the question is important;
3. how the question will be answered by the proposed research;
4. how the answers will be disseminated.

Because this list has only four items it can be remembered effortlessly.

2.2 Chunking

Representing a research proposal as a list of four items is actually too crude. It does not allow enough information to be represented to give a convincing account of how the research question will be answered. Typically a three year research project will address several related sub-questions. To remember this level of the detail of the research we need at least eight items in our list. The problem is, how do we make it possible to remember the longer list?

¹George A. Miller, "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information," *Psychological Review*, 63 (1956)

'Chunking' is identified in Miller's famous paper as a way of extending the limit on the number of items that can be held in working memory. Chunking is the process of grouping a set of related items together under a single heading. The heading can be remembered as a single item and 'unpacked' when it has been remembered.

The representation of the proposal that I recommend using in the case for support splits the research question into a series of about four sub-questions. This gives a list of eight themes but we can combine the research sub-questions into a single item. The full representation of the proposal, which, in itself constitutes a tool, is as follows:-

1. the general research question;
2. why the question is important;
3. the general approach to answering the question;
 - (a) First sub-question
 - (b) Second sub-question
 - (c) Third sub-question
 - (d) Fourth sub-question
4. how the answers will be disseminated.

I refer to this representation of the logical structure of the proposal as the *schema* (see below). In one sense it is a list of four themes, but one of the themes is a sub-list of four themes which can be located and remembered easily because it simply expands one of the themes of the main list.

2.3 The Schema and the themes

The schema is a mental representation of the proposal's logical structure. The writer's schema of a generic research proposal is shown above. It is important to develop a clear schema for your proposal and to write it in a way that it builds a replica of your schema in the mind of the reader. Failure to do this runs the risk that the reader will form a schema that fails to represent important aspects of your proposal.

In thinking about how to use the schema it is easier to ignore the chunking and present it as a linear list of eight themes:

1. the general research question;
2. why the question is important;

3. the general approach to answering the question;
4. First sub-question
5. Second sub-question
6. Third sub-question
7. Fourth sub-question
8. how the answers will be disseminated.

We use the schema as a tool by writing in a way that causes the reader to build and maintain an appropriate, stable, coherent schema of the proposal that matches our own. The schema that the reader builds will be their basis for understanding and remembering all aspects of the proposal. We write the case for support in such a way that the schema built by the reader is the same as ours. In order to do that we must present our schema consistently and coherently in every part of the case for support.

We keep the schema stable by always presenting the themes of the proposal in the same order. In this way, even if the reader reads hastily and in snatches, they will gradually build up an increasingly coherent schema of the proposal.

We can think of the case for support as being like a stick of Blackpool rock with the word "Blackpool" running through it. Wherever you break the stick of rock you still see the same word - "Blackpool". Whichever part of the case for support you read you must always see the same schema.

2.4 Labeling and Tag Phrases

Tags are key phrases that identify the different themes of the proposal structure. They have two functions.

- First, tag phrases act as labels for the different themes of the proposal structure. This helps to maintain the coherence of the proposal structure when the different themes are being treated in different ways - for example the introduction to the proposal must introduce and explain the different research sub-questions and show that they are important, whereas the plan of investigation must show how the proposed research will answer the specific sub-questions.
- Second, tag phrases are a way of introducing technical terms to the case for support. By using technical terms as tag phrases we make the reader become familiar with them and have the sense that they understand them. Even if they don't.

2.5 Repetition

A good case for support uses repetition systematically.

It is helpful to repeat the tag phrases that identify each theme. There are two reasons for this.

- Repetition helps the reader to grasp the relationship between the themes of the case for support, because the tag phrases always occur in the same order.
- Because the reader recognises and remembers the tag phrases, they begin to think that they understand them, even if they don't.

2.6 Signposting and Linking

Difficult information will not be assimilated by your reader if you have not prepared them to receive it. We prepare the reader by using signposts and links. A signpost is a written warning of what is coming up some distance ahead, whereas a link is a warning about what is coming next. Signposting and linking prepare the reader to receive given pieces of information, whereas priming², which we deal with below prepares the reader to interpret information in a particular way.

Many grant-writers feel that they can get more information into the case for support if they omit niceties like signposting. That may be true, but remember that you are writing the case for support in order to get a modest amount of information into the heads of the committee members and to make them interpret it in a particular way. Any piece of information in the case for support that is important should be signposted.

Careful signposting is crucial to ensuring that the information in the case for support gets into the reader's head. What happens to the information once it is there can be influenced by priming³, which we shall deal with now.

2.7 Priming

Priming is the process by which we influence the way a person will interpret or feel about one piece of information by feeding them contextual information beforehand. It is widely studied by cognitive psychologists, and widely used by salesmen. For example, an insurance salesman will feed a potential client worrying information about likely disasters before offering to sell them an insurance policy to protect them from the consequences of disaster.

²this is a signpost

³This is a link.

It is absolutely essential to use priming in a number of different ways in the case for support. I will give two examples here, but there are many more.

First, the whole case for support is an exercise in priming. Your aim in explaining why the research question is important is to feed the reader with information that will make them worried that we do not know the answer, or excited at the prospect that we could know the answer, to your research question. Then, when they read about how your proposed research project will answer the research question, they will want to fund it.

Second, more subtle but just as important, there is a separate section of the proposal called the justification of resources. This is where you try to persuade the reader that you need the resources you are requesting. It is crucial to get this right because this is the part of the proposal that makes them decide how much of the money you have requested they will give you. The justification of resources is infinitely more persuasive if, in the description of the research project, you have carefully primed the reader to believe that each of the resources you are requesting is important to the success of the project by explaining how it will be used in the research.

2.8 This will tell us (TWTU)

The 'this will tell us' is a device to show that a part of the research project will answer a specific, defined question, which we refer to as a research sub-question. It comes at the end of one of the subsections of the plan of investigation part of the research proposal and consists of a sentence that begins with the phrase 'This will tell us', or a suitable paraphrase, and ends with a tag phrase that identifies one of the key subcomponents of the research question.

The this will tell us has five functions.

1. It gets down to the nitty gritty of what your research will find out. Remember that the grant application is really a document that is trying to persuade the funder that what you will find out is worth the money. This is where you tell them what you are actually selling.
2. It helps to break down the research into manageable components.
3. It helps the reader to understand the tag phrase, which they will already have encountered at least twice.
4. It helps to convince the reader that a section of the investigation needs to be done because they will have been primed to believe that with a matching 'we need to know'.

5. Paired with a matching 'we need to know', it helps the reader to appreciate the structure of the proposal.

The effectiveness of the 'this will tell us' is completely dependent on its matching 'we need to know'.

2.9 We need to know (WNTK)

The 'we need to know' is a prime for the 'This Will Tell Us'. It comes at the end of one of the subsections of the background part of the research proposal and consists of a sentence that begins with the phrase 'We need to know', or a suitable paraphrase, and ends with a tag phrase that identifies one of the key subcomponents of the research question.

The we need to know has four functions.

1. It helps to break down the research question into manageable components.
2. It helps the reader to understand the tag phrase, which they will already have encountered in the summary and which they will encounter again.
3. It primes the reader to believe that a section of the investigation needs to be done. This is probably its most important function and dictates that there should be exactly one 'We Need To Know' for each 'This Will Tell Us'. There is no point in telling the reader about things we need to know that you are not offering to find out, and there is no point in offering to find things out if we don't need to know them.
4. When it is paired with a matching 'this will tell us', it helps the reader to appreciate the structure of the proposal.

2.10 Writing style and language

Written text is the tool that inserts your schema into the head of the reader. It is also the raw material from which the other tools are forged. If the toolkit is to do its job, the tools must be made from the right stuff. It is important to make the language as simple and direct as possible.

Simplicity and directness are essential because the designated committee members will be reading it with the aim of trying to prepare a presentation for their colleagues on the committee. Remember the limitations of designated committee members.

- They are unlikely to be experts in the precise area of the proposal;

- it is likely that they will be trying to read it very quickly;
- it is likely that they will have several others to read;
- and, finally, they will be trying to prepare a brief presentation describing your proposal.

These limitations mean that they will not have the time to decode long and complex sentences that convey precise shades of meaning. Using long sentences to build your case for support would be like trying to make a hammer out of rubber. It might look OK but it wouldn't do the job. Your case for support will be much more likely to do its job if you observe the following rules of thumb.

- Use short sentences. Short sentences are easier to read. An inexperienced reader may need to re-read a long sentence like this one several times, particularly if it has a complex structure, before they can understand precisely what it means; this is more likely to be the case if the subject area is unfamiliar to them, whereas a short sentence can be read and understood in a single glance. Re-read what you have written. Split long sentences.
- Avoid colons and semicolons. Look at every punctuation mark as an opportunity to split a long sentence into two short ones.
- Avoid adverbs, especially multiple adverbs. It is better to use the right verb.
- Avoid multiple adjectives. One is enough. None is better.
- Avoid synonyms. If you need to refer to the same thing twice use exactly the same word or phrase. Some people think repetition is bad, but if you have to say the same thing more than once you shouldn't hide the fact. If you use a different word or phrase to refer to a thing the second time you say it you will confuse the reader. Using a different word sends a signal that you mean something different. Using the same word helps the reader to recognise that you are saying the same thing.
- Repetition is good. That is why it is a tool in its own right.
- Avoid acronyms unless they are so well known that your mother knows them. Even then, if you think you need acronyms because you don't have enough space you have written far too much.

Some research communities, particularly in the EPSRC, like to use slightly jokey acronyms as project titles. There is no real harm in this.

- Use names rather than numbers to refer to the components of your project. For example, give the different phases of your project names that refer to the content rather than numbers. This includes the use of tag phrases but can go well beyond that. A set of names like
 1. Detection of static broad-band textures
 2. Detection of moving narrow-band textures
 3. Comparison of detection and discrimination of direction of motion.
 4. Model simulation of detection and discrimination results.

may be unintelligible but is much easier to remember than a series of numbered experiments like

- Experiment 1
 - Experiment 2
 - Experiment 3
 - Experiment 4
- Do not coin abbreviations to save space. You should not need to save space and if you do then you have lost the plot. Unintelligible phrases are easier to remember and discriminate than the letter-strings that replace them and repeating an unintelligible phrase helps the reader feel familiar with the technical terms.
 - Do everything you can to make your text easy to understand and to remember. It is perfectly acceptable and very very easy for the designated member to say of a grant application “This one was so badly written that I couldn’t really work out what they want to do.” Do not tempt them to do it with yours!

3 The ultimate tool:- the case for support

Here we shall explain how getting the right structure for the case for support is the key to achieving its two objectives. The objectives are,

- first, to ensure that the committee build a *schema* of the proposal that includes
 - What is the big question?
 - Why is it important?
 - How will it be answered?
 - how will the answer be disseminated?
- second, to ensure that the committee *believes*:-
 - that the applicant is capable of carrying out the project,
 - that the applicant's environment is suitable for the research,
 - that the resources requested by the applicant are necessary to allow the project to be completed successfully,
 - that the resources requested by the applicant are sufficient to allow the project to be completed successfully and
 - that the proposal represents good value for money.

We build the schema by presenting it coherently and repeatedly. We use the schema as a framework around which we build the different sections of the case for support. We use tag phrases to ensure that the reader links the different presentations of the schema to each other.

We make the committee believe in the proposal by using the other tools in the toolbox.

3.1 Structure of the case for support

The structure of the case for support is determined by the funding agency. It is important (and the application notes may instruct you) to divide the case for support into a number of sections. I recommend that it should contain two main sections, preceded by an **Introduction**. The first main section is the **Background**, which has the principal function of priming the reader so that, when they read about it, they will be utterly convinced that the research you propose to do needs to be done. The second main section is the **Plan of Investigation** that sets out how you propose to do the research and what resources you will use. In addition to describing your research the plan of investigation primes the reader to accept the justification of resources.

3.1.1 Introduction

It is difficult to be prescriptive about the content of the Introduction. However, it is an opportunity to signpost the main arguments in the Background and the highlights of the proposed research. It is also an opportunity to outline the schema again.

3.1.2 Background

The background covers all eight themes of the proposal. It has two aims

- to convince the reader that the research question at the heart of the proposal urgently needs to be answered
- and
- to prepare the reader to understand how the research question will be answered by the proposed project.

In order to achieve these aims the background section of the case for support for our hypothetical proposal would have eight subsections, dealing with the themes in turn. These subsections should be natural developments of the corresponding subsections in the summary and in each of them you should exploit the fact that the reader will have read the summary by re-using the relevant tag phrase from the corresponding subsection of the summary at least once. This will help the non-expert reader to develop a clear schema of the proposal.

The first subsection explains the main question. Depending on the complexity of the issue it may be very short. If the issue is complex it may be necessary to state the question, then explain why it is a question and then restate it.

The second subsection explains why the research question is important. It has to make the case that there is a need for the proposed research. The way to justify the research depends on whether the application is being submitted in **directed mode**, following a call by the funding body for proposals in a particular topic area, or in **responsive mode**.

- If the application is submitted in **directed mode**, the funding body is likely to have defined which are the important questions. In this case the task is to convince the reader that your research question is a significant part of what has been defined as important.
- If the application is submitted in **responsive mode**, your task is to convince the reader that the your question is important in its own right.

It is important to cite literature appropriately in these first two subsections. Remember that the most important aim of this part of the case for support is to lead the reader to the conclusion that the research question urgently needs to be answered. Typically there are two kinds of urgent research question:-

- research breakthroughs that will lead to a dramatic advance in understanding, and
- advances that will put us in a position to solve a pressing practical, industrial, social or medical problem.

You must decide why your research question is important and use the literature to support your case. Do not make the mistake of thinking that you are writing a literature review. You are not. You are trying to make the case to a funding committee that they should give you some of their money for your research. Irrelevant literature must be avoided. However published work that might appear to cast doubt on the importance of your research question or the validity of your research approach must be dealt with comprehensively and refuted convincingly.

Citations to your own work can help to establish your credentials, particularly if the project uses methods that you have developed or in which you have a special expertise, or if you have contributed to the development of the subject. Citing your own work in this way is an example of *priming*. It prepares the reader to believe that you are capable of carrying out the research in the proposal. However it is also very important that you should avoid appearing to overstate your contribution because that will make you look boastful and ignorant.

The third subsection introduces the general research approach. In the first two subsections you will have defined your research question and primed the reader to believe that it needs to be answered. Now you have to prime the reader to believe that your proposed research will answer it. A useful way to do this is to explain your general research approach and gradually home in on your research sub-questions. It will be important to signpost them carefully and to deal with them in the same order as you deal with the elements of the research project that will answer them.

The sole purpose of the sub-questions is to prime the reader so that they will be enthusiastic when they read the “This will tell us” of the corresponding part of the plan of investigation because they will already believe that “We need to know” what the project will tell us.

The next four subsections of the background deal, in turn, with the four sub-questions that will be answered by your programme of research. It is important that you signpost them well and link them together effectively so that the project is introduced in a coherent way. This is doubly important because each of these subsections functions to prime the reader to believe that a particular

subsection of your proposed research project is important. Consequently, while writing the proposal it is important to develop these subsections in conjunction with the corresponding subsections of the plan of investigation (see below).

Naturally, each of the descriptions of the research sub-questions will contain the relevant tag phrase. A particularly effective way to incorporate the tag phrase is to end each subsection with a *we need to know*. This is a sentence that begins with the words "We need to know" and ends with the tag phrase. A 'speed reader', who has read the summary and is skimming through the proposal is likely to pick these out and to believe them because they will remember the tag phrase.

It is extremely important in writing these subsections, and indeed in designing the research project, to make it clear that each of the sub-questions stands independent of the others. Many grant applications are rejected because the grants committee believe that the the answer to one of the research sub-questions could make the remaining sub-questions irrelevant. Sometimes this was because the project was badly designed. More often it was because the proposal was badly written.

The final subsection of the background will briefly introduce the problem of dissemination. It too will use its associated tag phrase.

3.1.3 Plan of Investigation

The plan of investigation has three aims:-

- to show how the proposed research project will answer the research question,
- to prime the reader so that they believe that the resources to be paid for by the grant will be used in the project, and
- to prime the reader so that they believe that any resources needed for the project that are NOT being requested are available for the project.

The plan of investigation for our hypothetical project will contain six subsections giving a complete description of the research to be carried out and the approach to its dissemination.

The first subsection describes the general research approach. It should also describe, in general terms, the resources and facilities that are available in order to reinforce the impression in the reader's mind that the proposed project can be achieved with a combination of the resources already available and those that will be provided by the grant. If local expertise has been developed or if specialist methods have been developed it may be important to point that out in this subsection.

The next four subsections will describe the themes of the research project that answer the research sub-questions. These correspond exactly with the themes of the background that break the main question down into sub-questions. The difference is that, in the background, the introduction to each subquestion culminates in a 'we need to know', whereas, in the plan of investigation, each subsection describes the part of the research project that will answer the relevant subquestion and culminates in a 'this will tell us' or TWTU. A TWTU is a sentence that begins with the words 'this will tell us' and ends in the relevant tag phrase.

The TWTUs map exactly onto the WNTKs. Consequently, each time the reader encounters a TWTU they will see the tag phrase that they have already seen two or three times before and they will feel that they know what it is about. They will also remember that the last time they encountered the tag phrase it was as something that, worryingly, we need to know. So they will have been primed: it will be reassuring to them to discover that the part of the research project being described will tell us the answer.

As well as giving the reader the feeling that the relevant part of the research project needs to be done, the plan must make them want to provide the resources being requested in the grant application. So it is important in the description of each part of the investigation to mention the resources, be they staff, equipment, techniques, environment, colleagues, or collaborators, that will be used in the investigation.

Mentioning the resources that will be used in the investigation is important for two reasons.

- It gives a sense that you know what you are doing and that it is feasible with the resources available to you.
- It primes the reader to believe that the resources you are requesting are both necessary and sufficient. Mentioning resources that are being requested in the grant, makes the case that those resources are necessary. Mentioning resources that are already available, helps make the case that the resources being requested are sufficient.

The final subsection of the plan of investigation deals with dissemination. In other respects it resembles the subsections describing the investigation itself. If specific resources are needed for dissemination they will be mentioned, both those that are available and those that are being requested. The tag phrase will be mentioned as part of a statement of what needs to be done.

4 Supporting Documents

There are usually several other documents that reiterate some or all of the sections of the case for support. These may include:-

- The Summary.
- A summary for non-technical readers.
- The objectives.
- The justification of resources
- The impact statement
- The impact plan

Do not be disturbed by the large number of supporting documents that may be required and by the apparent overlap between them. Mostly they are different ways of setting out the same information. The summary is a distillation of the case for support and most of the other documents are repetitions or minor reformulations of information that should appear elsewhere in the summary or the case for support.

It is important to remember that, with the exception of the summary, supporting documents may well not be read in detail by the committee. Almost everything in them is also said, in some form, in the case for support itself. This means that we should think of them as consisting largely of signposts and primes that will help the committee members to assimilate and to accept the information in the case for support.

It is most important that the supporting documents must reinforce the schema that is presented in the case for support. Coordination is key here. Remember that the most important readers will probably skim the case for support hastily many times rather than reading it thoroughly once. The structure of the schema that the reader forms from each section of the case for support and from each supporting document must be the same otherwise the different structures will conflict and weaken the schema.

Remember the Blackpool rock analogy - wherever you break the stick of rock, it says the same word, 'Blackpool', in the middle. Whichever section of your proposal the reader skims, you want them to come away with the same schema.

We shall now consider how this may be done by working through the most common documents.

4.1 Summary

The summary presents a complete account of the whole proposal in very few words. Most writers pay it little attention, and assume that it is unimportant. **In fact, the summary is probably the most important section of the application form.** There are two reasons for this.

- All readers read the summary first.
- Most readers only read the summary, although they may skim the case for support. A well-written summary will make them believe that they have read and understood the case for support.

Because of its prime position, the summary lays the foundation of the reader's mental representation of the proposal's logical structure. It starts the process that enables the reader to understand the research problem, to believe that they understand it, to appreciate its importance and to understand how it can be broken down into components that will be solved by the different parts of the proposed project.

The summary does this by presenting the schema. This includes all eight themes of the proposal, each of which has its own sub-section.

1. the general research question;
2. why the question is important;
3. the general approach to answering the question;
4. First sub-question
5. Second sub-question
6. Third sub-question
7. Fourth sub-question
8. how the answers will be disseminated.

The language in which the summary is written must be simple and clear. Much of it will be generated by cutting and pasting from the case for support itself. Each subsection should contain a tag phrase that expresses its essence and that will also have been used in the corresponding sections of the case for support.

The tag phrase acts like a mental label for the corresponding theme of the proposal. Tag phrases are very very important. It is worth taking a bit of effort to refine the tag phrases because you will use each of them several times.

It is the orderly, consistent and systematic use and reuse of the tag phrases in the other supporting documents and in the case for support that make the proposal understandable and memorable. Every section of the case for support and most of the supporting documents will deal with the themes of the proposal, always in the same order. Every time a theme is discussed it is clearly labelled with the tag phrase.

By reusing the tag phrases systematically, we allow the non-expert reader to build and to retain a durable picture of each theme and thereby convince them that they understand it.

By always discussing the themes in the same order, we make it easy for the reader to remember the relationship between the themes and so to have a coherent schema of the proposal.

4.2 Aims, Objectives.

Some, but not all, application forms have a separate section in which the objectives of the research must be stated. Others ask for a statement of the Aims and Objectives in the case for support.

A convenient distinction between aims and objectives is that aims tend to be rather general, whereas objectives are specific and measurable. The aim is prosecuted by achieving objectives.

In this sense the main aim of a research project corresponds to the first theme, whereas the objectives correspond to the last five themes. Specifically, the aim is to answer the main question and the objectives are to answer the subquestions and disseminate the results.

In our hypothetical eight-theme proposal a separate objectives section would contain five objectives in two groups.

- The first four objectives would correspond with the the 'sub-questions' that have already been set out in the summary.
- The last objective should correspond with the dissemination theme set out in the summary.

The language used for the objectives should also be very simple and clear. The presentation of the objectives should obey two simple rules.

1. The order in which the objectives appear should be exactly the same as the order in which the themes to which they correspond appear in the summary.

2. Each objective should use exactly the same tag phrase as was used to describe its corresponding theme in the summary.

If these rules are followed, the Objectives will reinforce the relevant parts of the schema laid down by the summary. If either of them is broken, the objectives section will weaken the schema laid down by the 'Summary'. In practice, the first draft of an objectives section could be written by cutting and pasting from the summary.

4.3 Impact Summary

Most of the research councils now require a separate impact summary. Like the statement of objectives, the Impact summary is not strictly part of the Case for Support. Nevertheless, its style and content should be consistent with the case for support. It should state who or what will be affected by the results of the proposed research project and how they will be affected. It is difficult to be prescriptive about the structure or content of the impact summary except to say that it should be consistent with whatever is said in the second theme about why it is important to answer the main research question and in the last theme about how the results of the research will be disseminated. If it is appropriate to discuss other themes, such as the individual sub-questions, the opportunity to use the associated tag phrases should be taken.

4.4 Justification of Resources

The justification of resources is the culmination of the case for support. It is where the resources that would be paid for by the grant are listed and justified. It states why each resource being requested is necessary. Because it is based on a list of the resources being requested it is the only document that does not deal with the themes in order.

The justification of resources should contain no surprises. All the resources being requested should already have been mentioned in the plan of investigation as part of what will make it possible to discover what we need to know or to do what needs to be done. This means that the reader will be primed to believe that the resources are necessary.

Where some of the resources required for the project are already available, this should be mentioned if space permits. Even if they were bought on previous grants these resources still belong to the institution and mentioning them in the proposal makes it clear that the Institution is supporting the project too.

Finally, it is also necessary to make the case that cheaper variants of the resources being requested will not suffice.

4.5 Conclusion: Consistent sequencing and consistent labeling are key

Each section of the case for support and each of the supporting documents has a clear function and so should present particular aspects of the proposal in a particular way. It is important to seek to ensure that all these presentations contribute to building and reinforcing a single coherent schema of the proposal, rather than multiple conflicting schemas.

Two aspects of the writing that are key to this are

- the orderly sequencing of the themes: they always occur in the same order,
- the consistent use of tag phrases to label the themes.

Not every theme occurs in every section, but when they do occur they occur in the same order and they are always labeled with the same tag phrases.