

Chapter 7

Technical Proposals

In an informal proposal, you can comfortably use the first person: “I”



Proposals

www.io.com/~hcexres/tcm1603/achtml/props.html

This document is one chapter from the online textbook used in Austin Community College’s online course, Online Technical Writing (www.io.com/~hcexres/tcm1603/achtml/acc-toc.html). It describes types of proposals, their organization and format, and the common sections in a proposal. Included are several sample proposals and a revision checklist.

Here, “We” is more prevalent

A technical proposal often seems like a technical report, but there is one major difference. A report usually identifies a situation that needs to be improved or a problem that needs to be resolved, describes ways of correcting the situation or problem, and recommends what action needs to be taken. As a result, it is primarily a “tell” document. A technical proposal might also describe a situation or problem and describe how it can be resolved, but its main purpose is to *convince* or *persuade* the reader to take a certain course of action. As a result, it is primarily a “sell” document.

At various times during their careers, scientists, engineers, technologists, technicians, and their managers and supervisors are called upon to write a proposal. The proposals they write fall into three categories:

An **Informal Proposal** offers an idea and discusses why it should be implemented. Most often it is circulated only within the company, and is usually written as an email or a memo. In each case the writer believes there is a better way to do something and proposes that this idea be implemented. Typical informal proposals might be

- a plan to introduce a new software-driven electronic calibration system throughout the company,
- a proposal to research local resources for replacement equipment components, rather than importing them, or
- a request to attend a conference (such a request is a proposal).

A **Semiformal Proposal** can range from one page to 30 pages or more and may be sent from one company to another, or to senior management within a large company. Short semiformal proposals are often written as letters. Longer semiformal proposals may stand as a separate document with a title page, and be preceded by a cover letter or executive summary. They may suggest ways to increase productivity, provide a service, conduct research, or resolve a problem. Typical examples might be

- a proposal to research new office space to alleviate crowded conditions,

- a proposal to provide specialist consulting services for a potential client,
- a proposal to amalgamate company departments, to provide a more efficient and cost-effective management structure, or
- a proposal to provide portable computers with built-in wireless transmission capabilities for field crews.

A **Formal Proposal** normally is a large, often multiple-volume document designed to impress the government or a major organization that the proposing company has the capability to carry out an important, usually multi-million-dollar task or project. Such proposals are substantial because they describe in detail what will be done, how it will be done, who will be responsible for specific aspects of the work, and why the proposing company has the potential to complete the project on time, within budget, and to the client's satisfaction.

Formal proposals are usually prepared in response to a Request for Proposal (RFP) that defines exactly how they are to be organized and what must be covered in the proposal. They are always accompanied by a cover letter or letter of transmittal, which often acts as an executive summary. Typical examples are

- a proposal to develop a deep-water holding pond for a city that regularly experiences an overloaded draining system and flooding during heavy rainfalls,
- a proposal to a bank to research ways to improve automatic teller services for customers, or
- a proposal to refurbish mobile communication systems for the Department of Highways.

In this chapter we will focus on writing informal and semiformal proposals, which are the types you are most likely to encounter in industry.

"We" is also common here, to maintain a confident active voice



Writing Research Proposals
www.cpsc.ucalgary.ca/Research/group/699/research_proposal.html
 This site shows scientists, engineers and technologists how to write research proposals.

Overall Writing Plan

All proposals, regardless of their length, contain the following parts:

- A **Summary** that describes briefly what is being proposed and identifies any significant factors (such as cost).
- **Background** information that outlines the circumstances that have caused the proposal to be prepared.
- **Definitive Details** that describe what needs to be done, how it will be done, what the results will be, and why the proposing company is capable of doing the job. This is the body of the proposal.
- An **Action Statement** that requests approval to go ahead (for an in-house proposal), or make a decision (for a client who will buy the services being offered).

The overall writing plan is similar to that for semiformal reports

- **Attachments** or **Appendixes** that contain detailed evidence to support statements made in the body of the proposal (appropriate for most semiformal proposals; not always present in informal proposals).

On the following pages we will demonstrate how to alter these five writing compartments to suit different proposal configurations.

Short Informal Proposal

Marina writes with confidence, and it shows

The plan in Figure 7-1 was used by Marina Albrecht to organize the proposal in Figure 7-2. It is an in-house proposal because Marina is writing only to her manager, Karen LePage. We have inserted the label for each writing compartment beside the proposal to demonstrate how it was constructed; the labels were not shown beside the original document. Sometimes a very short proposal like this does not need supporting evidence, which is why they were omitted from Marina's proposal.

Longer Informal or Short Semiformal Proposal

Marina has written what is known as a single-solution proposal, a proposal that offers only one way to do something. However, there are times when you may want to describe alternative solutions, to demonstrate to the reader that you have considered a number of options, only one of which you propose should be adopted.

Summary	A brief statement that describes what you want to do, or what you want done.
Introduction	The circumstances leading up to the situation that caused you to write the proposal (the Background and Reason).
Proposal Details	A carefully developed description, in two parts: <ul style="list-style-type: none"> • Suggestion: The proposed changes or improvements, why they are necessary, and what they will cost. • Evaluation: An assessment of the viability of the proposed changes and the effect they will have, including any problems that will evolve and how they will be overcome.
Action	A firm statement identifying what you want done, when, and by whom.
Attachments	Supporting data, such as drawings, plans, cost estimates, and spreadsheets. (<i>This compartment is optional.</i>)

Figure 7-1 Writing plan for a short informal proposal.

Rossmore Environmental Consultants

To: Karen LePage, Office Manager
 From: Marina Albrecht, Project Engineer
 Date: March 5, 2004
 Re: Proposal to Change to Recycled Copy Paper

Summary Statement When the current supply of regular office copier paper is exhausted, I propose that we change to recycled paper. The cost will be marginally higher, but our company will be seen to be following the advice we give our customers.

Reason/Background This is exactly the right moment to make the change. The American public has become increasingly sensitive to the damage being done to the environment by extensive use of paper manufactured from the country's timber resources. We will not only make a contribution by using recycled paper, but also can use that fact when proposing that other companies do the same. Coincidentally, we will be changing to a locally made product.

Details: Suggestion The paper we have used for the past four years is 20 lb Westburn stock, which is imported by Manor Industries Inc. of Dayton, Ohio. (Our two other offices have similar arrangements with local distributors of imported paper products.) The recycled paper I am proposing is 20 lb Environ stock manufactured by Schultz Industries Inc. in Rossmore, Connecticut.

Details: Evaluation I bought 1000 sheets of Environ stock and tested them on a trial basis. I found the following:

- The Environ paper fed as well as the Westburn paper and experienced no paper jams.
- The Environ paper appears very slightly coarser than the Westburn paper, and is slightly less white, but the print image is the same quality.
- 1000 sheets of Environ paper are 1.5 mm thicker than the same quantity of Westburn paper, but that does not affect printing or handling.
- The cost of the Environ paper is \$66.95 per 5000 sheets, compared with \$59.95 for the Westburn paper.

I have discussed the possibility of obtaining a discount from Schultz Industries, and they have agreed that, providing we contract to bulk-purchase all our copy paper from them for one year, for our offices in White Plains and Charlotte as well as Rossmore, they will give us a 10% discount. This will result in a purchase price of \$60.26 per 5000 sheets, which is only \$0.31 more per 5000 than we are currently paying.

Action Statement I propose that we use Environ recycled copy paper on a 12-month trial basis. May I have your approval by March 25 to place an order with Schultz Industries Inc. of Rossmore, for deliveries to start May 1, 2004.

Strong, definite statements...

...and the first-person active voice...

...help convince the reader the idea is valid

Figure 7-2 A short informal proposal prepared for an in-house audience.

Satisfy your readers' curiosity

For example, Terence Watkinson is the Chief Executive Officer (CEO) of a successful and rapidly growing business that develops innovative computer software for controlling and routing shipments for the trucking industry. At a recent manager's meeting, it was decided that the company would have to find larger space. Terence instructed Wally Meyers, the company's office manager, to research a suitable building and prepare a proposal to present to the next management meeting.

Wally found three suitable locations in different parts of the city, each with different advantages. Although he could have selected what he considered the best site, and proposed just that one, he chose to present alternatives. This achieved two objectives: it demonstrated that he had done a thorough research job, and it satisfied some of the managers who, he knew, had fixed opinions on where the building should be. The writing plan Wally used to organize his proposal is shown in Figure 7-3.

Several factors affect how you write a proposal that offers alternative solutions:

Show you have anticipated your readers' questions

1. When you establish the criteria you will use to evaluate the different alternatives, you must "prove" any criterion the reader might question. If Wally writes, "We will need a minimum of "X" square feet of office space immediately, and another "Y" square feet within two years," he needs to recognize that not every member of the management committee may be aware of the space requirements. He must explain ("prove") why the figures are valid.
2. When you present your Proposed and Alternative Solutions, you must prevent your opinions from intruding. For example, Wally must present only *facts* about each property, and neither comment on its advantages or disadvantages (that will be done in the Evaluation section), nor compare it with other properties. His readers must feel he is completely objective.
3. When presenting Alternative Solutions, to avoid confusing your readers you need to present the facts about each alternative *in the same sequence* that you presented that information for the Proposed Solution. This means Wally must describe the availability, age, condition, accessibility, and cost of each property in exactly the same order.
4. When writing the Evaluation, take great care not to compare one solution with another. Compare the solutions *only* against the criteria.
5. Be positive when writing the Action Statement: use the active-voice expression, "I recommend..." or "We recommend..." rather than the passive-voice expression, "It is considered that..." or "It is recommended that..."

Maintain your objectivity until you make your recommendation

When Meridian Engineering Consultants of Minneapolis, Minnesota, decided to provide courses in technical writing for their staff, they inserted a Request for Proposal (RFP) as a display advertisement in *Midwest*

Summary	A synopsis of the proposal's key points, which identifies the proposal's purpose, main advantages, result, and cost.
Introduction	A description of the situation, condition, or problem that demands attention, and the circumstances leading up to it. This part represents the Background and Reason .
Proposal Details	The Details section is the body of the proposal. It should open with a brief statement that identifies the overall approach. It is then divided into four subcompartments:
Objective	<ul style="list-style-type: none"> The Objective defines what needs to be achieved to improve the situation or condition, or resolve the problem, and establishes the Criteria that must be met.
Proposed Solution	<ul style="list-style-type: none"> The Proposed Solution offers what the writer considers to be the best way to achieve the objective. It includes a full description of the solution, the expected result or improvement, its advantages, and its cost.
Alternative Solutions	<ul style="list-style-type: none"> The Alternative Solutions section describes other ways that the objective can be met. Each alternative addresses the same topics as those covered for the proposed solution.
Evaluation	<ul style="list-style-type: none"> The Evaluation analyzes each solution and compares it against the criteria for an optimum solution established in the Objective. The solutions should be compared only against the criteria, never against each other.
Action	The Action Statement recommends what action needs to be taken. It is often titled Recommendation and must be written in strong, confident terms.
Attachments	The Evidence or Supporting Data contains drawings, cost analyses, spreadsheets, etc., that establish the validity of statements made in the body of the proposal.

Avoid saying or implying that this is the best solution...

...let the facts speak for themselves

Figure 7-3 Writing plan for a longer informal proposal or short semiformal proposal.

Business News (see Figure 7-4). One of the companies submitting a proposal was Online Writing Trainers Inc. (OWTI) of Rochester, Minnesota. The proposal was written by Arlene Tetrault, OWTI's projects manager, and is shown in Figure 7-5.

Arlene started by listing the advantages of each of the three training methods she would present, and then made in-depth calculations of the cost for each. This showed her that, because the costs were so close, they would not be a governing factor in MEC's choice. She was then able to concentrate on the advantages that each method offered from the MEC learners' point of view.

MEC Call for Proposals

Provision of Training Services: Writing Technical Letters, Email, Reports, and Proposals

MEC is soliciting proposals from innovative training consultants to provide courses in technical writing for our 120-person staff, 80% of whom are engineers and engineering technicians working primarily in Civil and Structural Engineering, Information Technology, and the Environmental Sciences. The training is to cover letter, email, report, and proposal writing, and include methods for sharpening individual writing style.

The training is to start January 15, 2004 and be completed by March 31, 2004. Vendors are to provide three copies of their technical and cost proposal by noon on Thursday, October 31, 2003, marked RFP 3/014. Late proposals will not be accepted.

Meridian Engineering Consultants Inc.

334 Willows Avenue, Minneapolis, MN 55261

Figure 7-4 The Request for Proposal (RFP) used by Online Writing Trainers Inc. to prepare the proposal in Figure 7-5.

Encourage readers so
they want to read your
words

The design of the proposal, with headings in a narrow column on the left and the text in a wider column on the right, is an effective application of information design principles. Readers can readily see how Arlene has structured her ideas, and can find information easily. The headings also parallel the labels in the writing compartments shown in Figure 7-3. Here are some additional comments on the proposal:

- The paragraph in the center of page 1 is Arlene's **Summary**, in which she identifies the preferred training method she recommends and lists its cost. Many people hesitate to state the cost in the Summary, fearing that readers may not continue reading if they feel the cost is too high. We believe it should be there, because it is the first question readers are likely to ask, so they will search for it and be irritated if they find it has been buried far down in the proposal.
- The first paragraph of the Introduction provides the **Background**, which sets the scene for the information to follow. Arlene draws much of this information from the RFP in Figure 7-4.
- The paragraph at the foot of page 1 provides a quick statement that identifies OWTI's capacity to handle the project. Arlene keeps it short, placing the detailed information in an attachment.
- By listing the **Objectives** (on page 2), Arlene identifies the factors she will use to evaluate the three methods. In Objective 1, she lists the

Online Writing Trainers Inc.

Suite 200 – 450 Bridgeview Road
Rochester MN 55952

Proposal to Provide Training Services: Writing Technical Letters, Email, Reports, and Proposals

Prepared for
Meridian Engineering Consultants Inc.
Minneapolis, Minnesota

In response to
MEC RFP 3/014
Proposal prepared October 27, 2003

We have investigated three methods for providing training in letter, email, report, and proposal writing for Meridian Engineering Consultants Inc. The method we propose is a mix of web-based and traditional classroom-style learning. It will meet the needs of MEC staff who prefer electronic delivery and those who prefer more traditional instruction. The total cost at \$51,400 is comparable to solely online or solely classroom instruction.

Indent the summary on both sides to catch readers' attention

Introduction

Meridian Engineering Consultants Inc. (MEC) plans to upgrade its technical staff's ability to write effective letters, email, reports, and proposals. Training is to be conducted between January 15 and March 31, 2004, and is to include approximately 96 technical professionals and 24 support staff. MEC published a Request for Proposals (MEC RFP 3/014) in the *Midwest Business News* on October 10, 2003, calling for interested training consultants to submit training and cost proposals for providing the appropriate services.

Online Writing Trainers Inc. (OWTI), of Rochester, Minnesota, has been providing onsite courses for engineering and other business organizations in the US and Canada since 1972, and in the UK since 1994 (see Attachment 1 for a detailed company description). To meet the growing demand by both North American and European businesses to access training over the Internet, in 2001 we converted our onsite courses for electronic delivery. They are now available online from our corporate website.

Highlight company experience only very briefly; focus on what your company can do for the reader

Figure 7-5 A short semiformal proposal offering alternative solutions.

Draw on the client's requirements to write the Objectives

Cover new technology or methods in detail

Objectives

We established the following requirements that must be met:

1. The training is to cover eight main subjects:

Foundation Topics

- Getting to the point (identifying and placing key information for immediate access)
- Organizing the details (developing the remainder of the document)
- Writing effective email
- Sharpening language skills

Advanced Topics

- Writing business letters and memos
- Writing short reports
- Planning and writing formal reports
- Planning and writing business and technical proposals

2. Technical staff are to receive training on both foundation and advanced topics. Support staff are to receive training only on the foundation topics.
3. The cost for the training must be comparable, whether delivered onsite or online, or in a blended format.
4. The training must be completed within a 2.5 month period, between January 15 and March 31, 2004.
5. The training must accommodate the schedules of technical staff who travel frequently.

Proposed Delivery Method *Blended Training*

Our proposal offers a combination of onsite and online courses under a "blended" arrangement, with some portions of the training being taught online and other portions being taught onsite. The costs for implementing blended training will be slightly less than for traditional classroom training.

In the following discussion, we have relabeled the eight topics as four foundation courses and four advanced courses. See Attachment 2 for course descriptions.

The **online training** will be held first and will cover the four foundation courses, which will be taken by all staff. Because the program is maintained on OWTI's server, participants will not need to download the courses to their individual computers. They will also be able to access the courses from any computer at any location at any time. The system will record their progress and each time participants log on they will be taken immediately to the point where they stopped. There will be an examination at the end of each course, which will be evaluated electronically and the results reported to the participant.

The **onsite training** will cover the four advanced courses, which will be presented at spaced intervals, after each person has completed the foundation courses online. Support staff will not take the advanced courses, because they normally do not write technical correspondence, reports, and proposals.

**Blended
Training
(continued)**

Schedule

The **online segment**, comprising the four foundation courses, will be taken over a six-week period, between January 15 and February 24, 2004. The four courses require a total of 6 to 8 hours of study.

The **onsite segment**, comprising the four Advanced Courses, will be covered in a single 8-hour class, with a maximum of 12 participants in each class. To cover the 96 technical professionals, the classes will be held on eight separate days, four between March 1 and 4, and four between March 22 and 25. The spread of dates will allow for possible travel absences of engineering staff.

Jan	Feb	Mar
19 26 02 09 16 23	01 08 15 22 29	
120	4	4
Foundation courses (all online)	Advanced courses (8 onsite groups of 12)	

Cost

The cost for providing courses under the blended approach will be \$51,400. The cost covers provision of

- 120 passwords and individual IDs for participants to access the four foundation courses,
- 8 one-day onsite training sessions, to cover the four advanced courses, with 12 staff members attending each session,
- 2 instructors for each onsite course,
- evaluation of 2 assignments written by each onsite course participant, and
- instructors' travel and accommodation expenses.

**Alternative
Delivery Method
Online Training**

In the online training mode, all eight courses will be taken electronically. Participants will be able to access the courses from any computer at any location and at a time convenient to themselves. The system will record their progress and each time participants log on they will be taken immediately to the point where they stopped. There will be an examination at the end of each course.

The 96 technical professionals will register for all eight courses, which will require approximately 14-16 hours of study. They will also write four assignments and submit them electronically to an OWTI instructor, who will return them with feedback.

The 24 support staff will register for the four foundation courses, which will require approximately 8 hours of study.

All participants will receive a copy of the course textbook, which will become a permanent resource for future reference.

Explain how the system will work

Identify total cost and what it covers in the proposal; put detailed costs in an attachment

**Online Training
(continued)**

Schedule

The courses will be taken between January 15 and March 31, 2004. OWTI will monitor course progress and submit a report to MEC every two weeks. The reports will list those who have started, how far each person has progressed, and those who have completed their courses.

Cost

The cost for providing training online will be \$49,220, which will include

- 120 passwords and individual IDs for participants to access the four foundation courses,
- 120 course textbooks,
- evaluation of four assignments submitted by each person completing courses 5 to 8, and
- submission of progress reports at two-week intervals.

**Alternative
Delivery Method
Onsite Training**

Onsite training is traditional classroom training. We will present eight two-day workshops for the 96 technical professionals, and two one-day workshops for the 24 support staff, with 12 participants attending each workshop. Topics to be covered will include the following:

2-day workshop:	All 8 topics
1-day workshop:	4 foundation topics

All participants will receive a copy of the course textbook and approximately 30 pages of additional notes. The workshops will be held on MEC's premises.

Schedule

The workshops will be presented in four timeframes to accommodate staff absences while on field assignment:

Dates	2-day Workshops	1-day Workshops
January 19-23	2	1
February 2-5	2	-
March 1-5	2	1
March 15-18	2	-

Cost

The cost for providing the 10 workshops will be \$52,520, which will include

- 2 instructors for each workshop,
- evaluation of four assignments completed by participants attending the two-day workshops,
- 120 course textbooks and course notes,
- instructors' travel and accommodation expenses.

A table summarizes key points and draws readers' attention

**Evaluation of
Alternative
Methods**

All three of the proposed methods will provide the required depth of training established in the Objectives, can be completed within the required time frame, and will accommodate the schedules of technical staff who travel. The costs also are comparable:

Blended training (online and onsite)	\$51,400
Solely online training	\$49,220
Solely onsite training	\$52,520

The primary differences are in the delivery methods and individual participants' reaction to them. For a detailed cost analysis, see Attachment 3.

Blended Training will meet the needs of both types of course participant: those who prefer electronic instruction and those who prefer the interactive classroom environment. The more basic foundation topics will be taught online. The more intense advanced topics will be presented in person, which will provide participants with personal instruction and the opportunity to ask questions.

Solely Online Training will please participants who prefer the privacy and ability to study at their own time, pace, and location. It will not, however, provide personalized instruction or the interactive environment that some participants prefer.

Solely Onsite Training will please participants who prefer to work face-to-face with an instructor and like the interactive environment in which they may ask questions and hear the questions of others. It will not, however, offer much flexibility because participants must attend at a fixed time.

Conclusions

Although all three methods will meet MEC's requirements, we consider that the blended training option will provide the flexibility MEC needs to train both technical and support staff, and will suit employees who often have to travel and work offsite.

Online Writing Trainers Inc.
27 October 2003

Identify where cost
explanations can be
found

The Evaluation permits
the writer to air her
views

(Note: the three attachments are not printed here to conserve space in this edition of *Technically-Write!*)

Maintain your objectivity, almost to the end

topics that need to be taught. She divides them into two groups to suit the two different groups of employees, which she identifies in Objective 2. She drew Objectives 3, 4 and 5 from MEC's RFP.

- The **Proposed Solution** starts in the center of page 2 and continues to two-thirds of the way down page 3. Arlene presents only *facts*, without commenting on their value at this stage in the proposal.
- The two **Alternative Solutions** appear on pages 3 and 4. Each is shorter than the proposed solution, but the information is presented in the same sequence. Again, Arlene presents only facts.
- In the **Evaluation** of the three methods (page 5), Arlene compares each method against the Objectives she established on page 2. She starts by identifying the objectives met by all three methods, and then continues with comments on the advantages and disadvantages of each method. Here, she allows her (i.e. OWTL's) opinions to appear, for the first time in the whole proposal.
- The **Conclusions** present the outcome of the Evaluation, but Arlene only *suggests* which method MEC should select. Although Figure 7-3 labels this as an **Action Statement**, in which the writer normally makes a strong recommendation that the reader approve the proposal, Arlene chose to move her Action Statement into a cover letter to send with the proposal:

A cover letter is also known as a transmittal letter or an executive summary

Dear Contracts Manager:

I am enclosing Online Writing Trainers' proposal to present courses on writing technical letters, email, reports, and proposals to Meridian Engineering Consultants' staff, in response to MEC RFP 3/014. We recommend that Meridian Engineering Consultants adopt "Blended Instruction" as the preferred training method, which will be a combination of electronic and in-person delivery of the training. The cost will be \$51,400, which is slightly less than for regular classroom-style training. Blended Instruction will also meet the needs of staff who prefer electronic delivery and those who prefer personal instruction.

Our corporate web site at www.owti.com provides a detailed description of Blended Instruction. Please call me at 507.488.1827 if you have further questions.

Sincerely,

Arlene Tetrault

Contracts Manager

Online Writing Trainers Inc.

Student Project Proposal

Many technical students nearing the end of their education have to undertake a technical term project, sometimes working alone but more often working in teams. Although the instructor may assign a project to each

team, there are times when the instructor invites each team to identify a technical problem and then write a proposal identifying how the team will tackle it. You can use the writing plan in Figure 7-6 to help you.

The plan shows that you cannot simply decide, without considerable forethought, that “We’ll put two computers at different ends of the building and work out whether there is less information loss between them, using fiberoptic cable compared with RS-232 wire cable.” That would make a good project, but before writing it up as a proposal you need to work out the amount of cable you will need, how you will get the computers, what software you will be using, how you will measure information loss at different frequencies, how long all this will take you, and so on. Only when you have “done your homework” and have the facts at your fingertips, will you be ready to write the proposal.

This practical approach is particularly suited to college writing

Longer Semiformal Proposal: Single Solution

If a company is already working on a project with a client, and the client runs into a technical problem at a nearby location, the client is more

Summary	A brief outline of what you plan to do, and what doing it will achieve.
Background	Why the project needs to be tackled. Include historical information concerning the topic and identify the team members.
Proposal Plan	Describe how your project team will carry out the project. Provide the following information:
Details	<ul style="list-style-type: none"> • Your overall approach or plan. • Who (in your team) will be doing what. • Special equipment or parts you require (attach a list)
Project Schedule	<ul style="list-style-type: none"> • Identify the dates on which you plan to <ul style="list-style-type: none"> > complete your research, > finish the design, > complete product construction, and > complete testing and troubleshooting the product.
Reporting Schedule	<ul style="list-style-type: none"> • Identify the dates when you plan to <ul style="list-style-type: none"> > submit progress reports, > submit a topic outline for your project report, > submit first draft sections for evaluation, > complete the final project report, and > present your oral report.
Action	Request approval to go ahead with the project.
Evidence	Provide supporting information to validate your plan, plus a list of materials or parts you will need.

This writing plan parallels how project proposals are written in industry

Figure 7-6 Writing plan for a student project proposal.

Insert additional steps into the writing plan

likely to turn to the existing consultant and ask that they research the problem and propose a solution, rather than solicit bids from several consultants. This is known as a *solicited* proposal. (In an unsolicited proposal, the proposing company has not been asked to submit a proposal.)

The writing plan is similar to that for a short informal proposal, but is extended to include additional features. In the **Proposal Details** it will

- describe in-depth what can be done, and why,
- outline the gains that will be achieved,
- draw attention to any problems that may occur if the proposal is implemented, then explain what will be done to alleviate them, and
- calculate the cost.

There is also likely to be an additional section that describes the company's **Capability** to do the work if the proposal is approved.

These writing compartments are shown in Figure 7-7.

Longer Semiformal Proposal: Multiple Solutions

A longer semiformal proposal may also present and evaluate alternatives, just as the longer informal proposal does, but it will have much greater internal development and demand more attention to detail. A typical writing plan is shown in Figure 7-8.

A single-solution semiformal proposal can be quite straightforward

Summary	Very briefly describe what needs to be done, and why. Identify the overall advantage, what will be achieved, and the cost.
Introduction	Describe the situation, condition, or problem that demands attention, and the circumstances leading up to it. (The Background and Reason .)
Proposal Details	Open with an introductory statement that identifies the overall approach. Divide the information that follows into four subcompartments:
Description	<ul style="list-style-type: none">• Fully describe what will be done and how the work will be implemented.
Gains	<ul style="list-style-type: none">• Describe all the advantages and the effect each advantage will have.
Problems	<ul style="list-style-type: none">• Identify any problems that implementing the proposal will create, and describe how the problems will be resolved or at least lessened.
Cost	<ul style="list-style-type: none">• Provide definitive cost details to show how the overall cost mentioned in the Summary has been calculated.
Capability	Describe your company and the company's capability and experience in doing similar work.
Action	Recommend what action needs to be taken and ask for approval to implement the proposal. Use strong, positive terms.
Attachment	Attach drawings, sketches, cost analyses, spreadsheets, etc, to support the statements made in the Details section of the proposal.

Figure 7-7 Writing plan for a longer semiformal proposal offering a single solution.

A primary difference between this writing plan and that for a longer informal proposal (Figure 7-3) occurs during the evaluation of alternatives. The writing plan for an informal proposal suggests presenting all the alternatives before starting to evaluate them. The writing plan for the semiformal proposal suggests evaluating each alternative immediately after you have presented it. However, in both cases you evaluate the alternatives *only against the criteria*, never against each other. We are not suggesting that you can use each approach only for the writing plan you now

Still maintain your objectivity

Summary	Provide a synopsis of the proposal's main features and state the cost, possibly as a range, depending on which option is approved by the client.
Introduction	Describe the circumstances leading up to the problem or unsatisfactory condition to be corrected, and the proposal being written. (This is the Background and Reason .)
Proposal Details	As with the previous proposals, start the Proposal Details section with a short introduction to the six subsections that follow.
Approach	<ul style="list-style-type: none"> Describe your overall approach (how you will investigate the problem/situation and what you anticipate the proposal will achieve).
Parameters	<ul style="list-style-type: none"> Describe the factors that the client established for a satisfactory conclusion to the project, and include a budget and timeline. Also identify the criteria you will use to evaluate the effectiveness of the solution(s) being offered.
The Plan	<ul style="list-style-type: none"> This will become your most detailed subsection. Describe <ul style="list-style-type: none"> > exactly what will be done (as a general statement here, and step-by-step in an Attachment), > how it will be done, > the advantages that will accrue by doing the work in the way you suggest, > how well the plan meets the criteria established earlier, and > the cost, broken out for each significant factor you discuss.
The Alternatives	<ul style="list-style-type: none"> Describe what other options are available (anticipate that, on reading The Plan, your readers may say to themselves: "Yes, but didn't you also consider...?"). Evaluate each option separately against the criteria.
Cost	<ul style="list-style-type: none"> Provide a cost calculation for each of the different configurations or alternatives listed earlier.
Conditions	<ul style="list-style-type: none"> Establish contractual details, such as for how long the cost analysis is valid and who will be responsible for what activities if the proposal is approved.
Capability	Describe your company's capability to do the work and experience on similar projects.
Conclusions	Sum up the key features of the proposal, and restate the primary advantages it offers.
Attachments	Insert charts, drawings, sketches and spreadsheets to support earlier statements, and detailed steps and cost analyses.

A multiple-solution semiformal proposal can offer in-depth descriptions of alternatives

The recommendation can appear in an accompanying letter (like an executive summary: see page 147)

Figure 7-8 Writing plan for a longer semiformal proposal offering multiple solutions.

see. When you become an experienced proposal writer, it's acceptable to transfer each approach into either writing plan.

Here are further comments on the writing plan in Figure 7-8:

- When establishing the **Criteria** (in the **Parameters** section), ensure that you prove any criteria your readers might question. They must feel comfortable with the criteria before you start comparing your different plans against them.
- Know that there can be two types of **Alternatives**, and that normally you will present only one:
 1. You can offer different ways to correct a problem or improve a situation, only one of which will be selected. (When Wally Meyers presented alternative sites to the company management, he used this approach.)
 2. You can offer a basic plan as your **Proposed Solution**, and then present additional features as “add-ons” for the reader to consider (they supplement, rather than replace, the proposed solution).
- The **Conditions** are like insurance: they are there to protect you in case the reader assumes you will be performing certain tasks that you expect the client to perform. If you prepared your cost estimate on that assumption, you could be in for an expensive surprise. For example, Metronome Telecommunications proposed that H. L. Winman and Associates employ them to install Mercury 7.0 high-speed Internet connections in each of the company's engineering departments. Winman approved the proposal, but when Metronome started to install the equipment they discovered that Winman had assumed that Metronome would remove the existing system, whereas Metronome had assumed that Winman would do that before they started the installation work.
- The section where you describe your company's experience and capability is often mishandled. We have seen many proposals that start with from 10 to 40 pages describing how good the proposing company is, before their readers encounter any section that tells them *what they most want to hear*. A prominent manufacturer told us once: “I don't want to wade through pages of ‘Look at who we are and what we have done for others in the past!’”
- As a result, the **Capability** section in Figure 7-8 is positioned after the **Proposal Details**. We suggest, however, that it's acceptable to insert a paragraph or two in the Introduction, to summarize your company's strengths, as a way of explaining why you are submitting the proposal.
- Previous proposal writing plans in this chapter have concluded with an **Action** statement, in which you make a recommendation and ask

Anticipate and identify
“who does what”

for approval. In this longer, more complex proposal we suggest closing with a **Conclusion**, in which you sum up the key points (this is sometimes known as a Terminal Summary.) The proposal is then accompanied by an **Executive Summary**, which is a letter of transmittal that comments on any point of particular importance and ends with an Action Statement. For more information about Executive Summaries, see Chapter 6.

Writing Plan Flexibility

We have shown you five writing plans for informal and semiformal proposals, each of varying length and complexity. They are typical of the many designs you may encounter. It's important to remember that the designs are not "written in stone." As a writer of proposals, you should always be ready to augment or modify the designs shown here to fit the particular situation that affects you, the information you have to convey, and the reader(s) you have to address.

Design your proposal to suit the particular audience

The Language of Proposal Writing

There can be nothing wishy-washy about the language you use in a proposal. If you have organized your proposal using one of the writing plans shown in this chapter, you will provide a smooth flow of information. Now you must let your language convince your readers that you have a strong case to present. Here are four suggestions.



Types of Proposals
<http://writing.colostate.edu/references/documents/proposal/pop2b.cfm>
This site shows engineers how to write different types of proposals, from grants to bids.

1. Present Only Essential Information

Before writing, divide all your information into two parts: (1) information the reader *must have* to make a decision (we call this the "Need to Know" information); and (2) information that is of general interest but the reader *does not need* to make a decision (we call this the "Nice to Know" details). Often, because we know a project well, we tend to present everything we know because it interests us. Take a step back and look at your information from the potential readers' point of view.

2. Use the Active Voice

The active voice will make you sound firm and definite. Instead of writing:

The two computers would be connected by means of a metal wire and a fiber-optic cable, whereas alternating from one cable to the other would be accomplished by a Model 1880 switching unit. (*Passive voice: 33 words*)

Write strongly and positively

Write:

A wire and a fiberoptic cable will connect the two computers, while a Model 1880 switching unit will alternate between them. (Active voice: 22 words)

In addition to having 33% fewer words, the active voice makes the second writer sound much more confident and knowledgeable. (For more information on using the active voice, refer to Chapter 12.)

3. Avoid Wishy-washy Words

Replace weak words like *would*, *could*, and *should* with a strong word like *will*. In the first example about the two cables, the word *would* occurs twice and creates only a “soft” impression (the reader may comment: “Well, I guess that might be okay.”). In the second example, the word *would* has been replaced with *will*, creating a much more confident impression (the reader will feel like commenting: “Now that makes sense!”)

Use words that convey a strong image

You can make a similarly weak impression if you insert low-information-content expressions into your proposal. Examples are *bring to a conclusion* (use *concludes*), *in the direction of* (use *toward*), and *by means of* (use *by*, or change from passive voice to active voice, as in the two sample sentences, above). For an extensive list of such words, see the section on Low-Information-Content Expressions in Chapter 12.

A third damaging effect occurs if you write vague statements like *an adequate supply*, *got some help*, or *many tests will be attempted*. Whenever possible, use descriptive words that convey clear images, words such as *a three-week supply*, *two technicians helped us*, and *we will carry out 30 tests*.

4. Avoid Giving Opinions

Experienced proposal writers know just when to insert an opinion or a subjective statement. As a beginning proposal writer, you will be much safer if you withhold your opinions until the end of the proposal, when you make your recommendation.

ASSIGNMENTS

Project 7.1 Acquiring Handheld Computers

Assume that you are employed by the local branch of H. L. Winman and Associates (a nationwide consulting firm), in a department related to the discipline you are studying—e.g. civil engineering, mechanical engineering, biophysics, environmental science. The local branch has 130 employees, 27 of whom are in your department. In your work, you and your associates have to travel frequently. Most of you use laptops.

In the coming year's budget, the company has set \$30,000 aside to purchase replacement laptops. However, you feel that a handheld computer would be more useful and convenient. You discuss the idea with your associates and nearly all agree with you. You describe your idea to Wilson Harcourt, your department manager, who says "Your idea has merit." He asks you to prepare a proposal he can take to the next Capital Budget meeting, and suggests that you describe

- why handheld computers would be of value to departmental staff,
- what you can do with a handheld computer, compared to a laptop,
- the advantages of a handheld computer, and
- how many should be purchased.

He also suggests you identify several different types of handheld computers, evaluate them, and propose that the company buy a specific brand.

Overcome readers' resistance by anticipating their questions

Project 7.2 Installing an Alternative Power Supply

You are the technician who experienced a 5 hour and 24 minute overnight power outage that destroyed the tests on electronic and mechanical switches for Terrapin Control Systems, and delayed the project (see Project 4.4 on page 96).

Today your manager (John Grayson) tells you that the company has received a second, even larger contract to test switches for Terrapin Control Systems. The tests will start on the 20th of next month and the scheduling will be very tight. As a result, there must be no delays.

To prevent a future power outage affecting the new set of tests, you recognize you must have a backup power supply. Investigate what power supplies are available and make an informal proposal to John Grayson recommending either the purchase or lease of a suitable power supply that can handle the current required for heat and cold chambers. Ideally, present several alternative power supplies, with different capabilities and prices, and recommend one of them.

Answer even more questions than are listed here

Project 7.3 A Proposal to the Student Council

Write a proposal to the Student Council (or its equivalent) at your school or college, describing an innovative idea you have that you would like the council to implement. The idea may be one of the following:

1. A plan to set up a 2–4 day skiing trip to one of the ski resorts nearest to your college, to be held during a mid-term or between-term break. Work out the details and use them to answer questions the Student Council is likely to ask, such as these:
 - When will it happen?
 - How much will it cost?
 - Where is the resort?
 - What lodgings are available, and at what cost?
 - What arrangements will be made to rent a coach, and at what cost?
 - Who will make all the arrangements?
 - How will it be marketed?
2. A plan to set up a money-making event that will generate funds for a charity (you choose which one). Identify an event that will be particularly visible and so promote the charity's need for funds. Typically, students taking part in the event obtain sponsors who promise to donate a specified amount if the student they sponsor completes an activity such as a 50-mile bicycle ride, a 20-lap swim, a 10-mile hike, and so on. Describe why the charity is worth supporting, how the event will be organized, who will do the organizing, and how the event will be publicized, either through the school's internal media or to the general public.
3. A plan to clean up the neighborhood around the school or college. From time to time there have been complaints from residents on neighboring streets that the students drop gum and candy wrappers, looseleaf pages, cigarette packs and butts, and so on, as they walk to and from the local bus stop or their cars. The residents complain that the students' debris lowers the quality of the neighborhood and reduces house values. Suggest that the Student Council set up clean-up crews who will regularly (once a week?) search the neighboring streets for rubbish and collect it in large garbage bags. A key factor in your proposal is that the Student Council should send out a news release to the local media, to demonstrate that the College's/School's students are very conscious of the image they create and that they want to contribute actively to the neighborhood's environment. Be ready to counter remarks from the Student Council that the local residents contribute much of the garbage they are complaining about.

Alternatively, if you have a different idea you feel the Student Council should address, you may select it as your topic. Whatever topic you select, you must research it in sufficient depth so that you can write a confident proposal.

Develop your own idea
for a project!