CHAPTER EIGHT - S&T PROPOSALS

OCCASIONS

- ✓ Any professional scientist will encounter a time when he/she needs to write a proposal, because
  - the organization for which he/she works may want to apply to a governmental agency (i.e., TÜBİTAK) or to a foundation or organization (i.e., UN-DP) for funds to
    - perform a special project,
    - obtain equipment that could not otherwise be purchased,
    - sponsor research efforts in a specific area…
- ✓ Any professional working for an industrial organization might want to write a proposal
  - outlining a new method for performing an existing activity,
  - suggesting the best piece of equipment to be purchased to implement a new product line,
  - directed to changing company policy…
- ✓ As a private citizen you might submit a proposal to the local municipality (= belediye)
  - supporting changing the street on which you live into one-way traffic,
  - requesting installment of traffic lights on your street where crossing is very dangerous at any hour of the day due to heavy traffic …

WHAT IS A PROPOSAL THEN?

- ✓ A proposal is a written offer to solve a problem
  - ✦ in a particular way
  - ✦ under a specified plan of management
  - ✦ for a specified sum of money

- ✓ **In other words**,
  a proposal is a document
  designed to **convince** a "**customer**"
  that **the company or organization**
  presenting it is **better qualified**
  to supply a desired product or service
  than all the others submitting proposals.

- The written **offer to solve a problem** describes
  - the design or plan proposed
  - with some discussion of alternate plans and designs,

  ➡ "technical proposal"

- The **specified plan of management** explains to the prospective clients
  - how the entire project will be managed
  - who will manage it

  and suggests a time schedule for completion of all phases of the project.

  ➡ "management proposal"

- The **specified sum of money** is a detailed breakdown of all the costs in terms of labor and materials

  ➡ "cost proposal"

✓ All the three basic elements, namely

- the "technical proposal"
- the "management proposal"
- the "cost proposal"

are contained between one set of covers.

✓ Proposals are commonly referred to as

➡ **SOLICITED** - **submitted in response** to an **invitation bid**, also called a "request for bid", a "purchase request", or a "request for proposal".

- Bids are either **published** or **advertised** in newspapers, scientific or governmental publications, technical magazines, or directly **mailed** to selected companies.
- In the bids
  - **exact specifications** for the product or service desired may be given, or
  - **a problem** for which a possible solution or solutions are sought, may be stated, and bidders may be required to **propose solutions** and discuss exact specifications.

➡ **UNSOLICITED** - prepared in the hope that the excellence of the idea or plan proposed will **persuade the potential client** of the need for the product or service being proposed.

✓ Proposals are commonly categorized as

➡ **internal**
- used only within the author's organization or company
- need less background information

➡ **external** - need to provide details, such as history of organization or company and qualifications of the principal investigator (PI), main author of the proposal.

✓ Proposals can be grouped by their **purpose** or **intent**.

✦ **A research proposal** would seek approval of a prospective direction of experimentation,

i.e., internal project proposals suggesting an area of research designed to lead to a Master's or Ph.D. degree,

i.e., external project proposals suggesting an area of research and involve outside funding for equipment, supplies, and/or salaries for the participants.

✦ **A sales proposal** would be trying to convince clients to use a product or services to accomplish a stated goal or to improve the present situation.

Sales proposals are usually external and may be solicited or unsolicited.

✦ **A planning proposal** (internal or external and solicited or unsolicited)
- may be submitted preliminary to a sales or research proposal or
- it may lead to a combination of the two to accomplish a desired goal.

PREPARING A PROPOSAL

① **Making a preliminary study** involves

✶ direct contact with the customers or their representatives
- to obtain information as to what the customer's needs are
- to provide information what the capabilities of the company or organization are

✶ studying the request for proposal (RFP) or the request for bids (RFB)
- to study any specified specifications
- to study material that defines the problem

✶ determining a plan to "attack" on the RFP or RFB

The preliminary study can be broken down into several phases:

❶ **detailed study of the invitation to bid**, of the specifications, and of any related papers or information, such as corresponding with the procuring agency or company
❷ **study of background information**, such as the reports of field representatives who contacted the procuring agency or company
❸ **careful analysis** of probable competition
❹ **strategic evaluation** of the design or program to be presented
❺ preparation of a **tentative schedule** for completion of the various phases of proposal preparation.

② **Developing a plan** involves

✶ the writing of an **outline** - which will finally appear as the **table of contents**
- checking whether all necessary information is included
- giving a visual means of determining whether all parts of the proposal are in balance and in most effective sequence

③ **Writing a rough draft** involves

✶ writing the text of the proposal
- **very important**: definition, clarification, classification and interpretation
- **particularly important**: organization and coordination of different parts of the proposal written by different persons
  ❢ a coordinator is chosen!

✶ planning of illustrative material and visual aids

④ **Reviewing and revising** involves

✶ going over the composed proposal by either the PI or the PI and a technical editor
✶ making sure that revisions are actually carried out and well handled

⑤ **Proposal evaluation** involves studying

❶ adequacy of the technical content
❷ feasibility of management plan
❸ acceptability of the cost or price information

One of the commonly used evaluation point systems

PROBLEM UNDERSTANDING	25
SOUNDNESS OF SOLUTION	25
COMPLIANCE WITH REQUIREMENTS	15
DESIGN SIMPLICITY	10
EASE OF MAINTENANCE	10
CAPABILITIES AND QUALIFICATIONS OF THE COMPANY	15
TOTAL	**100**

Another evaluation system

Scientific/engineering approach

- Understanding the problem
- Soundness of technical approach
- Responsiveness to requirements
- Unique aspects

Bidder qualifications

- Pertinent experience
- Management organization for the project
- Adequacy and availability of facilities
- Special of unique qualifications

Customer experience with bidder

Parts of a Proposal

① Format
② Title Page/Cover Sheet
③ Table of Contents
④ Glossary of Technical Terminology
⑤ Abstract
⑥ Introduction
⑦ Body
⑧ Conclusion(s)
⑨ Appendix/Appendices

① The **format** of a proposal is very important.

- If published guidelines or special forms exist, they should be taken into account.
  - × Guidelines should be followed to the letter and all required/requested items should be included in the final copy!
- As with all S&TW, the proposal should be perfect, grammatically correct, devoid of any typographical errors, strike-overs, crossed-out letters/words, or white-out!
- Fanciness should be avoided and the final product should be attractive, neat, yet somewhat conservative in appearance.

② The **title page/cover sheet** is extremely important!

- The title should state clearly what the proposal is about in as few words as possible.
- A longer title may be acceptable if a shorted one would be ambiguous.
- The title should be neat but not very informative.

③ For the **table of contents** see the lecture notes on **S&T Reports**.

④ The **glossary of technical terminology** is particularly helpful for the secondary audience whose S&T background is not as well established as peers in the particular S&T area.

⑤ For the **abstract** see the lecture notes on **S&T Documentation**. The abstract should be technical, yet, as brief as possible but complete in its description of the project.

⑥ The **introduction** should give answers to the following questions:

❶ What is the present situation?
❷ What problem do you want to solve?
❸ Why are you trying to solve the problem?
❹ What will the outcome of the project provide that will be beneficial?
❺ To whom will the outcome of the project be beneficial?
❻ If the project is research oriented, what has been done by you and other related to your proposal (e. g., a literature review)?
❼ What are your special qualifications for attempting the project?

Example:

A Proposal for

The Design and Development of a Dynamic Infrared Radiation Thermometer

by İnci Çilesiz

submitted to Professor J. Valvano

for BME 385J Computer-Based Biomedical Instrumentation

The University of Texas at Austin
Biomedical Engineering Program

20 September 1992

⑦ The **body** is the most important section of a proposal. It should be specific but less technical and should give answers to the following questions:

❶ Is the customer's problem or need well understood?
❷ Is a sound and concrete technical solution to the problem provided that is in compliance with the customer's requirements or specifications?
❸ Are other possible solutions recognized and discussed?
❹ Is the presentation clear?
❺ Is the proposed project realistic and reasonably priced?
❻ Is the budget well referenced?
❼ Is the management planning sound and intelligent?
❽ Are the facilities and the qualified personnel adequate?
❾ Are the time schedules for proposed work realistic?
❿ How frequently will the customer be informed of progress?

⑧ The **conclusion** should give an **overview of the project** and an emphatic, brief, but comprehensive statement explaining **why your company or organization should be chosen for the award**.

⑨ The **appendices** should provide

- detailed technical descriptions for a secondary audience of experts and/or peers
- detailed budget with an explanation of various items
- a list of equipment currently available to perform the project
  ✦ needed but not available equipment should be listed in the budget
- a statement of current support
  ✦ particularly if the proposal is a request for a continuation or extension of an existing grant
- résumés of the PI and other participants
- a list of successfully completed projects or former grants/awards by the PI and his/her organization/company

References:

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Cain, B. E. (1988). The Basics of Technical Communication. Washington, DC, American Chemical Society, Ch. 15.

Mills, G. H. and J. A. Walter (1978). Technical Writing. New York, Holt, Reinhart and Winston, Ch. 15.