

## 1.4 Project Overview

Although divided into many steps, this guide covers three broadly defined project phases:

- *Needs analysis*: defining the rural telecommunications requirement;
- *Feasibility study*: evaluating alternatives and deciding the best way to satisfy the defined need;
- *Detailed engineering*: detailing the conceptual design and preparing project work statements and system design specifications into contract bidding documents.

Figure 1.2 shows these typical phases and outlines the contents of this book.

## 1.5 Nature of Planning

The high cost of implementing and operating a telecommunications network and its long plant life make good planning essential. Inadequate planning can lead to misuse of resources, reduced service quality, and poor economic performance through loss of revenue and extra costs.

In concluding this preview, a quick review of some of the general characteristics and issues of planning is useful. Each of these is discussed again in more detail during later sections.

***Iterative Nature.*** All parts of the planning process are iterative. Each phase should be undertaken first at a high level to broadly establish scope, possible solutions, and costs. Then a more detailed examination should be undertaken to refine the analysis and confirm the results. Later decisions must be fed back to earlier decisions to ensure consistency and validity.

Each iteration should move closer to an optimal solution, and an equitable match between project scope and available budget.

***Multiple Solutions.*** Many rural networks have more than one optimal solution. Two different planners can arrive at two different, but equally valid, solutions.

***Complex, Interrelated Variables.*** Planning a rural project means finding an optimal solution in the presence of a large number of complex and interrelated parameters and variables. The planning process must provide the organizing principle for resolving these into an optimal solution. The order in which steps are taken to arrive at a solution is often important to minimize the number of iterations needed.

***Sophistication of Techniques.*** Data required as inputs to a rural network plan are often incomplete and uncertain; for example, traffic forecasts may be inaccurate or unavailable. The sophistication of solution techniques should take this into account. If accuracy is low, there is no point in using highly sophisticated techniques such as complex algorithms or specialized computer programs. Instead, a simple manual analysis will likely be adequate.

***Long-Range Planning.*** Short-term solutions may impede orderly and economical network growth in the long run. Short-term economic analysis usually favours existing plant. Therefore, all planning must be based on a perspective that is sufficiently long term so that existing plant has only a minimal effect on the outcome of the economic study.

Long-range plans must be in place and periodically updated. Only then can they be used effectively to structure short-term plans, such as a project plan or a government 5-year development plan.