8.1 Introduction to Management

The management of the requirements engineering process is similar to the management of any other endeavour. Before starting out it is necessary to understand what needs to be done. We need to know the sorts of activities that must be undertaken. We need to know whether there are any dependencies between the activities; for example, whether one activity can only commence when another one has been completed. We need to know what kinds of skills are required to perform the activities.

It is good practice when preparing a plan to concentrate on the outputs that will be generated by each activity. Outputs can be seen and provide tangible evidence that work has been or is being done.

From all of this information we can generate a plan in which we have identified the activities to be undertaken, the people who will perform the activities and the time it will take them to complete the activities. We can then start work following the plan and the manager can monitor work against the plan. In an ideal world the plan will be followed to the letter. Nothing will go wrong and we shall arrive at the completion date of the plan with all the work done.

Reality can be quite different. First, estimating the time and effort required to complete a task is very difficult unless the manager has extensive experience of tackling similar jobs in the past. Secondly, there may be difficulties discovered as work progresses that could not have been foreseen. For example, the plan may have relied on the availability of a key person at a specific time and, for any number of reasons, that person is not able to be there.
These events cause deviations from the plan and lead to the need to change it. Once a new plan has been put in place, the whole process is repeated. A frequent consequence of changing the plan is that, almost inevitably, the cost will increase and/or the time to completion will be later than previously estimated. An alternative approach is to keep the costs and completion time constant and reduce the amount of work to be done. This can be a viable strategy in some circumstances; for example, it may be imperative that a company has a new product out in the market place at a given time (to address the competition) and within a given budget (because that is all the company can afford) irrespective of how capable the product is (although at least a threshold level is usually necessary to avoid triviality). This situation is typical of the way in which commercial pressures can drive a project.

It is important to recognize that any project is constrained by the three factors:

- product capability;
- cost;
- timescale.

These three factors are related as indicated in the diagram of Figure 8.1. Any change to one of these factors will have a consequential change to at least one of the others. Figure 8.1 also indicates that projects make progress by taking decisions. Every decision positions the project with respect to these three fundamental factors. It is the pipe dream of every project manager that each decision will improve the product capability while simultaneously reducing cost and shortening development time. In spite of its improbability, this dream is widely held.

![Figure 8.1](image-url)