

# 1 Project definition

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## PROJECT DEFINITION

Many people and organizations have defined what a project is, or should be, but probably the most authoritative definition is that given in BS 6079 'Guide to Project Management'.

This states that a project is:

'A unique set of co-ordinated activities, with definite starting and finishing points, undertaken by an individual or organization to meet specific objectives within defined schedule, cost and performance parameters.'

The next question that can be asked is 'Why does one need project management?' What is the difference between project management and management of any other business or enterprise? Why has project management taken off so dramatically in the last twenty years?

The answer is that project management is essentially management of change, while running a functional or ongoing business is managing a continuum or 'business-as-usual'.

Project management is not applicable to running a factory making sausage pies, but it will be the right system when there is a requirement to relocate the factory, build an extension, or produce a different product requiring new machinery, skills, staff training and even marketing techniques.

It is immediately apparent therefore that there is a fundamental difference between project management and functional or line management where the purpose of management is to continue the ongoing operation with as little disruption (or change) as possible. This is reflected in the characteristics of the two types of managers. While the project manager thrives on and is *proactive* to change, the line manager is *reactive* to change and hates disruption. In practice this often creates friction and organizational problems when a change has to be introduced.

Projects may be undertaken to generate revenue, such as introducing methods for improving cash flow, or be capital projects which require additional expenditure and resources to introduce a change to the capital base of the organization. It is to this latter type of project that the techniques and methods described in this book can be most easily applied.

Figure 1.1 shows the type of operations which are suitable for a project type of organization and which are best managed as a functional or 'business as usual' organization.

Both types of operations have to be managed, but only the ones in column (a) require project management skills.

It must be emphasized that the suitability of an operation being run as a project is independent of size. Project management techniques are equally suitable for building a cathedral or a garden shed. Moving house, a very common project for many people, lends itself as effectively to project management techniques such as tender analysis and network analysis, as relocating a major government department from the capital city to another town. There just is no upper or lower limit to projects!

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(a) Project organization	(b) Functional or line organization
Building a house Designing a car Organizing a party Setting up a filing system Setting up retail cash points Building a process plant Introducing a new computer system	Manufacturing bricks Mass producing cars Serving the drinks Doing the filing Selling goods and operating tills Producing sausages Operating credit control procedures

**Figure 1.1**

As stated in the definition, a project has a definite starting and finishing point and must meet certain specified objectives.

Broadly these objectives, which are usually defined as part of the business case and set out in the project brief, must meet three fundamental criteria:

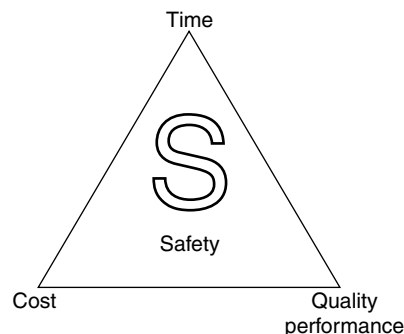
- 1 The project must be completed on time;
- 2 The project must be accomplished within the budgeted cost;
- 3 The project must meet the prescribed quality requirements.

These criteria can be graphically represented by the well-known project triangle (Figure 1.2). Some organizations like to substitute the word 'quality' with 'performance', but the principle is the same – the operational requirements of the project must be met, and met safely.

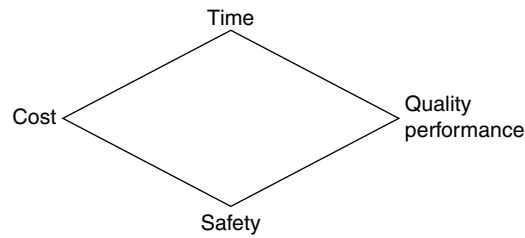
In certain industries like airlines, railways and mining etc. the fourth criterion, safety, is considered to be equally important, if not more so. In these organizations, the triangle can be replaced by a diamond now showing the four important criteria (Figure 1.3).

The order of priority given to any of these criteria is not only dependent on the industry, but also on the individual project. For example, in designing and constructing an aircraft, motor car or railway carriage, safety must be paramount. The end product may cost more than budgeted, may be late in going into service and certain quality requirements in terms of comfort may have to be sacrificed, but under no circumstances can safety be compromised. Aeroplanes, cars and railways *must* be safe under all operating conditions.

The following (rather obvious) examples show where different priorities on the project triangle (or diamond) apply.



**Figure 1.2**

**Figure 1.3**

## TIME-BOUND PROJECT

A scoreboard for a prestigious tennis tournament must be finished in time for the opening match, even if it costs more than anticipated and the display of some secondary information, such as the speed of the service, has to be abandoned. In other words, cost and performance may have to be sacrificed to meet the unalterable starting date of the tournament.

(In practice, the increased cost may well be a matter of further negotiation and the temporarily delayed display can usually be added later during the non-playing hours.)

## COST-BOUND PROJECT

A local authority housing development may have to curtail the number of housing units and may even overrun the original construction programme, but the project cost cannot be exceeded, because the housing grant allocated by central government for this type of development has been frozen at a fixed sum. Another solution to this problem would be to reduce the specification of the internal fittings instead of reducing the number of units.

## PERFORMANCE (QUALITY)-BOUND PROJECT

An armaments manufacturer has been contracted to design and manufacture a new type of rocket launcher to meet the client's performance specification in terms of range, accuracy and rate of fire. Even if the delivery has to be delayed to carry out more tests and the cost has increased, the specification must be met. Again if the weapons were required during a war, the specification might be relaxed to get the equipment into the field as quickly as possible.

## SAFETY-BOUND PROJECT

Apart from the obvious examples of public transport given previously, safety is a factor that is required by law and enshrined in the Health & Safety at Work Act.

Not only must safe practices be built into every project, but constant monitoring is an essential element of a safety policy. To that extent it could be argued that *all* projects are safety-bound, since if it became evident after an accident that safety was sacrificed for speed or profitability, some or all of the project stakeholders could find themselves in real trouble, if not in jail.

A serious accident which may kill or injure people will not only cause anguish among the relatives, but, while not necessarily terminating the project, could very well destroy the

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company. For this reason the 'S' symbol when shown in the middle of the project management triangle gives more emphasis of its importance (see Figure 1.2).

It can be seen therefore that the priorities can change with the political or commercial needs of the client even within the life cycle of the project, and the project manager has to constantly evaluate these changes to determine the new priorities. Ideally, all the main criteria should be met (and indeed on many well-run projects, this is the case), but there are times when the project manager, with the agreement of the sponsor or client, has to take difficult decisions to satisfy the best interests of most, if not all, the stakeholders.