PROJECT MANAGEMENT

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Commonwealth of Learning
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The Commonwealth of Learning and the Virtual University of the Small States of the Commonwealth wish to acknowledge the contribution and repurposing of the Open University of the UK Learning Space OER project management courseware in the creation of this course. Specifically the course was compiled from the following OUUK Learning Space OER products:

B713-1 – Preparing a Project

B713-2 – Planning a Project

B713-3 – Managing Projects Through People

B714-4 – Implementing the Project

B714-5 – Completing the Project

The original OER courseware is available from the LearningSpace site at: http://openlearn.open.ac.uk/.

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COURSE OVERVIEW

INTRODUCTION

Project management is the discipline of planning, organizing, securing and managing resources to bring about the successful completion of specific project goals and objectives. It is sometimes combined with program management, however technically that is actually a higher level construction: a group of related and somehow interdependent projects.

A project is a short-term venture, having a **defined beginning and end** (usually constrained by date, but can be by funding or deliverables), undertaken to meet unique goals and objectives, usually to bring about beneficial change or added value.

The temporary nature of projects stands in contrast to business as usual (or operations) which are repetitive, permanent or semi-permanent functional work to produce products or services. In practice, the management of these two systems is often found to be quite different, and as such requires the development of distinct technical skills and the adoption of separate management.

The primary challenge of project management is to achieve all of the project goals and objectives while honouring the preconceived project constraints. Typical constraints are scope, time, and budget. The secondary—and more ambitious—challenge is to optimize the allocation and integration of inputs necessary to meet pre-defined objectives.

COURSE GOALS

After completing this course you should be able to:

1. Discuss the nature of project management and how it differs from general business management.
2. Examine how project management can be used to support business growth.
3. Explain the project management process and procedures in accordance with PMI guidelines and PMBOK applications.
4. Employ project management software.
5. Develop project schedules including PERT, Gantt and WBS.
6. Assign and manage resources using project management software.
7. Employ project management forms and checklists.
8. Manage project teams.

COURSE TEXT

The following manual from the Project Management Institute is recommended as required reading. Instructors can substitute this recommended reading with other articles or texts based on their specific requirements as long as the readings support the different units and their course and unit goals.

Project Management Institute. (2000). A Guide to the Project Management Body of Knowledge – Third Edition.

Available at Amazon.com.

Assignments and Projects

A series of activities and assignments guide you through the concepts presented in this course and asks you to demonstrate that you can apply the concepts to support your approach to management. The hosting institution and supporting instructor may add or modify the assignments required to demonstrate mastery of the course learning outcomes. A summary of this work is included at the beginning of each unit. Journaling Requirements

To capture the output from the reflective questions and activities you are asked to keep a personal journal. At the end of the course the personal journal will be submitted to your instructor for feedback and grading.

Assessment

Assessment takes the form of responding to activities, as well as written assignments and examinations as determined from time-time by the institution. In cases where coursework assignments, fieldwork projects, and examinations are used in combination, a percentage rating for each component will be communicated to you at the appropriate time.

Journaling Requirements

To capture the output from the reflective questions and activities you are asked to keep a personal course journal. At the end of the course the journal will be submitted to your instructor for feedback and grading.

Assessment Methods

Assessments take the form of responding to activities, as well as coursework assignments, a final project and examinations as determined from time to time by the institution. In cases where coursework, assignments, projects and examinations are used in combination, percentage rating for each component will be communicated to you at the appropriate time.

Time Required

This course is worth 14 credits, and each credit is equivalent to 10 notional hours. You are, therefore advised to spend not less than 140 hours of study on this course. This notional time includes

- Going over activities embedded in the study material.
- Peer group interaction (where necessary).
- Face-to-face tutorials (where necessary).
- Working on tutor-marked assignments.
- Preparing and sitting examinations (where that is required).

COURSE SCHEDULE

This course was designed to support a 12 to 14 week semester. The hosting institution and supporting instructor should produce and distribute a detailed schedule to learners based on this content, the assignments and other readings/activities that the instructor wishes to add.

Unit One - Preparing a Project

Introduction

Many business managers find that they are required to manage projects. In this unit we aim to help you to take an overview of the features of a project and the issues that arise in managing a project. Once you have identified a piece of work as a project, you are able to use a number of management approaches that have proven effective in managing projects. A project is a one-off, non-repeated activity or set of tasks that achieves clearly stated objectives within a time limit. Most projects are goal-oriented with clear beginnings, middles and ends, have constraints that limit and define the process, and outcomes that can be measured in terms of performance against agreed indicators. Other features of a project include the purpose, goals, resources, constraints and quality requirements.

All of the matters listed in the unit objectives below need to be considered before the detailed project brief or definition document can be drawn up. The project brief is an important document because it details the agreement that guides all the subsequent stages of a project.

Having completed your study of this unit, you should be able *to prepare a project brief or definition document* so that agreement can be obtained with the project sponsor. This document will provide a blueprint for the planning phase of a project.

Unit Objectives

At the end of this unit you should be able to:

1. identify the main features of a project;
2. explain the importance of the key dimensions of budget, time and quality;
3. identify the links between a project's scope and definition and a sponsor's strategic and operational objectives;
4. agree the objectives of the project in sufficient detail to enable it to be planned effectively; and
5. assess the feasibility of a project and to negotiate any necessary amendments with the sponsor to ensure that the goals can be achieved within the constraints of the project.

Readings

As you work through this unit you should read the following chapters from the PMBOK.

Project Management Institute. (2000). A Guide to the Project Management Body of Knowledge – Third Edition.

- Chapter 1 – Introduction

- Chapter 2 – The Project Management Context
- Chapter 3 – Project Management Processes.

ASSIGNMENTS

Individual and reflective activities are embedded in the unit discussion. You should consider the activity and record your observations or comments in your course journal.

In addition your instructor will provide an assignment that you must submit to demonstrate comprehension of the content presented in this unit.

What is a Project?

A Definition

One definition is:

> *'A project is a one-off, non-repeated activity or set of tasks which achieves clearly stated objectives within a time limit.'*

Most managers work on projects, often small or short-term projects, rather than large ones that take several years to complete. Size or length of time do not indicate that one project is more important than another – often small projects pave the way for major improvements to be made. A project is often about creating something new or implementing a major change that can be viewed as a complete event.

What Is Expected From Projects?

All projects are different. The level of complexity differs and the context in which a project exists will affect it. There is no single right way to manage a project. All projects have customers.

There are three key dimensions to a project:

1. budget;
2. time; and
3. quality.

These three dimensions have to be balanced to manage a project successfully.

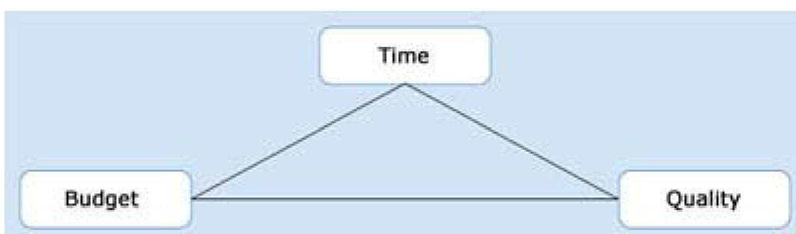


Figure 1.1 - The balance of project dimensions

These three dimensions are interlinked and each of the dimensions will probably receive particular attention at different stages in the project. The model is useful in reminding us of the tensions that may arise in attempts to keep each of these dimensions progressing according to plan. Traditional approaches to management of projects have focused on the technical aspects and often paid less attention to the influence of people on the project. People commission and sponsor projects, people are stakeholders in projects and people plan and carry out projects. In managing a project, the leadership, motivation and management of the people involved are as important as using appropriate planning, control and monitoring techniques. Again, there is a balance to be achieved. There will be people who want the project to succeed and people who are antagonistic towards it for some reason – for example, not everyone benefits from a new road, shopping centre or airport. There are also people involved in completing the project. The project team will have a range of different attitudes towards the project and may or may not want it to succeed! It would therefore be useful to draw up a communications matrix in order to see the stages of the project and who needs to be contacted.

The Communications Matrix

A communications matrix is a way of noting who needs to be consulted and at what stage. It can be a formal chart or rough notes, but its purpose is to help minimise the problems that arise when people feel they have not been consulted. The communications matrix below shows an example of a communications matrix for putting a new building unit into use.

A communications matrix

Stages	Operations Director	Area Manager	Site Manager	Marketing Director	Equipment Suppliers	Fittings Suppliers
Initial plan	✓	✓	✓	✓	✓	✓
After first site meeting		✓	✓		✓	✓
Operation of unit agreed	✓	✓	✓		✓	✓
On-site work nearing end	✓	✓	✓	✓	✓	✓
Start operations	✓	✓	✓	✓		

Project Examples

A project might involve establishing a new product or service, developing an existing product or service or discontinuing a product or closing a service that is no longer required.

A project might arise from recognition of new needs of customers or service users or from an opportunity that is expected to deliver benefits to the organisation.

Projects might also arise from a new organisational requirement, for example, as a response to a change in legislation that requires changes in employment systems or in health and safety procedures. In such a case, the project could be investigating the extent of change necessary and reporting recommendations to a decision-making body or the implementation of the change to the point where routine working could be resumed. (The routine work that followed the change would no longer be a project.)

WHY PROJECTS FAIL

Unfortunately, projects are not always completely successful and the consequences of an unsuccessful project can be significant politically, financially and socially for organisations and for the people who carry out the project. Considering the key dimensions of a project (budget, time and quality) there are three obvious ways in which one might fail:

- It might run over budget (or have to stop before the goals are achieved because of insufficient funding).
- It might take much longer than planned to achieve the goals (or might have to stop when time runs out before the goals are achieved).
- It might be completed within the time and budget available but fail to meet the quality requirements (and so be of lower value than expected).

There are other things that lead to the failure of a project:

- the project objectives were not clear to the team;
- it was not clear to the team what the outcomes of the project should be;
- the project was over budget;
- the project activities ran late;
- certain outcomes of the project have not been achieved;
- the users were not consulted about their needs; or
- the training needed to get people to work differently has not been considered. (If a project is supposed to lead to successful implementation of a new way of working, the training needs of staff are an essential consideration.

Problems such as these lead to the failure or abandonment of many projects.

Activity 1.1

From your experience, make a list in your Course Journal of the most important factors that have contributed to the success of any projects in which you have been involved. Which three factors would you rank as most important?

Answer

You might have identified sufficient time and resource, especially if you have been involved in urgent projects. You may also have identified the importance of clear objectives – particularly if you have experience of working with unclear objectives and of the misunderstandings that can arise from initial confusion.

Factors that have been identified as important to the success of projects include:

- Making sure that the objectives are clearly defined
- Having senior management support.

- The allocation of sufficient time and resources.
- Skills of the project manager.
- Good communications.
- Advance planning and monitoring methods.
- Communicating with stakeholders.

WHERE DO PROJECTS COME FROM?

THE IDEA

Essentially, any project begins with an idea. The idea is often one about how to do something that seems to be needed. Transforming ideas into projects begins with recognising the nature of this driving force:

Projects arise in order to meet human needs. A need emerges and is recognized, and the management determines whether a need is worth fulfilling. If it is, a project is organized to satisfy the need. Thus, needs are the fundamental driving force behind projects. This seminal aspect of needs makes them important for project management. Their emergence sets off the whole project process. If at the outset we do not understand a need and its implications, if we incorrectly articulate it, or if we mistakenly address the wrong need, we have gotten off to a bad start and can be certain that our project will be trouble-filled.

Frame (1987) identifies three phases in the identification of needs:

1. **Needs emergence** – all sectors face the continual emergence of new needs in a changing organisational environment. Needs can evolve both from within and from outside an organisation. All stakeholders have interests in anticipating and predicting needs and responding to them proactively.

2. **Needs recognition** – recognising a need requires organisations to make use of existing data and expertise both from inside and out, and to collect additional data in order to consult stakeholders and to identify the implications of changing conditions. In project management terms, this phase is concerned with shaping an emergent need into the goals that will begin to define the outputs or outcomes of the project.

3. **Needs articulation** – this phase involves clarifying the understanding of a need by describing its characteristics more precisely. This enables managers to identify the most appropriate way of meeting the need, it enables stakeholders to contribute to the developmental process, and it leads to a precise statement of what must be done or provided to meet the need – the project definition.

Sometimes the strategic need for a project is determined by senior managers and the project goals are determined before project managers and staff are involved. For example, if an organisation decides at board level that a new headquarters building is to be commissioned and sited in a new location, staff may not be consulted until the decision has been made. However, it is not unusual for project goals to be identified by those working within a changing setting, particularly if these people might be considered to be very familiar with the needs that are to be addressed by the project.

In clarifying a project's scope, information needs to be collected about:

- who the stakeholders are and what their interests are in the project;
- the project's aims and objectives and how the project is going to achieve them within appropriate resource and time constraints;
- the opportunities offered by the project and the threats to its success.
- There are also tools that can help to get a better understanding of the project. These include mind mapping and a task breakdown chart.

MIND MAPPING

The term 'Mind mapping' was devised by Tony Buzan for the representation of ideas, notes, information, etc., in radial tree-diagrams – sometimes also called 'spider diagrams'. These are now very widely used. Try a web search on 'Buzan', 'mind map' or 'concept map'.

How to Draw a Mind-Map

1. Put your paper (ideally a large sheet) in landscape format and write a brief title for the overall topic in the middle of the page.
2. For each major sub-topic or cluster of material, start a new major branch from the central topic, and label it.
3. Each sub-sub-topic or sub-cluster forms a subsidiary branch to the appropriate main branch.
4. Continue in this way for ever finer sub-branches.
5. You may find that you want to put an item in more than one place. You could just copy it into each place. Alternatively, you could draw in a cross-link.
6. You may find that you want to show relationships between items on different branches. You can do this by coding them using colour, type of writing, etc.
7. You may find that it helps to bring the map to life if you identify particular branches, items, etc., with drawings, etc.

(Source: Buzan, T. (1982) *Use Your Head*, London, Ariel Books)

There are several mind mapping software packages, such as Compendium, available. They make it very much easier to edit and rearrange the map, they can sometimes hold notes and documents, etc. associated with labels (so that they can act as filing systems), and some can convert between map and text outliner formats. Figure 1.2 shows an example of a Compendium created mind map.

Figure 1.2 - Mind Mapping Tool

You may be thinking that if the factors for success are well known, why do projects still fail? Managers often have to manage projects alongside their other tasks. The time and effort needed to plan the project may seem too great when other tasks are pressing. There is little to show in the planning stages and managers are often tempted to start on something where the action can be more visible.

Task Breakdown Chart

The task breakdown technique is a very logical approach to identifying the tasks involved in a project. Some people may find it suits them better than using mind maps; other people may find the techniques complement each other.

To do a task breakdown chart, first draw a box at the top of a page with the project title inside it. Then mentally identify the main elements that go to make up the project as shown below.

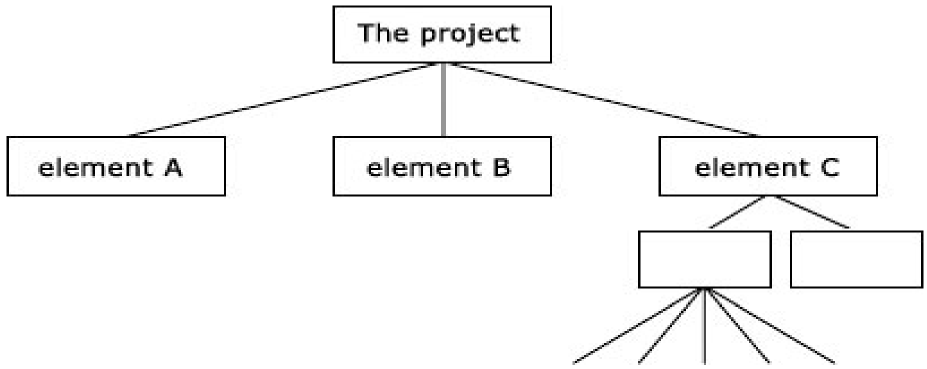


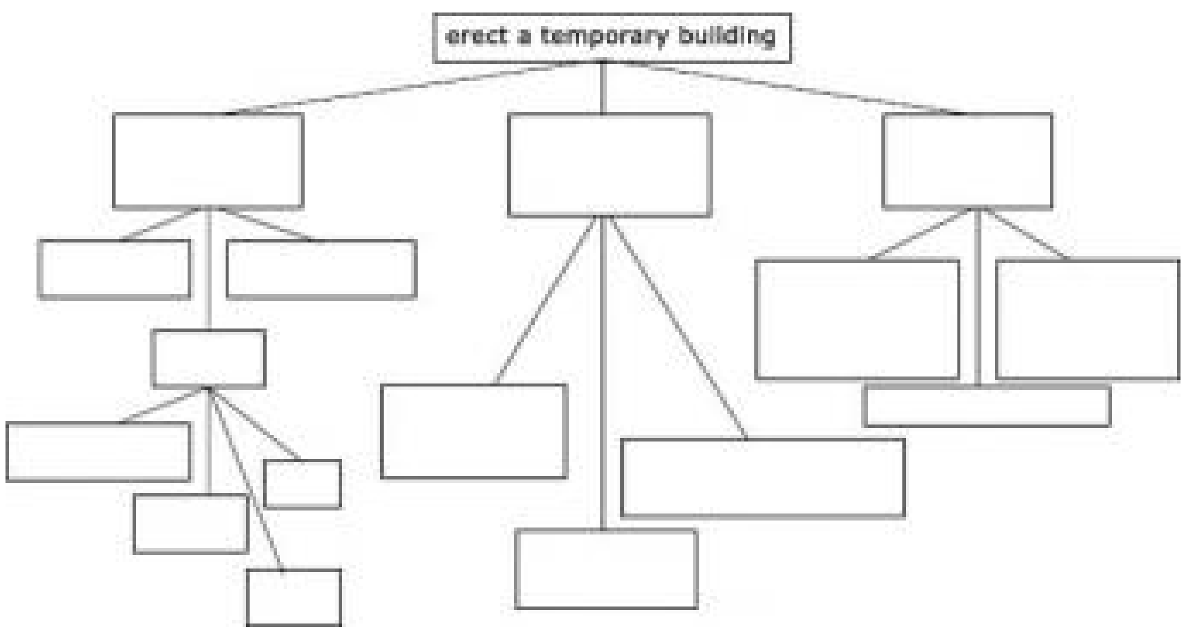
Figure 1.3 - Starting the Task Breakdown Chart

A further degree of task breakdown has been indicated on item C, and could have been shown for elements A and B as well. In general terms it is for the individual to decide the level of detail to which they wish to go.

The example in activity 3 relates to the erection of a temporary building and is a simplified chart in order to illustrate the technique.

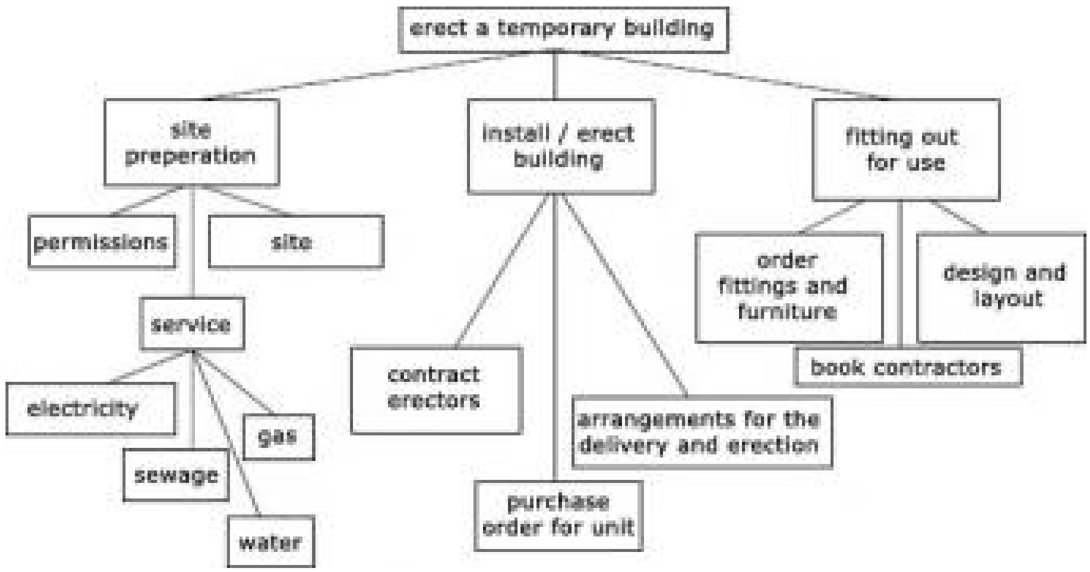
Activity 1.3

Try to complete the task breakdown chart below, that outlines the potential tasks required to erect a temporary building. You should create a paper copy of your own to work in the assignment.



A sample answer is provided – your results may not be identical – it is a matter of interpretation.

Here is one approach to the task breakdown chart.



Project Inputs and Outputs

A project involves the transformation of inputs into an output or product. For example, people's mental and physical efforts, bricks and mortar, equipment or materials might be transformed into a new road, a municipal park or an advertising campaign. Or perhaps transformed into a stream of outputs or products, for example, attendances at a conference or exhibition, state school places or data from a new in-house costing system.

The output or outputs might be used within the organisation (for example, a credit sales and debtors collection system) or it might be used by the general public (for example, a road might be used by pedestrians and motorists). The output might be sold as a one-off immediately after the project is complete (for example, a new hotel building) or used to gain income at some time in the future (by operating the hotel and accommodating guests).

The input-output questions run along the lines of:

- what resources will we require and what will they cost the organisation?
- what products will be produced, in what quantity and of what quality?

Other questions depend on the type of organisation:

- For what prices can our for-profit organisation sell these products and how much revenue will they generate?
- How much must our non-profit organisation charge users for these products if these charges are to cover resource costs?

In producing these products, how much economic, political and/or social value will our governmental organisation confer on their direct beneficiaries, and on other citizens and other taxpayers generally; and by doing so, what private costs will our governmental organisation impose on citizens and other taxpayers?

What cost savings will accrue to our organisation from these products or what fines/penalties will our organisation avoid by producing these products?

Setting Aims and Objectives

'If you don't know where you're going, you might end up somewhere else.'

(Casey Stengel, New York Yankees, quoted in Beckhard and Harris, 1987)

Aims are broad goals and can encompass an organisation's mission and values, whereas objectives define more precisely what a project is trying to achieve and how success will be recognised. The SMART principle is often applied to objectives. They should be:

Specific – clearly defined with completion criteria

Measurable – you will know when they have been achieved

Achievable – within the current environment and with the skills that are available

Realistic – not trying to achieve the impossible

Time Bound – limited by a delivery date based on real need.

This provides a useful checklist, but it is not always possible to achieve objectives with all of these details established at the outset and it may be necessary to revisit them as the project progresses. It is also possible to develop groups of objectives to deal with different aspects of the project. For example, there may be process objectives that identify ways in which the work will be carried out as well as the more usual outcome objectives to identify the details of outcomes required.

The Stakeholders

Anyone in the organisation, or outside it, who has or might have a legitimate interest in the project and its outputs or outcomes, is a stakeholder. You need to identify these people and groups so that you can make sure you meet their expectations and manage the influence they may wish to exert over the progress of the project. Particularly important among the stakeholders will be:

- the project sponsor – the person or group who set up the project, authorised the resources and put you in charge of it;

- the project team – the group of people who are going to carry out the tasks and activities;
- functional managers and others who control resources you will need or whose expertise may be useful;
- influential individuals or groups who are likely to be affected by the project and its outcomes.
- Depending on the nature of the project, many other groups or individuals may have a stake in it, such as:
- consumers, customers, users of services or products;
- other staff in the same or other departments;
- managers and staff of partner or collaborating organisations;
- the senior management team of your organisation;
- shareholders or their representatives;
- elected members (if you are working in a local government context);
- trustees (if the project involves a charitable trust);
- members of the public (especially if you are managing a high-profile project involving a new service or a new building);
- media representing public interest; and
- competing organisations.

Each of these stakeholders is likely to have different expectations of the project and thus different criteria for its success. These may be overt or covert, and they may conflict with one another. You need to ensure that, as far as possible, the goals and objectives of the project take all these criteria into account, because this is how your success will be measured.

Activity 1.4

Consider the different views each of these stakeholders might have of the three key dimensions of a project. Put a tick to indicate which dimension(s) each stakeholder might think is the most important from their personal perspective. Record your response in your course journal.

The sponsor usually focuses on the budget and the outcomes – what return is achieved for the investment? What financial risks are involved and is it achieving value for money? As the outcomes are produced, the focus of a sponsor may change to concern about the quality, about ensuring that the outcomes are well received by customers or users. The sponsor is less likely to be interested in the schedule as long as the overall timescales that were agreed are met.

A functional expert is likely to be focused on the quality of work, both of the work associated with the project and with the impact of the project requirements on any other work in progress. Thus the functional expert will be concerned to balance the quality of outcomes with the schedule and will want to have sufficient time to achieve high quality results.

A line manager is likely not to be directly involved in the project, but to be responsible for staff who are members of the project team. This manager's interest will probably be to ensure that the project schedule will not be too disruptive of other work. The staffing resource will usually need to be agreed with any line managers of people that you would like to include in the project team.

Suppliers and contractors are required to fit in with the schedule to provide whatever is contracted at the right time and place. Their concern is usually to ensure that the budget has allowed them to make a profit and that they are able to provide the required quality of goods or services within the schedule allowed. Thus suppliers and contractors have to balance these three dimensions but also to ensure that the agreement represents value for their business.

Customers and end users often want the outcome quickly and may apply pressure to speed up the schedule, but once the outcomes are delivered the focus from this perspective moves to the quality. If the project has been scheduled tightly to meet the expectations of customers it will still be essential to meet the quality requirements if the project is to be considered a success.

The project manager has to balance all three dimensions and to accommodate the different priorities put on each by different stakeholders at different times.

WILL IT WORK?

CONSIDER THE PURPOSE

A project that meets an important need for your organisation will contribute towards meeting wider organisational targets. Consider the purpose – what will the project contribute that will further the goals of the organisation? It is often useful to discuss this with the project sponsor and to align the project objectives with the strategic objectives of the organisation. If the 'fit' of the project with the organisational direction is considered at an early stage, it might be possible to use the project to address a slightly wider set of concerns and to increase the available resources in recognition of the increased value of the project outcomes. Consider the questions that will help to determine the value of the project to the organisation:

1. What is the business case for carrying out this project?
2. How exactly will the project contribute to achieving any of the organisation's stated objectives?

If you ask these questions of the project and find that it does not contribute directly, the feasibility of the project should be considered as doubtful because the use of resources will be difficult to justify.

FEASIBILITY STUDIES

For some projects, particularly large or innovative ones, it may be appropriate to carry out a **feasibility study** before beginning the detailed work of planning and implementation. Alternatively, or in addition, it may be possible or desirable to try out an idea on a small scale, as a pilot project, before the main project begins. It may also be appropriate to carry out a feasibility study when there are still a number of options that would all appear to offer appropriate solutions to the problem addressed by the potential project. A feasibility study can help to clarify which option or options would achieve the objectives in the most acceptable way.

The purpose of a feasibility study is to determine whether the required outputs or outcomes can be achieved with the available resources. It should ensure that the concerns of all the stakeholders are considered. The key issues to be addressed will be:

Financial – comparing the costs of resourcing the project with the benefits it may bring and the costs that may arise if the project is not implemented.

Technical – establishing how any new system will mesh with existing systems, fitness for purpose, whether the organisation and staff have competence to work with the new technology, how to manage the transition.

Environmental and social – stakeholders' concerns about environmental impact, impact of project on local environment and local social conditions.

Managerial – examining the implications for work practices, including any need for new staff or training for existing staff, changes to terms and conditions of employment, and implications for equal opportunities.

Value-related – investigating motivational and cultural issues to make sure that the project will win support, both for the processes used and for the intended outcomes.

A feasibility study may be a relatively brief activity. For a large project, however, it may have to be very comprehensive and could be regarded as a project in its own right, as in Example 1: A feasibility study.

Example: A Feasibility Study

Managers in a public library decided that its members, as well as a wider constituency of citizens in their town, would benefit from a directory of all services relevant to leisure pursuits and informal learning opportunities. The local council indicated that it might assist with publication and supported the idea.

The group conducted a feasibility study to consider whether:

- similar projects have been successful elsewhere in terms of benefits to the local community;
- the proposed project manager, who is a senior librarian, has the time and expertise to manage the project;
- the support required from other agencies in the area for data collection is likely to be forthcoming;
- the time and money are available to complete initial publication and make the directory available to the public; or
- statutory agencies or other voluntary organisations will provide funding in the long term to keep the directory up to date.

RISK AND CONTINGENCY PLANNING

> *Risk in projects may be defined as 'an event or situation … which can endanger all or part of the project'*
>
> (Nickson and Siddons, 1997).

Risk management is fundamental to project management and has an impact on estimates of time and effort required for the project. It is concerned with assessing the kinds of risk associated with trying to make something happen, for example the possibility of delays in the schedule caused through staff sickness or materials not being available at the appropriate time. Risks in a project can be both internal – arising from within the project – and external – arising from the context or environment of the project.

Example: The Potential Cost of Failing to Identify Risk

In the late 1960s, our New York sales office sold a 707 charter to Mr Harold Geneen, then chairman of ITT, for an executive meeting in London. We had 28 of the most senior ITT executives all on one plane, all at the same time. The charter was the first American Airlines flight to London for about 20 years. The ultra-First Class service contained the finest wines, thousands of dollars in gourmet meals, five movies and the best cigars. Our chief pilot was captain, our executive chef from the general office worked the galley, and we had a doctor, nurse, and a security guard onboard. Our New York sales office even sent a senior representative to coordinate all the details. Every detail was taken into consideration, or so we thought.

When we landed at London Gatwick, we taxied to the terminal and our captain asked Ground Control for fuel. We were horrified when a disturbed looking Exxon supervisor came onboard and informed us that because we had forgotten to obtain a credit standing for Exxon in Europe, they would not fuel our plane. In the face of a complete disaster with ITT, our sales rep calmly took out his personal automobile Exxon credit card, studied the back (which contained no credit limit), handed the card to the fuelling supervisor and said, ‘Fill it up.’

Exxon billed the personal card for more than $10,000, and our representative saved the day.

(Kay Muller, Flight Attendant Dallas/Fort Worth in Capozzi, 1998)

Risk in a project is generally limited to the possibility of different hazards impacting on the project, not risk in any form in which it might affect the organisation in which the project is located. There are four stages to risk management:

1. **identifying the risk** – determining which risks are likely to affect the project and documenting the characteristics of each;
2. **impact assessment** – evaluating the risk to assess the range of possible outcomes in relation to the project and the potential impact of each of these;
3. **developing plans to have in reserve** to reduce the impact of the most likely risks and to ensure that these plans are implemented when necessary;
4. **ensuring that the risks are kept under review** and that appropriate plans are developed to meet any changes in the type or likelihood of adverse impact.

Contingency plans indicate what to do if unplanned events occur. They can be as simple as formalising and recording the thought processes when you ask ‘what if …?’ and decide which options you would follow if the ‘what if?’ situation happened. The key points in contingency planning can be summarized as follows:

- Note where extra resources might be obtained in an emergency and be aware of the points in your plan where this might be required.
- Identify in advance those dates, which if missed, will seriously affect your plans, e.g. gaining financial approval from a committee that meets only once every six weeks.
- Know your own plan very well; probe for its weak points and identify those places where there is some ‘slack’ which only you know about …
- Keep all those involved (including yourself) well informed and up-to-date on progress so that problems can be addressed before they cause too much disruption.
- Recognise the key points in your plan where there are alternative courses of action and think through the possible scenarios for each one.
- Learn from experience – sometimes the unpredictable peaks and troughs in activity follow a pattern – it's just that we have yet to recognise it.

The following suggestions for dealing with contingencies were all made by practising managers:

- Break key tasks down to a greater level of detail to give better control.
- Be prepared to overlap phases and tasks in your plan in order to meet time-scales, but give the necessary extra commitment to communication and co-ordination this will require.
- Spend time at the start in order to pre-empt many of the problems.
- Learn from experience, e.g. develop a list of reliable contractors, consultants, etc.
- Try and leave some slack before and after things which you cannot directly control, to minimise the knock-on effect of any problems prior to, or during, such tasks.
- Pull tasks forwards if possible: one less thing to worry about!

In many projects, these four stages are considered almost simultaneously, but in large-scale projects each stage might warrant considerable attention. The main categories of risk can be summarised as:

- **physical** – loss of, or damage to, information, equipment or buildings as a result of an accident, fire or natural disaster
- **technical** – systems that do not work or do not work well enough to deliver the anticipated benefits
- **labour** – key people unable to contribute to the project because of, for example, illness, career change or industrial action
- **political/social** – for example, withdrawal of support for the project as a result of change of government, a policy change by senior management, or protests from the community, the media, patients, service users or staff
- **liability** – legal action or the threat of it because some aspect of the project is considered to be illegal or because there may be compensation claims if something goes wrong.

Where a risk can be anticipated, contingency plans can be implemented if the risk materialises, thus reducing its impact. Contingency planning can generate a range of possible responses to potential crisis situations. For example, you may prepare a list of temporary staff or agencies that you can call on in the event of a major flu epidemic among staff. Planning for risk at an early stage also means that the identified risks can be shared with stakeholders when plans are approved and potential costs can be built into the budget.

Activity 1.6

Imagine that you are managing a project that relies on services provided by one supplier over a six-month period. Make a list of the possible risks associated with that supplier in your Course Journal.

The relationship with this key supplier will obviously be very important. Organisations will usually issue contracts with conditions about quality, frequency and process of supplies.

Costs will be agreed at an early stage. However, things can go wrong. The supplier might fail to provide an acceptable service in price, quality or quantity. The supplier might go out of business during the period of the project. The supplier might fail to obtain sufficient staff or materials to be able to deliver as agreed. You might also have thought of the possibility that the project estimates were wrong and the contract with the supplier was inadequate for the needs of the project.

Risk Assessment and Impact Analysis

Risk assessment involves measuring the probability that a risk will become a reality; *impact analysis* involves measuring the sensitivity of the project to each identified risk. The key questions are:

1. What is the risk – how will I recognise it if it becomes a reality?
2. What is the probability of it happening – high, medium or low?
3. How serious a threat does it pose to the project – high, medium or low?
4. What are the signals or triggers that we should be looking out for?

A risk assessed as highly likely to happen and as having a high impact on the project will obviously need closer attention than a risk that is low in terms of both probability and impact. Each risk can be allocated to one of the cells in Table 1.1 – risk probability and impact.

Table 1.1 Risk probability and impact

	Low impact	Medium impact	High impact
High probability			
Medium probability			
Low probability			

The top right-hand box is the most dangerous area. If you place a risk statement in this box, you think it is very likely to happen, or you are very uncertain about it, and the consequences for your project would be very severe. Risks that fall into the bottom right-hand box may seem unlikely to happen but you are judging that the effect if they do makes them a danger area for the project.

Strategies for dealing with risks in project management include:

- ***risk avoidance*** – for example, where costs outweigh benefits, you may decide to refuse a contract;
- ***risk reduction*** – for example, regular reviews can reduce the likelihood of an end-product being unacceptable;

- ***risk protection*** – for example, taking out insurance against particular eventualities;
- *risk management* – for example, making use of written agreements in areas of potential disagreement; and
- ***risk transfer*** – passing the responsibility for a difficult task within a project to another organisation with more experience in that field.

A risk log should be started for the project at an early stage. This is a list of all the identified risks, together with an assessment of their probability and impact, and contingency plans for dealing with them should they become a reality. A risk log – or risk register – will look something like Table 1.2 – format for a risk register. It provides a framework for necessary actions to be taken and decisions to be made, and should be amended and added to on a regular basis as the project proceeds.

Table 1.2 - Format for a Risk Register

Risk	**Impact**	**Probability**	**Action**
Funding	High	Low	Secure funding base prior to start of project
etc.			

For each of the scenarios below, identify in your Course Journal which categories of risk are likely to be most significant and suggest appropriate strategies for dealing with them.

Case Studies

Case 1

A voluntary organisation providing accommodation and resettlement services for homeless people is proposing to extend its activities into another town where there is an established need. Local authority financial support has been offered verbally but no firm offer of funding has made in writing. Moreover, previous attempts by another organisation to do similar work met with resistance from a residents' association. Staff in the organisation are keen to support the proposal, but the manager who would be responsible for the project is on long-term sick leave.

Discussion

In **Case 1** the main risks relate to staffing (labour) and to political and social factors. These issues could be addressed by:

- meeting with community leaders to explain the importance and value of the new service (risk management)
- dealing with the staff sickness problem by allocating responsibility for the new house to a different team in the interim (risk reduction)

- making sure that the contract included a clause allowing the organisation to withdraw if adequate funding was not made available (risk avoidance).

CASE 2

A personnel manager set up a pilot project to test the practicalities of an anticipated change in the law involving the employment of people with disabilities. There were questions about whether the manager was wasting money and time by running the pilot because it seemed possible that the legislation would not proceed through Parliament without substantial changes being made that might change requirements placed on employers.

Discussion

In **Case 2** the risks fall into the political and social category with technical aspects. The project could be refocused slightly to enable the organisation to review its current employment practices for disabled people and to make recommendations about how improvements could be made that would benefit the organisation. This would provide information that would enable them to take action very quickly once the legislation details were confirmed. The organisation would then be in a position to conform with the legislative requirements whilst ensuring that changes that were made were of benefit to it in a number of ways.

CASE 3

A contracts manager for cleaning services in an office block set up a project to develop a quality monitoring system based on performance indicators developed from the office users. She was concerned about the timing of the change: contracts were about to be retendered, so new contractors would not know the performance indicators when they applied to deliver the service. There was also concern about whether there would be sufficient staff to monitor contractors' performance and how long it would take to train them to do the job.

Discussion

In **Case 3** the principal risks are in the labour, liability and technical categories. These risks could be reduced by close consultation with all concerned, particularly new contractors. If it is decided that the potential benefits outweigh the risks, the project could go ahead, allowing six months to develop a first draft of the performance indicators. Support for the appointment of an additional member of staff to carry out the monitoring could be agreed.

THE PROJECT BRIEF

Once the initial discussions about the purpose and feasibility of the project have confirmed that the project is worth carrying out, it is essential to establish the basic agreement as a document. The document will provide the reference point for all future work on the project and will be the basis for all judgements about whether the project is finally successful or not. This document is sometimes called the terms of reference, but usually incorporates some additional information in the form of a detailed *project brief*. The project brief becomes the basis for all subsequent decision making and planning.

The project brief is usually drafted by the person managing the project, but it is essential that it is discussed with all sponsors, and often with key stakeholders as well. The brief should be agreed as the basis for future work, since it is the record of agreement about the main aspects of the project:

- the expected outcomes;
- the resources that will be invested to arrive at those outcomes; and
- the time that it will take to achieve the outcomes.

The project brief should be a concise and clear document because it will be used throughout the project. For example, the monitoring arrangements will be derived from the agreement in the project brief. Monitoring might be carried out by a number of stakeholders in review meetings, when the agenda would be to assess whether progress met the scheduled objectives within time and budget estimates. If the initial feasibility plans and outline estimates have been fairly accurate, there may be no difficulty in keeping the project ‘on track’. However, often either the initial thinking was not thorough enough or conditions change during the progress of a project, so it is important to make arrangements in the initial agreement for changes to be made as the project progresses. Again, these decision-making arrangements should be part of the project brief so that there is no misunderstanding about the procedure that should be followed.

The project brief should be concise and clear. It is usual to use headings and subheadings and to list the main points. Remember that it provides a record in summary of the agreements on which the project is based and so represents the justification for expenditure of time and effort. A checklist of the headings is provided below.

- ✓ Project title
- ✓ Name of sponsor and main contact for project approval
- ✓ Locations – address of sponsor, project location, contact address
- ✓ Name of person managing the project and possibly their organisation if different from that of the project sponsor
- ✓ Date of agreement of project brief
- ✓ Date of project start and finish

- ✓ Background to the project and purpose with goals outlined
- ✓ Key objectives with quality and success criteria
- ✓ Details of how achievement of these will bring benefits to the business or sponsoring organisation
- ✓ Scope of the project and any specific boundaries
- ✓ Constraints
- ✓ Assumptions
- ✓ Timescale of the project
- ✓ Deliverables and target dates (milestones)
- ✓ Estimated costs
- ✓ Resourcing arrangements
- ✓ Reporting and monitoring arrangements
- ✓ Decision-making arrangements – level of authority and accountability held by manager of project and arrangements for any necessary renegotiation
- ✓ Communications arrangements
- ✓ Signature of sponsor with date, title and authority

UNIT SUMMARY

The project brief is a summary of previous discussions and research. If there is earlier documentation, the project brief can refer to these documents and summarise the key points rather than repeat everything. For example, there may have been previous documentation outlining the business case for the project so that commitment could be gained in earlier stages of the decision-making process. Similarly, there may be documentation that outlines the background to the project and the reasons for investing in the work. The key objectives should be given alongside the purpose and goals of the project, but detailed objectives will be produced during the planning stage of the project.

You may find it useful to remind yourself of the learning objectives outlined at the beginning of this section and to consider some of the main issues associated with them.

You should now be able *to identify the main features of a project*. A project is a one-off, non-repeated activity or set of tasks that achieves clearly stated objectives within a time limit. Most projects are goal-oriented with clear beginnings, middles and ends, have constraints that limit and define the process, and outcomes that can be measured in terms of performance against agreed indicators. Other features of a project include the purpose, goals, resources, constraints and quality requirements.

You should be able *to explain the importance of the key dimensions of budget, time and quality*. Much of the work in managing a project is in keeping these three dimensions in balance.

You should now be able *to identify the links between a project's scope and definition and a sponsor's strategic and operational objectives*.

You should be able *to agree the objectives of the project in sufficient detail to enable it to be planned effectively*. The importance of setting clear objectives was considered because these contribute to both the delivery and the evaluation at the conclusion of the project. Objectives can also be used to ensure that the outcomes of the project contribute as intended to the strategic and operational direction of the organisation.

You should also be able *to assess the feasibility of a project and to negotiate any necessary amendments with the sponsor to ensure that the goals can be achieved within the constraints of the project*.

All of these matters need to be considered before the detailed project brief or definition document can be drawn up. The project brief is an important document because it details the agreement that guides all the subsequent stages of a project. Lastly, you should now be able *to prepare a project brief or definition document* so that agreement can be obtained with the project sponsor. This document will provide a blueprint for the planning phase of the project.

REFERENCES

The following readings were referenced in Unit One.

Frame, J.D. (1987) Managing Projects in Organizations: How to Make the Best Use of Time, Techniques and People, San Francisco, Jossey Bass.

Buzan, T. (1982) Use Your Head, London, Ariel Books.

Unit Two - Planning a project

Introduction

This unit will help you to develop the skills required when planning a project. You will examine the various components of a project plan, and be introduced to a number of tools and techniques to aid planning.

This material is from our archive and is an adapted extract from Fundamentals of Senior Management (B713) which is no longer taught by The Open University. If you want to study formally with us, you may wish to explore other courses we offer in this subject area.

Unit Objectives

At the end of this unit you should be able to:

1. develop plans with relevant people to achieve the project's goals;
2. break work down into tasks and determine handover procedures;
3. identify links and dependencies, and schedule to achieve deliverables;
4. estimate and cost the human and physical resources required, and make plans to obtain the necessary resources;
5. allocate roles with clear lines of responsibility and accountability;
6. allocate tasks that are realistic and equitable and accommodate other workloads;
7. establish appropriate and agreed meeting schedules, as well as reporting, control and communication methods.

Readings

As you work through this unit you should read the following chapters from the PMBOK.

Project Management Institute. (2000). A Guide to the Project Management Body of Knowledge – Third Edition.

- Chapter 4 – Project Integration Management
- Chapter 5 – Project Scope Management
- Chapter 6 – Project Time Management

Assignments

Individual and reflective activities are embedded in the unit discussion. You should consider the activity and record your observations or comments in your course journal.

In addition your instructor will provide an assignment that you must submit to demonstrate comprehension of the content presented in this unit.

THE PLANNING PHASE

Once the project brief has been agreed by the project sponsors and approved by the main stakeholders, you can move into the detailed planning phase. The project plan can become a working tool that helps to keep the project team focused on the project's tasks and activities and points them towards completion. It enables managers to keep track of resources, time and progress towards achieving objectives.

All projects are different and the planning for each will be different. The difficulty with planning a unique activity is that there is no prototype from which to predict all the work that will need to be done, so the plan must evolve as work proceeds. Reviewing any similar projects that have been completed within the same organisation or in a similar setting to identify lessons that could be applied in a new project can be helpful.

Planning can be approached by asking a series of questions:

1. What actions are needed?
2. By when are these actions needed?
3. Who is going to do them?
4. What resources are required?
5. What other work is not going to be done?
6. How shall we know if it is working?

Discussing the issues to produce a joint plan with the team usually creates a sense of commitment that can be crucial to the project's success. Identifying who needs to be communicated with at the different stages can be useful here. (Below is a discussion and an example of a communications matrix to help you with this.)

This unit examines the various components of a project plan, and introduces a number of tools and techniques to aid planning.

THE COMMUNICATIONS MATRIX

A communications matrix is a way of noting who needs to be consulted and at what stage. It can be a formal chart or rough notes, but its purpose is to help minimise the problems that arise when people feel they have not been consulted. The communications matrix below shows an example of a communications matrix for putting a new building unit into use.

A communications matrix

Stages	Operations Director	Area Manager	Site Manager	Marketing Director	Equipment Suppliers	Fittings Suppliers
Initial plan	✓	✓	✓	✓	✓	✓
After first site meeting		✓	✓		✓	✓
Operation of unit agreed	✓	✓	✓		✓	✓
On-site work nearing end	✓	✓	✓	✓	✓	✓
Start operations	✓	✓	✓	✓		

Planning Process Overview

The planning process aims to demonstrate how the project outcomes will be achieved successfully within the required timescale, the agreed budget and the required quality. As each project is different, there are a number of ways of taking an overview of a project. Two of these are:

1. the project life-cycle, which is a useful way of understanding the different phases of a project as it progresses, and
2. the classic six-stage project management model, which helps us to identify the key stages and to integrate them through the processes of the project.

Although all projects are different, any project can be considered to have a life-cycle consisting of five phases (see the communications matrix). The phases are usually referred to collectively as the life-cycle of a project because they provide an overview of the life of the project from its beginning to its end.

Each phase is marked by a completion which is often one of the deliverables of the project:

Phase 1 – project definition – is completed by the production of the agreed project brief.

Phase 2 – planning – is completed as a project plan, although this remains flexible in many ways and is revised during the progress of the project.

Phase 3 – implementation – leads to an achievement of the project outcomes and to

Phase 4 – closure – and

Phase 5 – evaluation.

These phases can also be used as evaluation points, so that as each phase is completed a review is held to determine whether the project is succeeding in its overall performance and whether key deliverables are being achieved. There are options at these review stages to revise the plans and improve performance or even to discontinue the project.

As each project is different, so each life-cycle varies also. Real life is more chaotic than the simple model shown in the communications matrix would suggest, but it can be used to provide a structure that helps to reduce the chaos by putting some boundaries around different stages of the project.

Figure 2.1 - The life-cycle of a project

Although Figure 2 is linear, the phases of a project are often iterative in practice, with refining and modification taking place throughout the life of the project. Projects can often change as they progress. This is particularly so in service organisations such as health or educational services, where projects are usually defined by needs and problems rather than by tangible outputs such as factories or cars. Projects often take place in rapidly-changing contexts and the impact of the changing environment on the life-cycle of a project has to be managed. Flexibility is one of the keys to successful project management.

SIX-STAGE PROJECT MANAGEMENT MODEL

This model also consists of stages, but, unlike the sequential flow of the project life-cycle, the six-stage model assumes that some stages are carried out simultaneously. In particular, the model (Figure 2.2) assumes that communications will take place throughout the project. It also assumes that team building, leading and motivation will take place once the project has been defined and continue until it ends.

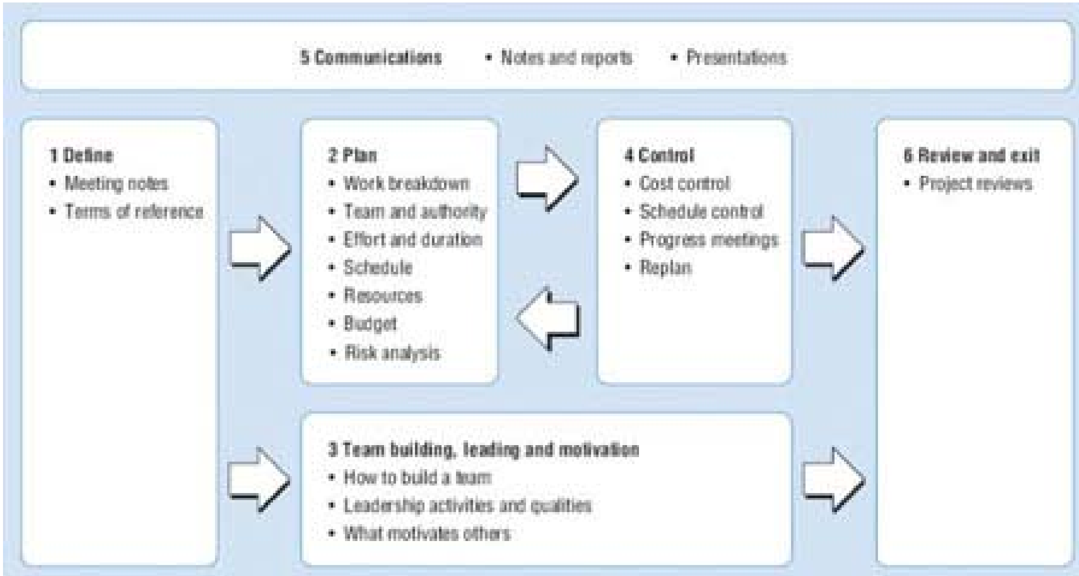


Figure 2.2 - Classic six-phase project management model

(Elbeik and Thomas, 1998, p. 14)

The six phases are:

Define: The project is discussed fully with all the stakeholders and the key objectives are identified. The costs and timescales are also established at this stage and there is often a feasibility study as well. This stage is complete when the project brief has been written and agreed.

Plan: An initial plan is developed. Planning is an ongoing activity because the plan is the basis for reviews and revision when necessary, depending on how the project progresses.

Team: The team members are usually involved in developing the plan and are often able to contribute specialist knowledge and expertise. The building of this team and its motivation and leadership also continue until the project is finished.

Communications: should take place continuously, both within the project team and between the project team and stakeholders in the project, including anyone who contributes to achievement of the outcomes. Some communications will be through formal reporting procedures but many will be informal.

Control: Implementation takes place during the control stage (stage 4 in the model). During this stage, the tasks and activities of the team will be monitored against the plan to assess the actual progress of the project against the planned progress. Control is essential to ensure that the objectives are met within the scheduled timescales, budgeted costs and quality. Regular reviews are usually held to enable the plan to be revised and for any difficulties that emerge to be resolved.

Review and Exit: The review is held to evaluate whether all the intended outcomes of the project have been met. It is also important because it enables information to be gathered about the processes used in carrying out the project from which lessons can be learned for the future. The exit from the project has to be managed to ensure that:

- any outstanding tasks are completed;
- all activities that were associated with the project are discontinued;
- all resources are accounted for, including any that remain at the end and have to be transferred or sold to someone else.

Many projects evolve through a series of loops of planning, acting, reviewing and re-planning. It is important to think of planning as a continuous activity rather than something that can be completed once and used without change for the duration of the project. Expect change and allow scope to change or modify the plan.

Where Do I Start?

Barriers to Planning

The planning stage of a project usually takes place before the activities start, but not always. In any case, planning always continues during the implementation of a project because there is always a need to change some aspects and to revise plans.

Case Study

Consider this story told by a senior line manager who had been asked to help Pat, a junior manager leading a small team on a project that was intended to produce a number of prototype packaging options. Pat was an experienced designer but had very little experience in managing projects and had run into problems in her new role as project manager. Time was short and the team had started to work enthusiastically, but something had gone wrong. They were two months into the project but were not producing anything – there was no sign of measurable progress.

‘Pat had a number of designs in draft form, as did other members of the team, but nothing had been completed. My task was to review the project and help Pat to get it back on track. I asked for the project plan – which was produced rather hesitantly. “I got stuck”, Pat explained. “I tried to follow the company guidelines, but I couldn't understand why we needed to go through all of those stages and hold lots of meetings – we all know how to design this sort of thing”.

‘However, the team had all had different ideas about how to approach the project and had been working separately, trying out a lot of different ideas that Pat had realised were not really addressing the requirements of the project. Some of the team thought that this was a good opportunity to develop some creative ideas and wanted to try out different ways of doing things. Pat felt that there was no time to waste in planning and filling in paperwork, just to conform with the company procedures, when the available time could be spent producing the prototypes. However, most of Pat's time was spent in trying to keep the team members working on practical ideas and in fending off inquiries about progress and so little progress had been made. The team felt as though they had been working very hard and were being unfairly criticised.

'We sorted the problem out in two days. I worked through the planning document with Pat, and explained that it was the process, not the paperwork, which was important. We involved the team in planning so that they understood what was needed from each of them. Developing a plan helped the team to bring their ideas together, to agree on who would do each task and to focus on the outcomes that were required. Once Pat had made a plan that the team could all believe in, this quickly got the project back under control, and it was completed successfully'.

Activity

1. List the barriers Pat encountered in planning the project described in the case study.
2. How could each of these barriers have been overcome earlier?

Record your responses in your course journal.

Discussion

We identified the barriers listed below and suggest ways in which they could have been overcome.

Pat had tried to make a plan but had found the instructions in the manual too complicated to follow. A manual of procedures was provided – but this can be bewildering for a person who does not understand why the procedures should be followed, particularly if the procedures seem to be about producing paperwork rather than carrying out the work of the project. Luckily, the first review date had been set early enough for the situation to be recovered.

None of the team seemed to appreciate why a plan was useful. If they had been involved in discussing the project and how they could complete it they would have realised that they needed to decide who would carry out each task and in what order these needed to be done. Involvement in planning usually also increases motivation to complete the plan.

All the team members were feeling pressure to make progress as time was short. However, without a plan it was not clear to Pat which tasks each team member needed to do or in what order these should be done. Activity without such a plan used up energy but was frustrating because little progress with the project was achieved. A plan with targets would have helped everyone to carry out tasks that contributed to progressing the project.

The problem was not noticed by senior managers until the first review date, which was rather late and could have been embarrassing for Pat. In this case it was not too late for corrective action to be taken to rescue the project. As this was Pat's first project it would have been helpful for a more experienced manager to offer coaching through all of the stages of managing the project.

Pat's work seems to have been unsupervised and it is possible that the culture of the organisation made it difficult to ask for support. However, if the plan had been agreed with the project sponsor, there would already have been some discussion about what should be reported and when reports should be made. This would have helped to focus on whether Pat needed support before the first review date.

THE PROJECT PLAN

Although there are many approaches to planning a project, there are seven elements that are normally included in a project plan:

- a work breakdown structure to show separate tasks and activities;
- the team structure and responsibilities of key people;
- an estimate of effort and duration for each task;
- a schedule to show the sequence and timing of activities;
- details of resources to be allocated to each task;
- details of the budget to be allocated to each cost identified; and
- contingency plans to deal with risks identified.

The ways in which planning can be approached usually fall in one of the following:

- bottom-up – identify all the small tasks that need to be done and then group them into larger, more manageable blocks of work;
- top-down – start by mapping out the major blocks of work that will need to be carried out and then break them down into their constituent tasks; or
- work backwards from the completion date if that is a given point in time, for example, 1 January, and then fill in the intermediate stages that will enable you to get there.

Each of these approaches has advantages and disadvantages and you will need to choose the one that best fits your circumstances. Ideally, you should then use one of the other approaches to check that nothing has been missed out. It is important to record your thinking and to keep any diagrams or charts produced as these will help to provide detail in the initial plan.

EXAMPLE 1: A PROJECT MANAGER'S VIEW

Some people think that all that is required in planning a project is to make a list of tasks, classify them under headings, call the project team together and ask them to do particular jobs – and then work towards the deadline. Based on my experience, this will not work. Depending on the complexity of the project, high risks and cross-functional activities, this could very quickly lead to fire-fighting rather than managing the project.

Project planning is about addressing the fundamental questions: what needs to happen and when? It is the process by which the activities in a project are defined, their logical sequence determined and the effort required in terms of time, cost and quality is estimated. A project plan has two main purposes:

- it underpins the 'business case' (business approval to proceed with the implementation of the project, including a full investment appraisal);
- it provides a route map defining and communicating how the project will move from start to finish.

For the project manager, the project plan is the most important tool for monitoring and control. Most project planning tools and techniques have been around for a long time and have proved themselves to be useful, enabling the project manager to deliver his projects to time, cost and quality. In discussions I have had with many project managers from across the industry I found that where project planning is not given the priority it deserves, project managers failed to deliver their projects in a timely manner.

When I first started to project manage refurbishment projects, my planning was based on what I thought was the best way to plan the work. Some of my projects were late because I underestimated the resource requirements. Some were over budget because I did not carry out an impact analysis when the scope of the project changed and sometimes my project deliverables did not comply with the specification because I did not define and monitor the deliverables adequately. Any project manager who does not produce a plan will soon run into unplanned activities, which incur unexpected costs.

There is also the opportunity to filter out projects with negative returns at this point thus eliminating unproductive projects and avoiding abortive work. However, you can only make these savings if you carry out cost-benefit analysis. Forcing a systematic project plan to be produced can eliminate some of the more frivolous projects. I use the project plan to check that the project is right for the business and meets the stated requirements of the project brief. A good plan can also show that the project manager took every possible precaution to ensure that the end result was positive.

The downside of planning is cost. It takes time to plan and if planning goes on for too long it can drain the project budget. On reflection I believe that project planning is a value-added activity.

Contingency plans indicate what to do if unplanned events occur. They can be as simple as formalising and recording the thought processes when you ask ‘what if …?’ and decide which options you would follow if the ‘what if?’ situation happened. The key points in contingency planning can be summarised as follows:

- Note where extra resources might be obtained in an emergency and be aware of the points in your plan where this might be required.
- Identify in advance those dates, which if missed, will seriously affect your plans, e.g. gaining financial approval from a committee that meets only once every six weeks.
- Know your own plan very well; probe for its weak points and identify those places where there is some ‘slack’ which only you know about …
- Keep all those involved (including yourself) well informed and up-to-date on progress so that problems can be addressed before they cause too much disruption.
- Recognise the key points in your plan where there are alternative courses of action and think through the possible scenarios for each one.
- Learn from experience – sometimes the unpredictable peaks and troughs in activity follow a pattern – it's just that we have yet to recognise it.

The following suggestions for dealing with contingencies were all made by practising managers:

- Break key tasks down to a greater level of detail to give better control.
- Be prepared to overlap phases and tasks in your plan in order to meet time-scales, but give the necessary extra commitment to communication and co-ordination this will require.
- Spend time at the start in order to pre-empt many of the problems.
- Learn from experience, e.g. develop a list of reliable contractors, consultants, etc.
- Try and leave some slack before and after things which you cannot directly control, to minimise the knock-on effect of any problems prior to, or during, such tasks.

Using a Logic Diagram

To use a bottom-up approach to planning, the activity schedule is best compiled by drawing on the collective experience and knowledge of the project team that is going to carry out the tasks. Grouping their ideas into related tasks will remove duplication and you can then start to identify activities which have to run in series and those that could run concurrently. Some tasks have to be sequential because they are dependent on one another: you can't put the roof on a house until you have walls strong enough to take the weight. Other tasks can run concurrently and the overall plan needs to make the most of these opportunities: the most successful project plans tend to be those that optimise concurrency because this reduces the project length and intensifies the use of valuable resources.

From the clusters of activities and tasks, you can begin to identify key stages by creating a logic diagram. This exercise can be approached by writing the key stages on cards or coloured self-adhesive notepads, so that you can move the notes around and then arrange them on a whiteboard or a large sheet of paper. Put cards labelled ‘start’ and ‘finish’ on the board first and then arrange the key stages between them in the appropriate sequence. Then draw arrows to link the stages in a logical sequence. The arrows indicate that each stage is dependent on another and sometimes more than one.

Example 2: Processes in Developing a Directory

A training agency that provided work placements for young people decided to develop a directory of services available for young adults in the community. The key stages identified were:

A Secure funds

B Negotiate with other agencies

C Form advisory group

D Establish data collection plan

E Collect data

F Write directory text

G Identify printer

H Agree print contract

I Print directory

J Agree distribution plan

K Organise distribution

L Distribute directory

Figure 2.3, showing the logic diagram for directory production, illustrate each of these stages. Each stage has at least one arrow entering it and one leaving: for example, organising distribution (K) is dependent on agreeing a distribution plan (J), and collecting the data (E) cannot happen until a data collection plan has been established (D). However, preparatory activities for distribution (J and K) and printing (G and H) can run concurrently. We have assumed that the advisory group will make decisions about the acceptability of the data collection and distribution plans and will agree the printing contract.

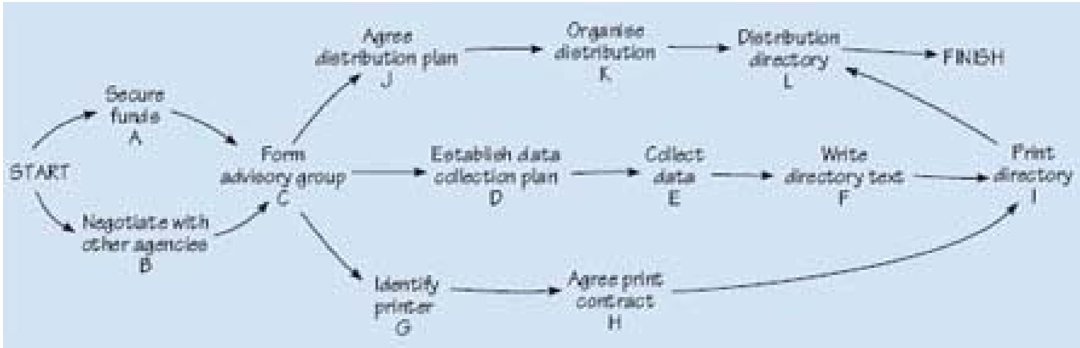


Figure 2.3 - Logic diagram for directory production

The following conventions might be helpful in drawing a logic diagram:

- time flows from ‘start’ on the left to ‘finish’ on the right, but there is no time-scale;
- each key stage must be described separately;
- the duration of key stages is not relevant yet;
- different coloured cards can be used for different kinds of activities;
- debate the position of each card in the diagram;
- show the dependency links with arrows;
- when your diagram is complete, try working backwards to check whether it will work;
- don't assign tasks to people yet; and
- keep a record of any decisions made and keep the diagram for future reference.

A comparison chart is not a formal technique as such, but is a way of setting out for oneself and others the relative merits of different approaches. The only ‘essentials’ in this are the three criteria of quality, cost and time-scale against which subjective judgements are made. In this case study various elements of each approach are considered against these three criteria, but both the format and the method could have been different.

The comparison chart below covers a project to develop an induction programme for new staff in a call centre. It shows how different ideas are put forward for how the induction might be undertaken. This shows that there might be different ways that a company could develop an induction programme, and there would be different implications in terms of timescales, the quality (in terms of how different approaches would seem to new employees) and finally in terms of different costs.

System element	Assess against PROJECT TIMESCALE	Assess for QUALITY of SYSTEM	Assess against PROJECT COST
Full on-screen & integration	Can't do in 2 months	Not vital to staff retention – may worsen it (impersonal)	In excess of £22K
Some on-screen training - basic skills	Off the shelf software ok & use in training room	shows an early interest in investing in them	Under £5000 total
Welcome by a director	ok	supports retention	project cost ok - but time commitment required
Set supervisor for induction	ok	supports retention	nominal cost to do
Buddy system first day	ok	supports retention	nominal cost to do
Meet colleagues	ok	necessary	nominal cost to do
Meet managers	ok	supports retention	nominal cost to do
View the video	ok	necessary	£2.50 per staff member
Spread over six weeks	ok	shows continuing interest	nominal cost to do

Figure 2.4 - An example of a comparison chart

Activity 2

Imagine that managers in your organisation are considering developing a directory to be given to new staff appointed, as part of the induction process. You expect that you will be asked to manage this project. You want to be well prepared for the meeting at which the potential project will be discussed. Draw up a list of the tasks involved in the project and organise them into key stages on a logic diagram. Record the list in your course journal.

Discussion

Your diagram probably looked similar to the one in Figure 4. You should have noted that you would need approval to use resources (A), which might include approval to involve others in the organisation and to interview people in each area of work (B). You might have decided to have some sort of steering committee (C) – this is often a good idea because it brings ideas from various perspectives to the project and it also helps to attract support for the project and its outcomes. You would have needed to plan for data collection (D and E) and someone would have to create the text (F) which would need to be printed or produced in an accessible electronic form (I) so that new people to the organisation could easily access the information. The production process would need steps G and H, as in the earlier logic diagram. You would also need to consider how the directory should be distributed to each area of work in the organisation (J, K and L). There are essentially three sequences of activities that must be completed in sequential order before the whole project can be completed.

An overview of the key activities and stages of the project provides the skeleton of your plan. You can then work out the details in each of the stages. Your understanding of the project will develop and change as you become more familiar with the issues raised in each stage of planning. Planning is a dynamic process and one of your main roles in managing a project is to keep the balance between:

- the need to have a plan to ensure that the project outcomes can be achieved within time, budget and quality requirements; and
- the need to respond to change in the setting surrounding the project and in the understanding of all of the people involved in the project.

It is helpful to keep a project brief as the starting point in each stage of planning, to ensure that the purpose of the project is not forgotten in the practicalities of planning. As each part of the plan develops, use the project brief as a basis for checking that the key outcomes are still the focus of activity and that the balance of budget, schedule and quality are being maintained.

A checklist for drafting a project brief appears below.

- ✓ Project title
- ✓ Name of sponsor and main contact for project approval
- ✓ Locations – address of sponsor, project location, contact address
- ✓ Name of person managing the project and possibly their organisation if different from that of the project sponsor
- ✓ Date of agreement of project brief
- ✓ Date of project start and finish
- ✓ Background to the project and purpose with goals outlined
- ✓ Key objectives with quality and success criteria
- ✓ Details of how achievement of these will bring benefits to the business or sponsoring organisation
- ✓ Scope of the project and any specific boundaries

- ✓ Constraints
- ✓ Assumptions
- ✓ Timescale of the project
- ✓ Deliverables and target dates (milestones)
- ✓ Estimated costs
- ✓ Resourcing arrangements
- ✓ Reporting and monitoring arrangements
- ✓ Decision-making arrangements – level of authority and accountability held by manager of project and arrangements for any necessary renegotiation
- ✓ Communications arrangements
- ✓ Signature of sponsor with date, title and authority

IDENTIFYING DELIVERABLES

The project brief will identify the goals of the project and may express some of these as key objectives. At an early stage of planning you will need to identify all of the project objectives and the deliverables that are implied or required from each objective.

Each objective will identify a clear outcome. The outcome is the deliverable. In some cases, the outcome will be some sort of change achieved and in other cases it will be the production of something new. In either case, the project deliverables should be identified so that it will be easy to demonstrate that they have been achieved.

Example 3

The first objective in a project that aimed to change the service focus of an organisation was to ensure that all of the key managers were trained to carry out the change. The deliverable might have been evidence that 80 key managers had been trained in managing change. This evidence might have taken the form of records showing that the training had taken place. If the training was really the objective, then this would be sufficient.

However, in this case, the training was intended as preparation for action. It might have been closer to the purpose of this project if the deliverable for this objective had been framed in terms of each of the 80 trained managers being able to provide evidence of having successfully managed change.

Even this deliverable would not, in itself, support the project manager's personal intention to raise the profile of the human resources department within the organisation. To achieve this, s/he might have decided to collect the evidence that these 80 managers had successfully managed change and then used this evidence to produce a report as the deliverable. This would show how the training provided by the HR department had succeeded in developing these managers so that they were able to contribute effectively to organisational change. It is important to ensure that the outcomes of the project are the ones intended and this can be focused with specific objectives and identified deliverables.

Outputs can be defined when there is a distinctly identifiable product but outcomes are more holistic and can imply a changed state that might not be evident for some time. In some situations it may be difficult to demonstrate outcomes, for example, where cause and effect are uncertain. It is still important in such settings to identify goals and to define them in a way that will enable an appraisal of the extent to which the aims of the project have been achieved. 'How shall we know if we have been successful?' and identify the indicators that will help in making that judgement.

Deliverables:

- need to be handed over to someone authorised to receive them;
- at the handover, there should be a formal acknowledgement that the specification has been fully met and each item has been 'signed off' as fully acceptable;
- the deliverable will be something for which users will need some training to use or something that needs to be implemented in some way. In these cases, once the deliverable has been identified, it is important to agree who will be responsible for the ongoing training or implementation, so that there are no misunderstandings about the boundary of the project.

Mapping Tasks and Activities

One of the most difficult aspects of planning a project is estimating how long it will take to complete each key stage. An estimate might be based on:

- the size of the tasks and the effort required to complete them;
- the number of days that are not available for working on the project; and
- historical data from other projects, including the experience of colleagues.

Where a project has a fixed end-date (for example, an event where a Member of Parliament will declare a new building open) there is a natural tendency to try to compress the schedule to fit all the key stages into the time available. All too often it becomes clear later that the schedule is impossible to meet. It is better to be realistic at the outset and be clear about what can be delivered and what cannot. Productive time may only amount to 3.5 to 4 days each week and time needs to be built in for meetings, communication, co-ordination and the normal line-management arrangements. You will also need to allow some extra time for contingencies such as unexpected interruptions and eventualities that cannot be predicted.

SMART Objectives

When the objectives are identified, trying to ensure that each objective is SMART (Specific, Measurable, Achievable, Realistic and Time Bound) is good practice or at least to have considered the extent to which these conditions could be met. As in all planning, this process is continuous and as new information becomes available and as the project progresses, changes will need to be made to aspects of the objectives and to the sequences of tasks that contribute to achievement of the completed project.

Work Breakdown Structure

A work breakdown structure enables:

- the work of a project to be divided into 'packages';
- these 'packages' can be further subdivided into 'elements'; and
- these elements are then divided into individual 'tasks'.

This structure provides a basis for estimating the time and effort required. In a large project, the work breakdown structure might allow packages of work to be allocated to teams or team members so that they could identify and schedule the subtasks. The deliverables can be identified in the work breakdown structure so that all the activities can be seen to contribute towards achieving the deliverables. Involving the project team in constructing the work breakdown structure can be one of the initial team-building tasks and can provide the first opportunity to develop an understanding of the whole project.

Figure 2.5 shows part of the work breakdown structure for the data-collection package in the directory project. Note that a work breakdown structure does not usually show the necessary sequence of work, other than through grouping under the key stages.

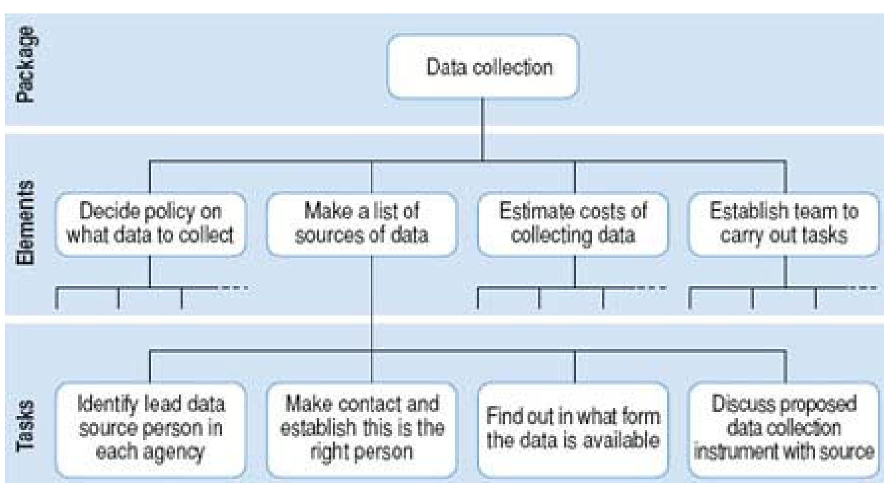


Figure 2.5 - Work breakdown structure for data collection package

As the work breakdown is considered, groups of activities might be identified that could be considered as mini projects in themselves. These can offer useful staff development opportunities for team leaders in appropriate areas of work.

Although the work breakdown structure should be kept simple by identifying substantive tasks rather than all of the subtasks, it is important to consider the team or staffing structure and key responsibilities at this stage.

Team Structure and Responsibilities

Teams have great difficulty in working effectively if they are too large to work together conveniently. Six to eight people is often considered to be about right. Where the project needs more staff to deliver all of the outcomes, the structure could consist of a number of teams, each with a team leader. In some projects there may not be a team but, instead, a number of individuals or groups making a specialist contribution at an appropriate time and a method for co-ordinating these inputs becomes vital.

At this stage, the roles will be identified in terms of the expertise or skills that are needed to complete each of the main tasks. Where members need to be recruited to the team, this process will help to identify the criteria for selection. If some of the project team have already been identified, or if the team leaders have been appointed, there is an opportunity to include them in determining the team structure. The key responsibilities can also be allocated.

The project manager will usually retain the responsibility for ensuring that the decisions reflected in the authority chart are carried out. Once the levels of authority have been decided it is not difficult to decide how the approval will be sought and recorded, how those who should be informed will be told and how consultation will be arranged. All of these activities involve subtasks that can be allocated to individual team members.

Scheduling

Scheduling is about deciding the time that each task will take to do and the sequence in which the tasks will be carried out. There are a number of approaches to estimating the time and effort (and, therefore, cost) required to complete a project. Some estimates may be based on past experience but, because each project is essentially unique, this alone may not be sufficient. A clearer picture can be obtained by measuring each task in terms of the content of the work, the effort required to carry it out, and its duration. This should enable you to estimate resource requirements in order to begin scheduling, taking account of the current workloads of the members of the project team and their capacity to carry out the work.

Usually there are some things that must be completed before others can be carried out. This is called dependency. When one task is dependent on another, the sequence needs to be planned, but there is also the possibility of delay if the dependent task cannot be started until the previous task is completed. The Gantt chart and critical path analyis are two useful techniques that will help you to plan for each of these issues.

The Gantt chart enables you to establish the sequence of tasks and subtasks and to estimate a timescale for each task. It will allow you to block out periods of time throughout the duration of the project to ensure that it is completed on time. The Gantt chart is not so useful in demonstrating the dependencies and the impact of delay if any of the foundation tasks are not completed as scheduled. A technique called Critical Path Analysis (CPA) is frequently used to plan the implications of dependencies. We shall look at each in turn.

GANTT CHART

Gantt charts show all the key stages of a project and their duration as a bar chart, with the time-scale across the top. The key stages are placed on the bar chart in sequence, starting in the top left-hand corner and ending in the bottom right-hand corner (Figure 2.6 – Gantt chart for directory production). A Gantt chart can be drawn quickly and easily and is often the first tool a project manager uses to provide a rough estimate of the time that it will take to complete the key tasks. Sometimes it is useful to start with the target deadline for completion of the whole project, because it is soon apparent if the timescale is too short or unnecessarily long. The detailed Gantt chart is usually constructed after the main objectives have been determined.

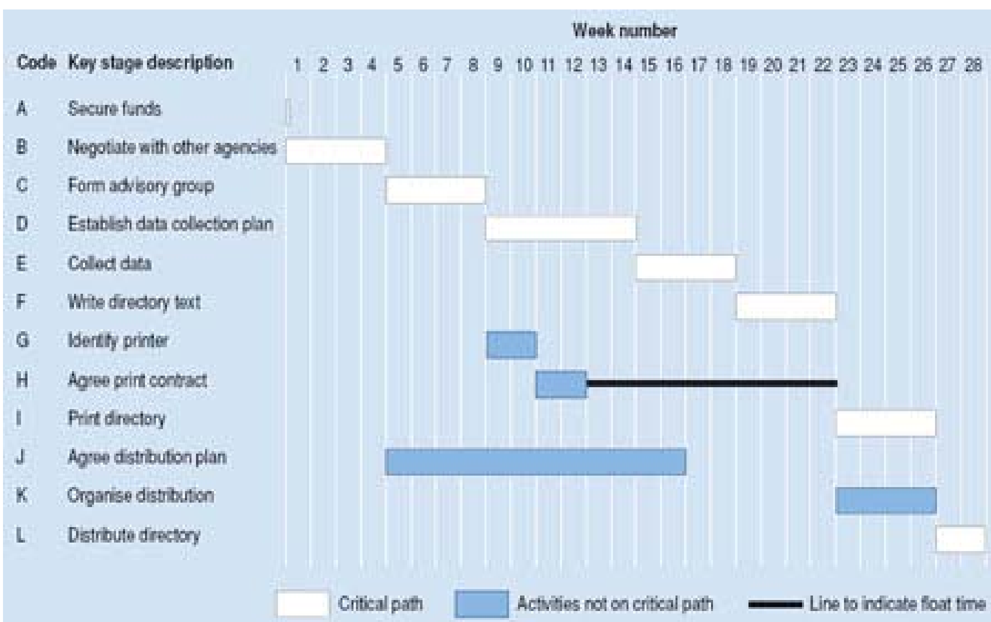


Figure 2.6 - Gantt chart for directory production

In this example, key stage K ('organise distribution') starts at week 23 so that its end-point coincides with key stage L ('distribute directory'). However, K could begin as early as week 17, as soon as key stage J is completed. Key stage K is therefore said to have slack. Key stage H ('agree print contract'), has been placed to end at week 12. However, it could end as late as week 22, because key stage I (‘print directory’), does not begin until week 23. Key stage H is therefore said to have float. Float time can be indicated on the chart by adding a line ahead of the bar to the latest possible end-point. Slack and float show you where there is flexibility in the schedule, and this can be useful when you need to gain time once the project is up and running.

You can add other information to a Gantt chart, for example:

- milestones – if you have special checkpoints, you can show them by using a symbol such as a diamond or triangle;
- project meetings could be indicated by another symbol such as a circle; and
- reviews of progress could be indicated by a square.

For a complex project you may decide to produce a separate Gantt chart for each of the key stages. If you do this shortly before each key stage begins, you will be able to take any last-minute eventualities into account. These charts provide a useful tool for monitoring and control as the project progresses.

Activity 3

Imagine that managers in your organisation are considering developing a directory to be given to new staff appointed, as part of the induction process. You expect that you will be asked to manage this project. You want to be well prepared for the meeting at which the potential project will be discussed.

Draw up a list of the tasks involved in the project and organise them into key stages on a logic diagram. Now turn this into a Gantt chart to show how long it will take to produce the directory. Use your own judgement to estimate how long each stage would take.

Record your Gantt Chart results in your course journal.

Discussion

Gantt charts are relatively easy to draw by hand, but this doesn't offer the same level of flexibility during monitoring that you would get from a software package. Various programmes are available to assist project managers in scheduling and control. Once the data have been entered, a programme helps you to work on ‘what if’ scenarios, showing what might happen if a key stage is delayed or speeded up. This is more difficult if you are working manually.

IDENTIFYING THE CRITICAL PATH

The critical path describes the sequence of tasks that would enable the project to be completed in the shortest possible time. It is based on the idea that some tasks must be completed before others can begin. A critical path diagram is a useful tool for scheduling the dependencies and controlling a project. In order to identify the critical path the length of time that each task will take must be calculated.

Example 4

We will use the logic diagram for production of the directory of services for carers as a starting point, because it is usual to complete a logic diagram before making a critical path analysis. The length of time in weeks for each key stage is estimated:

	Key stage	**Estimated time in weeks**
A	Secure funds	0
B	Negotiate with other agencies	4
C	Form advisory group	4
D	Establish data collection plan	6
E	Collect data	4
F	Write directory text	4
G	Identify printer	2
H	Agree print contract	2
I	Print directory	4
J	Agree distribution plan	12
K	Organise distribution	4
	Distribute directory	2

We have given the key stage ‘secure funds’ an estimated time of zero weeks because the project cannot start without the availability of some funding, although estimates would provide detail at a later stage. The stages can now be lined up to produce a diagram (see Figure 2.7: Critical path for directory production) that shows that there are three paths from start to finish and that the lines making up each path have a minimum duration.

If we now trace each of the possible paths to the ‘Finish’ point, taking dependencies into account, the route that has the longest duration is known as the critical path. This is the minimum time in which it is going to be possible to complete the project.

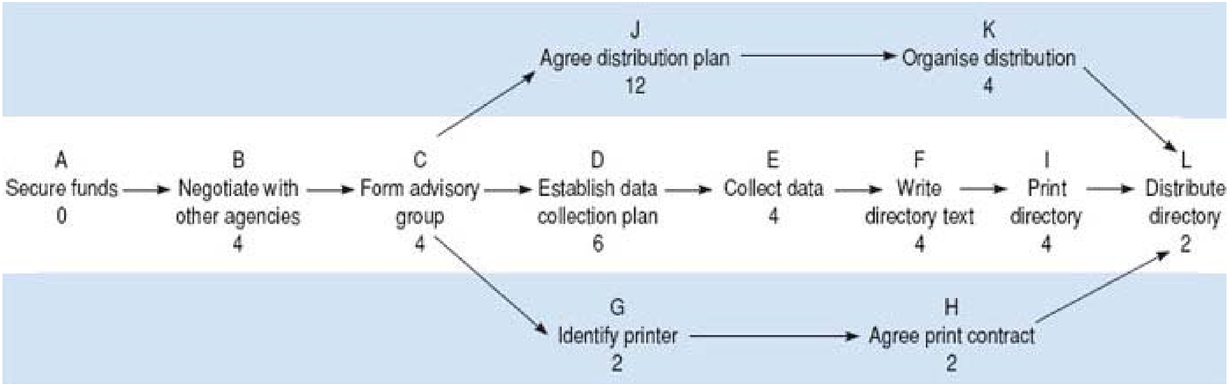


Figure 2.7 - Critical path for directory production

In this example the critical path is A–B–C–D–E–F–I–L, and the earliest completion date for the project is the sum of the estimated times for all the stages on the critical path – 28 weeks – from the point of securing the funding. All the key stages on the critical path must be completed on time if the project is to be finished on schedule.

If the projected total time is a long way off the project sponsor's expectations, you will need to renegotiate the time-scale. Mapping the critical path helps to identify the activities that need to be monitored most closely.

We have used a relatively straightforward example to illustrate this technique, but a more complex project may have several lines of key stages operating at first in parallel but later converging, so that several critical activities may have to be completed before another can start.

A key event list is a statement of identifiable key points along the path of the project together with their scheduled dates. Such a listing may be useful as a concise guide for senior managers. A Key Events list should always be derived from a more detailed plan, preferably critical path based, to ensure that the dates stated are achievable. (Note: the terminology of 'milestones' is sometimes used for, and/or confused with, key events.)

Key Event	Timing
Project brief agreed	project start
Design new system	completed by 2nd July
Project review (when most of initial work is done)	19th July
Handover	21st August

Activity 4

Look at Figure 2.8 which illustrates the Gantt chart for a project to convert a room into a computer suite. From this chart:

1. Identify the earliest possible time for completion of the project.
2. Identify the activities that comprise the critical path.
3. could the project be completed in less time?

Record your response in your course journal.

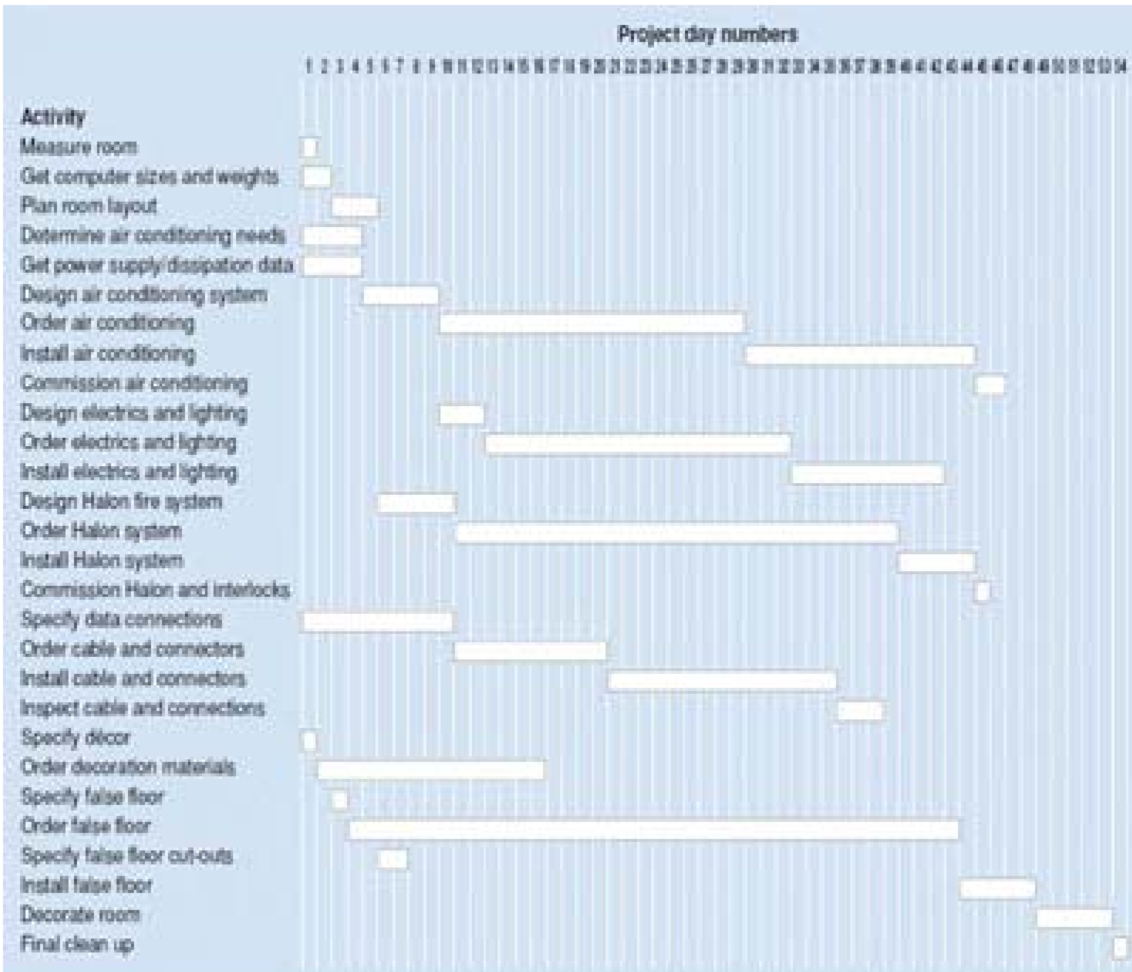


Figure 2.8 - Chart to show the main tasks needed to convert a room into a computer suite (Lock, 1993, p. 537)

Discussion

The extreme right-hand side of the Gantt chart shows the completion of the final task and so the completion of the project on the 54th day. If you looked back along the chart from that final point you might have identified the critical path as the tasks involving the new floor. The décor had to be specified before floor materials could be ordered and installed and this had to be done before the final decoration of the room.

You might have considered that the project could be speeded up if the ordering time for the flooring could have been reduced – but there were a number of other activities taking place during that waiting time. Some of these other activities also have dependencies, so it is not a simple matter to attempt to reduce the time-scale of a project by speeding up only one activity.

Now compare the Gantt chart in Figure 2.8 – the chart to show the main tasks needed to convert a room into a computer suite with the critical path network diagram for the same project in Figure 2.9 – the critical path network diagram of the project to convert a room into a computer suite. Note that the numbers written on the arrows represent the duration of an activity and the flow is from left to right. The numbers in circles are the sequence of tasks in each activity and each task on a line has to be completed before the next one begins. The dotted lines show other constraints. For example, the air conditioning cannot be commissioned (task 23) until the air conditioning system has been designed, ordered and installed, but it also needs electricity (task 21) to work. Similarly, the electricity must be working before the fire prevention system can be commissioned (task 22).

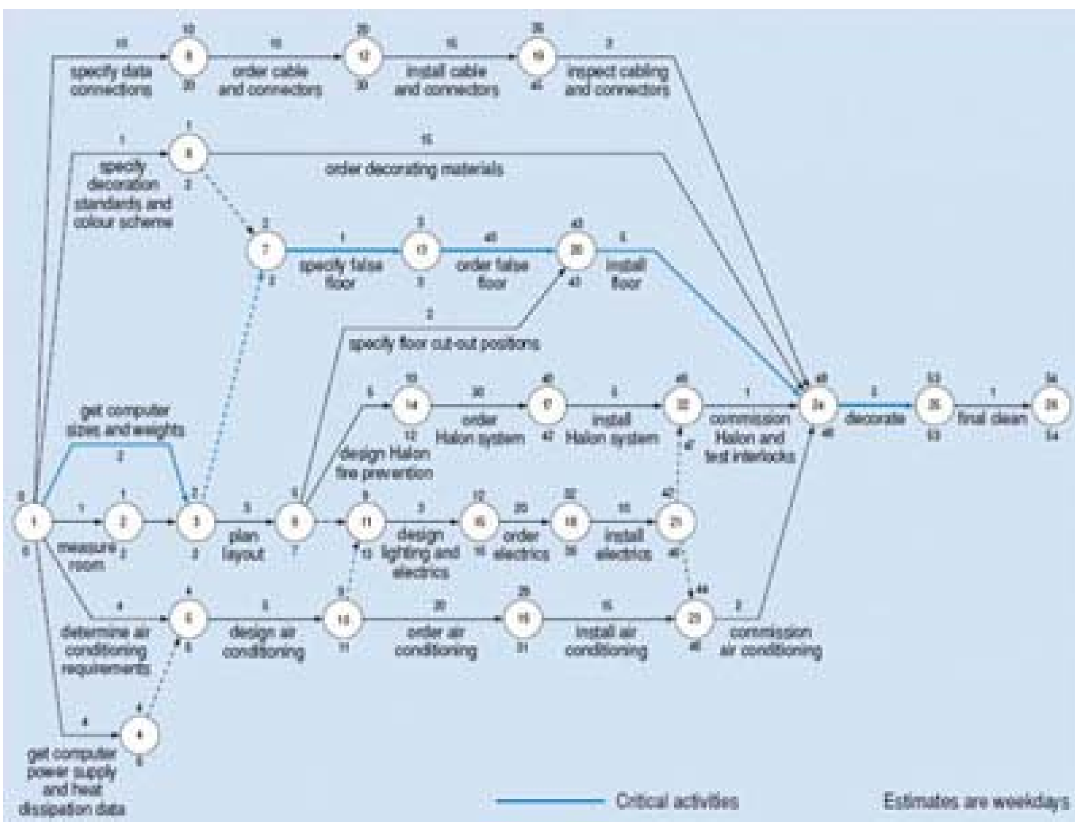


Figure 2.9 - Critical path network diagram of the project depicted in Figure 2.8

(Lock, 1993, p. 538)

The critical path is the path of longest duration through the network and it is the sequence of tasks involving the new floor. However, there are seven other sequences of tasks that must be completed before task 24, which must be completed before the decoration begins. If there are delays in any of these other activities there may be implications for the critical path and the duration of the whole project.

Although it is essential to identify dependencies, it is very helpful to establish that these are unavoidable. If one activity is usually completed before another it is not necessarily essential to complete it first and it might be possible to overlap the activities. It is an advantage to reduce the number of dependencies because that will increase the flexibility available in implementing the project.

Activity 5

If a task on the critical path is expected to finish five days early, will the project complete five days early? Discuss.

Make a note of your thoughts in your Course Journal.

Discussion

The project would not necessarily finish five days early because there might be another task that was not critical because it would have finished two days before this unexpectedly early one. In this case, the other task now becomes the critical one and defines the expected finishing time which would now be three days early.

ESTIMATING COSTS, REVENUES AND INTANGIBLE BENEFITS

Planning a project includes preparation of financial and related projections. Frequently, these will be used to:

- weigh up the economic feasibility of the project;
- obtain approval from a higher authority in the organisation for the project to proceed;
- set boundaries of delegation or empowerment in a formal budget;
- provide the basis for accounting for project revenues and costs;
- provide a means of diagnostic and, possibly, interactive control of the project.

At the project preparation and planning stages, your focus is on understanding and shaping the future. Among important questions you should be addressing are those along the lines of:

1. What resources will we require and what will they cost the organisation?

2. What products will be produced, in what quantity and of what quality?
3. Depending on the type of organisation, either:
4. For what prices can our for-profit organisation sell these products and how much revenue will they generate?
5. How much must our non-profit organisation charge users for these products if these charges are to cover resource costs?

In producing these products or offering these services, how much economic, political and/or social value will our governmental organisation confer on their direct beneficiaries, and on other citizens and other taxpayers generally; and by doing so, what private costs will our governmental organisation impose on citizens and other taxpayers?

What cost savings will accrue to our organisation from these products or what fines/penalties will our organisation avoid by producing these products?

Planning a project is an iterative process, involving having ideas, trying them out and formulating them into something coherent enough to call an outline proposal for a project. All these activities result in an opportunity cost, mainly of staff time (spent on thinking, corridor discussions, meetings, etc.) that is not, therefore, being devoted to other valuable activities. As soon as most of these costs are incurred, however, they are sunk, irrecoverable and, therefore, irrelevant to analysis of the future, at least in economic terms.

One trap to watch out for is to be sucked further and further into a project on the political grounds that the organisation has invested (or sunk) so much money and effort in it so far that it can't afford to pull out now.

Projected benefits and costs need to be calculated at an early stage in the life of the project, working as far ahead as possible, preferably until the project would be completed. There must be a case that shows that the benefits exceed the costs by a large enough margin to warrant spending more planning time on the project, instead of working on alternative organisational activities.

Estimates are the best guess that you can make given the information available at the time of estimating. It provides a way of testing the extent to which the desired aims are likely to be achieved by the organisation within the financial resources it can make available internally or raise externally. It is only when you have a detailed breakdown of work and a schedule of timing that you can be more specific about the revenues and costs involved.

Few projects are genuinely unique. Many are look-alikes and a prime source of estimates is similar activities, past or present, elsewhere in the organisation. Data, published and otherwise, should be available from other organisations, especially those that that aren't direct competitors. Often you just have to telephone or email the right person as you can make use of networking to establish useful contacts.

It helps to distinguish between development and operational costs, and to analyse these further into stages or components of the project, based on Gantt and/or critical path charts. These components will each require effort and resources, and these inputs can be analysed and translated into monetary values simply by applying unit prices or rates. Revenue and intangible benefit estimates can be approached in a similar way, based on other experiences and components of your market. Be aware, however, of monetary amounts being assigned to intangible benefits because these may give rise to an impression of objectivity that is not deserved.

Revenues

Projects vary in how they are eventually financed. They can be purely commercial projects from which the products are sold at market prices, and so eventually the revenues they generate are expected to cover the costs and provide an operating profit. In the meantime, development costs and working capital have to be financed from share and loan capital raised by the organisation, the cost of which will be met from the profit the project makes. At the other extreme there are projects, in both for-profit and non-profit organisations, that are regarded as a cost item, for example, a staff training programme that is to be financed from within an organisation. There are projects in non-profit organisations in the private and public sectors, funded by an external grant, patron or sponsor, for example, a community project financed by a grant from the National Lottery.

Estimating market revenue from sales of outputs for a speculative project isn't easy. The following considerations apply to purely commercial projects run by for-profit organisations and to projects that depend on user charges to cover costs and break even. Estimates can be gleaned from obtaining knowledge about previous similar projects in other similar locations, with the emphasis on the word similar and by carrying out marketing research. Understanding the basis of demand (e.g. climate, demographics, socio-economic status of customers, level of competition, cultural practices and religious beliefs) helps to understand potential demand.

It is different if you sell the output before the project really gets going; for example, if you are building a hotel under contract to a hotel company. You will, however, still need to win the tender, negotiate an agreement with the contracting organisation over stage payments for work done at various junctures in the project schedule, and raise capital finance to cover the lag between capital and operating outlays and the receipt of revenues. A similar way of reducing the market and financial risk of a speculative commercial project (for example, operating a hotel in a proposed new holiday area) is to obtain a pre-implementation contract with a large purchaser (perhaps a package holiday company) for part of the future output. No doubt this would be at a concessionary price, but the contract would provide partial insurance against a flop and would make capital finance easier to obtain and less costly.

Finally, in estimating revenues, it is usual to err on the low side: just as it is usual to err on the high side in estimating costs. That way there are in-built safeguards if things go slightly awry. Be careful, however, that you don't become too conservative with your estimates because this would kill off too many projects.

Staff Costs

The staff time and staff-related costs need to be calculated. These include salaries, taxes, holidays, overtime, training, travel and subsistence, and accommodation for the number of staff for the time they will be needed. This raises all sorts of questions about the basis on which staff are costed and the relationship of the project budgeting system to other budgets and costing systems in the organisation. The basic assumptions underlying allocation of resources need careful consideration early in a project, particularly if there is likely to be substantial investment of staff time in the start up stages of operations.

One issue is that of how to treat the use of existing staff and other resources that are to be allocated to the project on a temporary basis. It's common to overlook these opportunity costs, or at least those when the project is a small part of any individual's time because leaving out these costs will make the project look more attractive.

However, if the opportunity cost of existing staff time is not calculated in some way, there is a danger of overlooking this cost when these staff would normally be working on the core work of the organisation. This analysis would show when it would be less costly for an organisation to hire staff specifically to work on a project, rather than to redeploy existing staff. For example, situations occur when the skill requirements would mean training existing staff before they could carry out the project tasks – probably less efficiently and with more mistakes, due to lack of experience – than if experienced outsiders were used. This, of course, raises another issue, because part of the purpose of the project may be to train staff to be more skilled, in which case the cost of training is a necessary project cost.

Staff costs can be estimated by analysing the project into tasks that staff must complete, working out staff requirements in terms of the quantity and expertise, and finding out rates of pay, taxes and other costs. Organisations that regularly work on projects often have standard approaches to calculating and costing staff time. Projects of a construction or engineering nature (for example, roads, houses, office buildings or ships) may be unique, but most of their components are not, being replications of previous work. The uniqueness derives from the mixture of components and how they are to be combined. Projects of a human service nature (e.g. schools, hospitals) often use formulae to develop operations costs. These formulae include ratios of staff to clients (for example, the number of teachers to students) and of one staff group to another (clinical staff to administrative staff).

Equipment Costs

In many projects, staff costs are the most expensive element, but there are other costs to consider, such as materials and equipment. Indeed, in some projects (for example, some military and space projects) these other costs are at least as significant as staff costs. For organisational accounting purposes, a distinction will be required between capital expenditure, or the acquisition of fixed assets, and revenue expenditure, or the incurring of expenses. The work breakdown plan and the schedule give information about the nature of each task and this can be used to estimate the costs related to use of materials and equipment.

If the organisation already has whatever equipment is needed, the only costs relating to the project may be those associated with redeploying the equipment for temporary use on the project, including any loss of value through wear and tear. However, if equipment is normally in use elsewhere there will be an opportunity cost incurred in taking it away from its normal use.

Example 5

The consultancy unit of an organisation based in Kent needed an additional fax machine for two months to enable them to take registrations for residential development centres. They borrowed the fax machine from the training unit, where it was used for routine but non-urgent communications. However, the training unit found that many of its usual communications were badly disrupted during this period because people had become used to using the fax. The greatest problem was that many of the trainees in placements in India, Australia and New Zealand, had great difficulty in telephoning the office because of the time zone differences. The loss of the fax machine, even for a short period, proved to be expensive in the time spent compensating for its absence.

Equipment costs are not limited to acquisition costs. Most equipment needs regular maintenance, may break down and need repairing, it will require fuel or energy, and it will need accommodation or garaging and security. All these costs of keeping and operating equipment should be considered. And, someone will probably be needed to work the equipment. This might entail costs relating to skilled use of equipment and supervision and training for staff unfamiliar with the equipment.

MATERIALS COSTS

There will be many categories of materials, supplies and consumables used in a project. Once again, the materials that are in constant use and easily and ‘freely’ available in an organisation might be overlooked in costing the project. For example, it is easy to assume that stationary will be available in much the same way as it is for day-to-day work. However, a project is a bounded activity, and if you are to understand the full cost of achieving the outcomes, you will need to know how much the whole range of activity costs. For example, a project can easily and inconspicuously increase the organisation's operating costs of postage and telephone or of paper and printing.

If the project involves constructing something from materials there will be a cost related to raw materials. Transport and storage will also need to be included. Materials that are fragile or that have a limited life will need special consideration. For example, if the purpose of the project is to stage an event at which there will be food served, the timing and storage considerations will be very different from projects that involve use of materials that will last indefinitely.

Who Should Estimate?

The person managing the project is not necessarily the best one to prepare the estimates, although they should be closely involved, both as a source of information and because they need a clear understanding of what the estimates mean and what the estimators assume about outputs, inputs and the transformation process. If there are others who have more experience or more knowledge about some of the areas of work, these people may be the best ones to make estimates for the project or parts of it. Ask each person to work independently and then meet to compare estimates and to discuss how to arrive at realistic figures for revenues and costs. Similarly, it is often helpful to involve other perspectives to ensure that you have not forgotten revenues and costs that arise as part of carrying out areas of work unfamiliar to you.

If there is someone associated with the project with experience of estimating it could be very valuable to involve them. Taking advice about any risks relating to the revenues and costs can be helpful; for example, if you will need to buy materials, the prices of raw materials might vary over time or according to the quantity of the order. In a large project, the services of an experienced buyer might contribute cost savings.

Planning for Quality

Having considered estimating for time and for costs, the third dimension of projects – quality needs to be considered. The need to achieve a particular level of quality may mean that more time must be spent completing certain tasks or that more resources must be made available for a particular purpose. Once the time and cost estimates have been made, review them to ensure that this estimate will allow an outcome of the right quality.

Many organisations have corporate quality assurance systems in place, which have to be applied to any project for which they are responsible. However, difficulties may arise when several quality assurance systems are in operation in a multi-agency project. In such a case, it would be possible to include the development of an appropriate quality assurance framework as part of the project itself.

Part of the documentation for a project may include a ‘quality manual’ which describes the aims of the project, how each part of the project system is organised functionally, procedural documentation that states how each task is to be completed, and any relevant technical specifications. The quality assurance process needs to be monitored and communicated to stakeholders, with regular reviews built into the reporting cycle.

DRAWING UP THE IMPLEMENTATION PLAN

Once the detailed planning and risk assessments have been carried out, you are ready to assemble your implementation plan. A typical implementation plan, including diagrams and charts where appropriate, will contain:

- a description of the background to the project;
- its goals and objectives in terms of intended outputs and/or outcomes;
- the resource implications (budget, personnel – including any training requirements – and facilities);
- the project schedule;
- how action will be taken and by whom;
- a description of how the project will be managed;
- the reporting and review arrangements;
- the evaluation plan – how success will be measured; and
- the risks and contingency plans.

The project plan should also include an executive summary, providing the basic information and main goals and objectives in a few paragraphs.

UNIT SUMMARY

This unit has focused on planning a project. At this stage you may find it useful to recap on the learning objectives introduced at the beginning of the unit and to think about some of the issues associated with them.

You should now be able to develop plans with relevant people to achieve the project's goals. This will involve identifying and finding ways of including the appropriate people in the project.

You should be able to break work down into tasks and determine handover procedures so that the work is manageable and progress can be tracked.

You should be able to identify links and dependencies and schedule to achieve deliverables. We introduced techniques that will help you to schedule and to identify dependencies so that you can plan using the concept of the critical path.

Estimating is part of planning and you should be able to estimate and cost the human and physical resources required, and make plans to obtain the necessary resources.

You should be able to allocate roles with clear lines of responsibility and accountability and to allocate tasks that are realistic and equitable and accommodate other work loads. It is important that the team feel that their tasks are achievable and that they know to whom they are accountable.

You should be able to plan for effective communications within the project activities by establishing appropriate and agreed meeting schedules and reporting control and communication methods

REFERENCES

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UNIT THREE - MANAGING PROJECTS THROUGH PEOPLE

INTRODUCTION

The aim of Managing Projects through People is to demonstrate the importance of managing people for the success of a project, to identify groups and individuals whose appropriate involvement in a project is important for its success, and to consider ways in which their contribution might be maximised.

UNIT OBJECTIVES

At the end of this unit you should be able to:

1. identify why managing people is an essential part of project management;
2. establish which people and groups of people are important for the success of a project and why;
3. explain what issues are at stake in managing them;
4. evaluate how particular groups of people involved in a project might best be handled;
5. recognise which skills are most important for managing people in projects; and
6. know how to apply these skills where appropriate.

READINGS

As you work through this unit you should read the following chapters from the PMBOK.

Project Management Institute. (2000). A Guide to the Project Management Body of Knowledge – Third Edition.

- Chapter 9 – Human Resource Management.

ASSIGNMENTS

Individual and reflective activities are embedded in the unit discussion. You should consider the activity and record your observations or comments in your course journal.

In addition your instructor will provide an assignment that you must submit to demonstrate comprehension of the content presented in this unit.

WHY PEOPLE MANAGEMENT MATTERS

The importance of budget, time and quality to the success of projects means that they are often managed as technical systems rather than behavioural systems. Yet mismanagement of the 'people' aspects of projects is as likely to contribute to their failure as neglect of the 'hard' dimensions of project management. This is because the successful implementation of any kind of project requires the effective deployment of human as well as material resources. Indeed, without people, no project could exist in the first place.

People may be important to the success of a project as:

- project managers in charge of a project;
- members of a project team responsible for implementing a project;
- internal or external customers for whom the project is being conducted – 'end users';
- company 'sponsors' of a project, for example, senior management;
- stakeholders who may be affected by a project's outcome; and
- external suppliers of goods and services on which the project's implementation depends.

In order to meet 'hard' criteria for a project's success, the contributions and responses to the project made by these individuals or groups are crucial. Managing these contributions and responses, as well as the relationships between parties with an interest in the project needs to be planned. For this reason, it is often argued that managing people is the most important aspect of project management.

The significance of stakeholders is well recognised and there are many ways of analysing the impact of their influence and needs. Either of two simple approaches will probably suffice in order that the project manager can recognise the implications of stakeholder influence:

(a) draw a 'star chart' showing the stakeholders around the project:

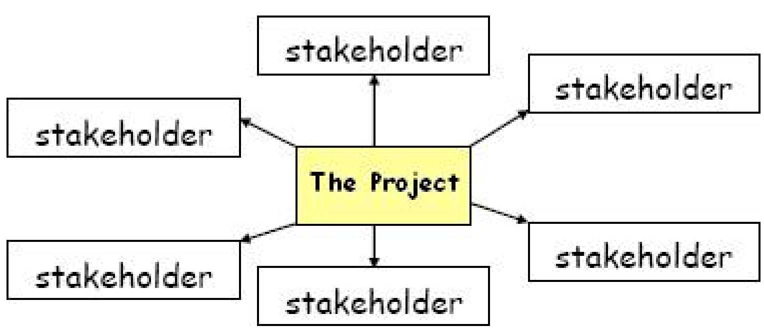

Figure 3.1: Stakeholder analysis, power and influence – a star chart

The arrows can be two-way as well as one-way and the expectations can be marked on the arrows, which can be of different thickness. Amend the chart as necessary in order to depict clearly the influences on the particular project.

or

(b) draw a matrix and locate stakeholders in it.

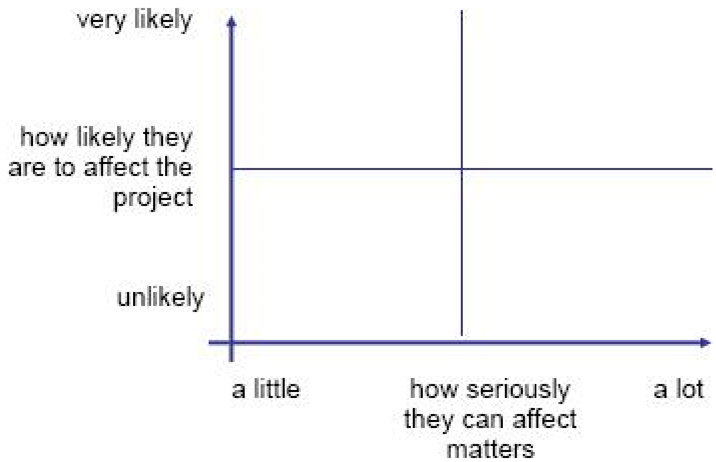

Figure 3.2 - Stakeholder analysis, power and influence – a matrix

Managing people in a particular project will depend on its scope, the phase of the project, and the nature of the project. The impact of human resources on a project are likely to be greatest when it is large scale and loosely structured, involving large numbers of people, whose roles and relationships with regard to the project may not always be easy to determine or manage. The chance of success in projects is increased by paying more attention to issues such as

- relationship management;
- communication;
- influencing; and
- politics.

This means that individuals involved in managing projects will have to use a wide range of people-management roles and skills in order to achieve a satisfactory outcome. These will include:

- leadership;
- motivation;
- negotiation; and
- facilitation of team working.

ROLE OF THE PROJECT MANAGER

WHAT MAKES A GOOD PROJECT MANAGER?

The performance of the project manager is crucial to the success of any project, since he or she is the person responsible for ensuring that it reaches a successful conclusion. Although criteria for project success are likely to be expressed in terms of meeting deadlines, budgets and standards, much of the project manager's work will involve achieving these benchmarks through people involved in the project. While the role of the project manager has traditionally been powerful in professions such as construction and IT, project managers have become increasingly important in a range of businesses, as illustrated by the following extract from an article that appeared in *The Guardian*.

Holding Hands on the Brands

Project manager as a job description isn't going to have people flocking to you at parties. If you add in 'design' you may hold your audience for a split second longer, but it's not guaranteed. Yet in design business, the people who manage the daily crises and maintain the flow of constantly changing information between client and creative team are worth their weight in gold. 'The key to good project management in design is the ability to understand the intricacies of running a business,' says Professor Simon Majaro, co-director of the Centre for Creativity at Cranfield School of Management. 'You need to be able to deal with people in an organisation and to talk to them in their own language.'

'It's exciting to work within a creative environment,' admits Julie Oxberry, client director at 20/20, the design consultancy responsible for the new Sainsbury's identity. 'My job is to make sure that everything is "on brand", dealing with day-to-day client management and making sure that both the client and creative team are happy.' Project managers in design consultancies are often known as 'suits', but Julie Oxberry sees this as just a way to differentiate them from the designers. While 'project manager' has a nuts and boltsy resonance, Ms Oxberry thinks that 'relationship manager' might be a more accurate job title.

After all, diplomacy is key to good project management – particularly when creative feathers are easily ruffled. 'You need a lot of patience and a good sense of humour,' says Ruth Somerfield, project manager at design consultancy Lewis Moberly. 'My background in public relations has helped,' she admits. 'You also have to have an appreciation of the process of design. Management and communication skills are incredibly important but you need an eye for design.'

At Major Players, a recruitment firm that places project managers in the top 100 design companies, there is a specific set of skills desirable for managing design projects. 'The people who do well are articulate, they can stand up and present,' explains Jacqueline Rose, who looks at potential candidates. 'In design the whole issue is about the personality of a brand. The design project manager has a more robust role than they would have if they worked in an advertising agency. They very often draw up guidelines for other agencies as the designers are the guardian of the brand.'

(Source: based on Deeble, S. (1999), 'Holding hands on the brands', The Guardian, 17th July 1999. Copyright Sandra Deeble. With permission of the author)

As the extract describes, key skills for project managers are **technical**, i.e. knowledge of the business sector in which the project is being conducted (in this case, the design industry) and **interpersonal** (i.e. communicating to and managing effectively the different parties with a stake in the project.)

In a study of UK project managers' experiences, Boddy and Buchanan (1992) identified six key activities of the project managers who took part in their research.

Shaping goals – The project managers are responsible for setting or receiving overall objectives and directions, interpreting them, reacting to changes in them, and clarifying any problems which arise with regard to these objectives.

Obtaining resources – The project managers identify the resources they needed for their project, negotiate for their release, retain them and manage their effective use in the context of the project.

Building roles and structures – The project managers clarified their own roles, those of members of their project team, and those of other relevant functions and individuals.

Establishing good communications – The project managers linked together the diverse groups and individuals contributing to the project, in order to obtain their support and commitment.

Seeing the whole picture – The project managers took a helicopter view of the project as a whole, managing time and other resources, anticipating reactions from stakeholders, identifying links with other relevant activities, and spotting unexpected events.

Moving things forward – The project managers took action and risks to keep the project going, especially through difficult phases.

Boddy and Buchanan (1992) concluded that these activities are largely concerned with influencing others in order to get them to work in a particular way. A project manager may have very little formal authority, yet a key part of their job is to **influence** others to do certain things. To be successful, they must draw on a wide range of methods, especially political and interpersonal skills.

In order to carry out the activities which their job requires, a project manager must perform a number of roles, including:

1. **Leadership** – A project manager needs to be able to communicate a vision of the project outcome and gain support for it from stakeholders within the project team and outside it.
2. **Motivation** – A project manager needs to be able to motivate individuals involved in the project, in particular the project team, to make the contribution required of them for the project to be completed successfully. Using expectancy theory, members of the project team will work well when they expect their efforts to produce good performance, they expect rewards for good performance, and they value these rewards. Rewards may be more difficult to achieve, since performance and rewards are often controlled by line managers who may not be directly involved in the project process or outcome.
3. **Team building** – The project team needs to have the right mix of skills to complete the project task and the project manager needs to manage this. He or she must also facilitate their productive co-operation. This is likely to involve the use of techniques to maximise participation and empowerment. The ability to handle conflict will be an important part of the project manager's team-building role.
4. **Communication** – communicating well about different aspects of the project to various individuals or groups with an interest in its outcome is important. The project manager must enable the flow of relevant information about the project to interested parties at various stages of a project. He or she must win support for the project and secure resources for it. He or she must keep the organisation and any external clients committed to the project. Communicating relevant information to and from the project team helps to maintain their motivation.

Make sure that workable communication 'links' are created with those who will be involved in a project, for example, end users and the project team.

Ensure that all interested parties understand a project's goals and objectives as clearly as possible. This avoids potential misunderstandings which could impede communication. It is important that this is achieved at a project's outset, before there is time for any alternative accounts of the project's purpose to emerge.

Select the right medium for communicating important messages, e.g. face-to-face presentations, meetings or written documents. For example, it is not sufficient to assume that people understand and support a project's objectives, simply because they have been sent an email about it.

Ensure that a sufficient amount of relevant and informative project documentation is produced. Producing too much information about a project's progress is as bad as producing too little. If people feel overloaded with detail, they are less likely to absorb any particularly important pieces of information.

Hold timely and well-run meetings. Again, a proliferation of meetings or meetings that are too long and badly run are likely to inhibit, rather than facilitate, proper discussion about a project, since people will be deterred from attending.

Actively resolve negative conflict between project participants, instead of simply allowing it to disperse. It is easy to ignore conflict between groups with different interests, but impossible to ignore its consequences, which are likely to have a profound impact on a project's outcome.

Activity 3.1: Thinking about effective communication

Think about a recent conversation that you have had. This can be a work or personal conversation. Review the barriers to good communication and consider which of these might have hindered communication and what steps you might have taken to improve the communication?

In your Course Journal, use a table to present your answers with the headings 'What hindered communication?' and 'What might have improved communication'.

Discussion

Here is an example of how your table might look

What hindered communication?	What might have improved communication?
Working in different buildings	Having more frequent meetings
Limited IT facilities	Being able to share documents more easily

Effective Communication

Whilst effective communication is an essential skill for the project manager, most people tend to be over-optimistic about the accuracy and efficacy of the communication process. Achieving understanding can be difficult, especially in the atmosphere of change and uncertainty generated by a major project. Verma (1996) identifies the following barriers to good communication.

'Noise' – Anything that distorts the message being transmitted, such as other conflicting messages, can interfere with its meaning. There should be a shared understanding of a project's actual objectives, in order to clarify what people think it *should* achieve. This avoids the persistence of 'alternative' accounts of its purpose and unmet expectations once it is complete.

Selective and biased perceptions – People tend to listen to what they want to listen to and read what they want to read into a message. Again, ensuring clarity of a project's objectives and the achievement of project milestones once they are reached will help to counteract 'subversive' accounts of its progress (or lack of it!).

Conflict – Conflict can act as a wall between individuals or groups, preventing communication between them. The most obvious situation for this to occur in a project is between different functional groups (who may have different agendas regarding the outcome and development of the project).

Language and tone – The intended meaning of a message can easily be missed by someone whose background is different from the sender's. This is likely to be an issue in a project when those responsible for it have specialist skills not shared by the project's clients or end users.

Lack of feedback – Receiving and listening to feedback, as well as imparting messages, is essential for effective communication. It is as important to seek feedback from interested parties throughout a project's lifetime, as it is to secure clarity about its objectives at the outset. Without appropriate feedback, it is easy for a project to drift off course.

A project manager can facilitate effective communication.

IDENTIFYING AND INVOLVING STAKEHOLDERS

For every project, there will be a range of individuals or groups who have an interest in the different stages of the project. It could be the end users of an IT system, the line managers who will be expected to lead a restructuring initiative throughout the organisation, or the marketing department which will promote a new product. The support of these stakeholders is essential, if the project is to succeed. Therefore a key responsibility of the project manager will be to identify these stakeholders at an early stage of the project, anticipate their responses to it, and gain and maintain their support. Their involvement can be important to the project's success or failure, as illustrated in the following example.

Lives freed by water on tap

The British charity WaterAid co-operates with communities and non-governmental organisations to install and maintain simple water systems in developing countries. It began working with Ethiopian organisations in 1991 to devise water-provision schemes for areas of the country worst affected by shortages. Employing a philosophy of community empowerment and relying almost entirely on the skills and knowledge of local staff, WaterAid has provided funds for seven projects serving some 285,000 people.

Completed in 1994, the Hitosa project is one of WaterAid's more ambitious supply schemes, which it has carried out in conjunction with its local partner WaterAction. The project, involving 75 miles of piping carrying water by gravity from a mountain spring, cost only £10 per beneficiary, but has dramatically improved the lives of those whom it serves. Until the project was completed, Ayelu Nagash spent five hours every day walking to and from the nearest water source. 'I had to make do with whatever I could carry, which was about 25 litres. Now I have an unlimited supply five minutes' walk from my home,' she said.

'Our developmental philosophy is based on community empowerment,' said Girma Mengistu, director of WaterAction. 'We ask each household to contribute £5 toward the project and try to involve the community from the start.' The communities also provide labour for trench digging and pipe laying.

Eighty per cent of the funding for the Hitosa project came from WaterAid, three per cent from the Ethiopian government and the remainder from the communities that benefit from it. Once the projects are completed, a nominal charge is levied for the water, the proceeds of which are sufficient to maintain the scheme. 'Community involvement is the key to the success of our projects,' said Mengistu.

(Source: based on Gough, D. (1998), 'Lives freed by tap water', *The Guardian*, 30th December 1998. Copyright © Guardian News and Media Ltd)

It may not be immediately obvious who are the project stakeholders and what are their interests. For example, for non-governmental organisations (NGOs) like WaterAid, a key group of stakeholders is those people who benefit from the aid that the NGO provides. As the extract suggests, involving the beneficiaries in a project means empowering them so that they can be involved in determining the outcome of the project (for example, where a well or a water pump might most usefully be sited), so that they can get the most benefit from it.

To identify the stakeholders in a project and how their interests might best be managed, a stakeholder analysis is carried out. This will enable the project manager to anticipate potential points of resistance, as well as would-be allies and champions for the project. The first step in this process is to identify the project stakeholders. This can be done by preparing a stakeholder map – a diagram showing the main stakeholders likely to need attention. Next, their interests must be identified. Finally, the project manager together with other members of project team should generate ideas on how best to manage the stakeholders, given their interests.

Activity 3.2: Preparing a stakeholder map

Write the name of a project you have been involved with or which has taken place where you work in the centre of the paper. Then around the project name write the names of individuals or groups whom you believe have or had a stake in this project. Put the most important nearest the centre.

Now, in your Course Journal, for each stakeholder individual and group, identify the following:

1. What are their priorities, goals and interests?
2. What specific behaviour is expected of them in relation to the project?
3. What are their likely reactions to the project?
4. How can their support be gained?

Discussion

The kinds of individual and group you are likely to have included in your stakeholder map are members of the project team, senior managers, colleagues in various parts of your organisation who have an interest in the project, staff in your organisation who are affected by its outcome and people in other organisations who contributed to or benefited from the project. You will probably have noted that many of their interests apparently conflict, e.g. in terms of what they want from the project, which complicates the business of securing their support. However, by identifying them on a stakeholder map, you can begin to formulate a strategy to achieve this – the stakeholder map provides a basis for managing everyone with an interest in a project. You will need to consider what relationships exist between the different stakeholders, since they may have to work together during the project or be likely to react to or influence each other's experience of the project. It is also important to realise that not all potential stakeholders are obvious at the beginning of the project; some may emerge as the project develops and they realise that their interests could be affected by its outcome. Stakeholder analysis therefore should also take into consideration the attitudes and actions of stakeholders at different phases of the project.

The Project Team

Some projects, especially large-scale ones, will rely on a team, not just an individual, for their successful implementation. Unlike permanent work teams, a project team's objective is the achievement of a finite and specific task – the project. Its performance, especially its ability to perform effectively as a group, is therefore critical to a project's outcome. However, it may prove relatively difficult for a project team to work well together at the outset, since its members are often drawn from different functions within the organisation, perhaps even from different organisations, and may include external representatives such as external consultants or representatives of the project's customers. This means that the group members' interests regarding the project are highly likely to differ at the outset.

Extract 1: Catalogue of Errors at the British Library

Inspectors checking the British Library project found more than 230,000 defects between 1992 and 1996. As costs increased and delays lengthened, the Government even considered abandoning the project, the National Audit Office disclosed. But with more than

£450 million already committed, the Treasury agreed to a further £46 million to allow the building, next to St Pancras Station in London, to be completed.

A National Audit Office report uncovered a saga of building errors, management failures and blurred responsibilities. Until 1992, when the Heritage Department was created, responsibility for managing the project rested with the Office of Arts and Libraries. Since 1989, the British Library has questioned how the specifications of the building have been implemented in design. The Audit Office said that concern was expressed in 1991 that the Library and the Department were behaving 'as opposing parties rather than as partners'. To this day, they have been unable to agree shared objectives largely because of the conflict between the Government's desires to reduce costs and the Library's pursuit of the highest quality.

There had been 'confusion, conflict and difficulty in determining liability' when things went wrong. Quality checks were 'weak and failed to detect major technical problems until they were hard or costly to rectify' and there was insufficient control over the budget on the first phase of the building.

The bureaucratic structure behind the British Library project is Byzantine. For the first phase until the end of 1992, there were three titular heads: the Property Services Agency, the Treasury and the National Heritage Department. At the strategic level, there was a project steering committee and a project director appointed by the Government. On the site, a construction professional was project manager. Below him was a superintending officer who administered the contract. Under him was a construction manager, appointed by the builders, Laing.

(Source: based on The Daily Telegraph, 1996)

The example shows that, in the case of the construction of the British Library, failure to establish a coherent and effective project team with clearly defined tasks meant that no shared set of objectives was ever agreed by the parties involved. Thus no one group took responsibility for driving through the project. A direct consequence of this was that control over the project's progress was inadequate and technical problems proliferated.

For project teams to perform well, certain circumstances need to exist:

- members must feel personally involved in the project;
- members believe that they are serving the interests of those whom they represent who will benefit from the project outcome;
- a readiness to accept new ideas; and
- a certain autonomy for project teams to determine their own goals and their approaches to achieving them if they are to work effectively. Not surprisingly, the ability of the project manager to expedite effective project team working is crucial.

While the diversity of a project team may sometimes detract from its effective working, especially at the beginning of a project, it is nevertheless essential that a range of skills and knowledge is represented within it if it is to perform efficiently. Boddy and Buchanan (1992) identify three aspects of a project for which a well-balanced project team will require appropriate skills: process, content and control.

To deal with the content agenda, a team may require:

- expertise in the skills which the project concerns, e.g. IT skills;
- awareness of the organisation's policies and strategies;
- operating knowledge of how the part of the organisation which will benefit from the project works.
- To deal with the process agenda, a team may require:
- skills in team-building to help the members of the group work together;
- awareness that the process by which things are done are as important as what is done;
- willingness and ability to give time and commitment to the team.
- To deal with the **control** agenda, a team may require:
- a helicopter view to set the project within a broader picture;
- deadline skills to ensure that the project is progressing satisfactorily; and
- administration skills to ensure that appropriate and timely project documentation is maintained.

ASSESSING THE PROJECT TEAM

Those involved in a project may have skills that fulfil more than one aspect of the project agenda. This is likely to be particularly important in small-scale projects, where management of the content, process and control agendas are just as important to the project's success, but where fewer people are involved.

Activity 3.3: Assessing the strengths and weaknesses of a project team

Consider a project team you have worked on or with. This could be a team at work or a team out of work, for example, one which organised an event at a local school or church.

Note down the answers to the following questions in your Course Journal.

Make a list of the skills and expertise of the team members.

Compare it with the ideal project team skills described above.

1. Which roles and expertise were well represented and which were missing?
2. How did this affect the way in which the team worked?

Discussion

You may have found that your team had a surplus of content skills and not sufficient process and control skills. This is because project teams are often put together with a view to achieving the technical aspects of a project rather than anything else. This is a potentially dangerous approach to take to project team building, since people management and administration skills are also essential for a project's success. The project manager's skills may be crucial in this regard, since it is primarily their responsibility to get the project team to work together, whilst being mindful of both the wider organisational agenda and the project deadline.

Managing a project team is complicated by the fact that it is not a constant process, since the behaviour and tasks of the project team reflect the lifecycle of the project. It is argued that project teams go through four identifiable stages of development, at each of which it may be appropriate for the project manager to take particular actions to maximise their performance.

1. **Undeveloped team** – This is the stage at which people have been assembled to form a project team but have not yet given much thought about how they might work together. At this stage the project manager needs to be able to get team members to share any concerns and problems that they might have regarding the project. They can begin to develop team cohesion by explicitly identifying the strengths (and weaknesses) of the team.

2. **Experimenting team** – The main characteristic of this second stage is that the team makes a conscious effort to review the way in which it works in order to improve performance. The team begins to face problems more openly and consider options more widely. More listening takes place and a broader range of contributions is considered. At this stage the project manager needs to encourage team member openness and debate about ways of working, by inviting feedback on performance and process issues.

3. **Consolidating team** – In the third stage the team creates clearer and more methodical ways of working. Attention is given to matters such as clarifying the purpose of tasks and activities, deciding what will need to be done and how, and reviewing progress. At this stage the project manager needs to get the team to agree procedures and methods of working, and to facilitate performance reviews as a means of identifying ways of improving team methods.

4. **Mature team** – In the fourth stage the team becomes confident and outward looking, able and willing to take into consideration the wider aspects and implications of what it is doing. At this stage, while the project manager can in general allow the team the autonomy necessary to complete its allotted tasks, they

must support any requirements to link up with other teams and units and they must encourage external evaluation of the team's performance.

Team-management tasks remain constant throughout the lifetime of the project. These include continually ensuring that the project team has a shared understanding of the project's remit and objectives, effectively dealing with conflict and disagreement whenever it arises, and generating excitement and celebrating success, where appropriate, in order to maximise team motivation.

Dealing with Senior Management

Senior management have a crucial sponsoring role to play both during the planning and the implementation of projects, in terms of establishing their legitimacy, making project resources available and endorsing project progress. For this reason, those involved in a project must be proactive about securing and maintaining senior management support throughout its lifetime. They need to be explicit with senior management that the project is both attractive and feasible. However, during a project, senior management sometimes behave in way likely to influence unduly or even undermine its outcome. They may attempt to:

- Allow the client to dictate management of the project because of commercial pressure;
- Sabotage the project because it is not fulfilling what they believe to be its aims or even because they wish to limit the influence of the project manager;
- Micromanage the project – setting its agenda, handling its daily activities and usurping the project manager's power.
- There are a number of actions the project manager can make in order to improve the project team's relationship with senior management and to deflect unnecessary and unhelpful involvement in the project.
- Senior management may start to become too involved and the project manager needs to re-establish authority to avert a micromanagement situation
- Potential difficulties should be communicated to senior management clearly and honestly. If senior management lose touch with reality, they will begin to make unrealistic unfounded statements and promises about the project's progress and outcome.

Using Political Skills

In particular, a project manager needs to employ good political skills in order to maintain the support of senior management, without allowing them to undermine or take over the project. However, this can raise questions about the ethics of their behaviour. Read the following account that was given by a member of an external consulting team working on a project for a local authority in Scotland. The project's objective was to revamp the structure of the council which had operated in much the same style for the past 20 years. A new chief executive had recently been appointed; the leader of the consulting team was a long-standing personal friend of the chief executive.

Example 1: What the chief executive wants

'We were invited to a meeting with the chief executive to launch the project, agree our liaison mechanisms, find a room to work in, and so on. At the meeting the chief executive produced a seven-page document. This set out what he wanted to see in our final report. Some of this had been in the original brief for the assignment, set out in general terms, and here it was again with some specific recommendations and markers for action concerning parts of the organisation structure and named individuals in specific posts, which were not expected to survive the review. We didn't have as much flexibility as we thought.

'The project rolled out over that year and our recommendations got firmed up as we collected more information. Basically, this was an autocratically managed, hierarchical, rigid, bureaucratic organisation, with lots of time and money wasted on unnecessary procedures and rule following, and with poor staff morale. So our recommendations were going to be about cutting hierarchy, empowering people, changing the management style, making procedures more flexible, getting decisions taken more quickly, and the chief executive was behind all this.

'The main client was a subcommittee, to which we reported about every quarter. But not before the chief executive had, at his request, seen an advance copy of the report, commented on it and suggested changes. This put us in an awkward position. We knew his thinking, and so when other managers asked us about that, we had to fudge our answers. This also meant that we had to build our ideas into our reports, finding some rationale for supporting them, which was important because, if questions came up in committee, we would have to explain and defend the point.

> *'If we hadn't handled the chief executive in this sort of way, the whole project could have been at risk, and the time and the contributions of a lot of other staff would have been wasted.'*

Source: based on Buchanan and Badham, 1999

Activity 3.4

Do you think the consultants' political behaviour was acceptable?

List the points for and against behaving this way in your Course Journal.

Discussion

The points you listed in favour of the consultants' behaviour may have included that it ensured that the project was a success, that the chief executive was best placed to know what needed to be done, that the consultants got to do what they wanted to do anyway, and that their actions maximised the staff's contributions to the project.

The points you listed against the consultants' behaviour may have included that the chief executive may have not been well placed to know what action was needed, that he may have been prejudiced against certain individuals in the organisation, that the consultants' behaviour was dishonest, that it may not have achieved the best possible outcome for the organisation, and that it compromised certain individuals.

Political Behaviour

Buchanan and Badham (1999) suggest that political behaviour can be usefully evaluated against four criteria to help determine whether it is acceptable or whether it is not:

Four criteria to determine whether political behaviour is acceptable:

1. Is the behaviour ethically acceptable?
2. Does the initiator of the behaviour have a reasonable warrant for carrying it out?
3. Can a plausible account be constructed to justify the behaviour?
4. Is the initiator's reputation left intact?

In the case quoted in Example 1, the benefits of the change project for the organisation as a whole seem to suggest that, on balance, the consultants' behaviour might be justified. It can certainly be argued that they had a reasonable warrant for behaving in this way, given the overwhelming necessity to bring about change, that a plausible account could be constructed to justify their behaviour in that it was necessary for the project to succeed, and that their reputation probably remained intact, given their close relationship with the chief executive. Whether you find their behaviour ethically acceptable is a matter of personal preference! Whatever your opinion is about this, it is difficult to imagine that a project of this kind could be managed successfully without some recourse to political behaviour.

Political Skills

A project manager will encounter politics – the struggle to acquire and maintain power – on a daily basis, as he or she competes to secure resources and support for their project. This is inevitable, given the probable diversity of backgrounds and expectations of those with an interest in the project. Political skills will be necessary to make deals and resolve conflicts with stakeholders, over whom project managers may have little formal authority. Managing the following aspects needs to be addressed:

- **The political environment** – The project manager keeps aware of perceptions about performance on the project, the reputation of project stakeholders, expectations of the project manager's role and key organisational values.
- **Power structures in an organisation** – While an organisation's structure indicates the formal distribution of power in an organisation, it may conceal the true locus of

power. Project managers need to ascertain who has informal status and power in an organisation, since their support may be vital.

- **Maintaining visibility** – A project manager needs to maintain contact with the significant stakeholders on a project in order to demonstrate its significance to the organisation, especially to senior management. This can include having an influential senior sponsor which can be very helpful in this regard and drawing attention to project milestones and achievements.
- **Managing the perceptions of interested parties** – Not only must a project be visible, but it must be seen to fulfil the perceptions that its stakeholders have been led to expect. This is especially true of the behaviour of the project manager and the project team, who must both be seen publicly to be performing the roles expected of them.
- **Giving the impression of success** – A project manager should always try to give the impression of success, even if he or she believes the project to be close to failure. Constantly seeking help from management will give the impression that you are not in control. Showing signs of weakness lays both the project manager and the project open to attack from those who do not support it.

BUILDING RELATIONSHIPS

SHARING THE PROJECT

As we have seen, the execution of a project may depend on the involvement and co-operation of several departments or functions within an organisation. If this is the case, then, for it to succeed, they must be prepared to share ownership of the project, be willing to work together to help the project achieve its objectives and be happy to release adequate resources when appropriate. The project manager and their team therefore have to create and maintain good relationships with all interested parties across the organisation in order to get their support for the project. This may not be a straightforward issue, since each function will have its own priorities and interests; they may be indifferent or even downright hostile to the project. Not surprisingly, the larger the project task, the more difficult the job of maintaining good relationships with all interested parties, especially if the project involves more than one site. This is complicated by the fact that it may not be obvious at the outset who has an interest in a project or even what constitutes the organisation, as the following example illustrates.

Example 2

An RSPCA project to build Britain's biggest animal welfare complex using public donations of £1.5 million is in turmoil because of a feud involving volunteers.

The Charity Commission has intervened in a dispute between the society's senior officials and volunteers from Glamorgan West and Swansea over construction of a showpiece centre for 40 dogs and 20 cats. Volunteers, who raised £1 million in over 35 years, say the complex, to be built on 75 acres at Penllergaer, near Swansea, is too big and could be built for 30 per cent less. They accuse national officials of intimidating volunteers to get lavish plans agreed – accusations that are strongly denied.

However, after complaints from the national society, the commission has suspended the local volunteers and handed control of the project to Peter Wright, the society's national operations manager. RSPCA officials are planning to subject the volunteers to a disciplinary inquiry.

The branch, however, an independent charity in its own right, is preparing to sue the national RSPCA for negligence, alleging that it gave poor advice and failed to deliver grants on time. Joe Harris, 50, the chairman, said: ‘The committee agreed to these plans, including an administration block the size of a school, because they were told that advice from headquarters was not to be questioned and that, if it was, they could be considered negligent and could lose their homes and businesses.’

The branch collected £1.09 million. It wanted to replace its old Swansea premises. Local members agreed a scheme, which included a headquarters grant of £360,000, but now say they had misgivings about some features, which included an Inglenook fireplace and a mower store worth £39,000. The branch produced more modest proposals which were rejected. It says that by the time it hit financial difficulties the grant agreed by headquarters had not been paid and it was tied to a contract it could not pay.

Peter Davies, the society's director general, said: ‘We just want to see the project completed.’ The administration block would house a shop, education and meeting facilities, and premises for an inspector. ‘It was a farm and we had to buy it all. We need an equine facility and that is part of the long-term plan.’

Source: based on The Daily Telegraph, 1996

The RSPCA example demonstrates how a project's success may be jeopardised if all interested parties across the organisation do not share an understanding of its purpose and proposed outcome. It illustrates that, especially in the voluntary sector, it may even be difficult to identify exactly what is the ‘organisation’. It can be equally easy to ignore or sideline certain interest groups within a more conventional organisation too, because they may not have an obvious interest in a project, or even because their interest seems likely to undermine the aims of the project as understood by more powerful interest groups.

NEGOTIATION SKILLS

Negotiation skills are essential for the project manager to get individuals and groups to agree on a common approach to a project, despite their potentially conflicting interests and priorities. The project manager needs to be able to negotiate with suppliers and customers and individuals to adopt a particular course of action. It is also important that negotiation is conducted in a way that will build long-term relationships, rather than simply secure short-term gains.

Effective negotiation relies on identifying in advance what objectives need to be achieved and what behaviours might be necessary to achieve them. The following is a process that can be used in negotiating:

Labelling behaviour

Signalling that you are about to suggest a solution to a problem or to ask an important question is one way of drawing attention to this and puts pressure on the person or persons at whom your signal is directed to respond.

Summarising

During a long negotiation, summarising what has been proposed and the stage that the negotiations have reached helps both to clarify key points and to create mutual trust by indicating that all perspectives are being taken into consideration.

Sticking to one good argument

While it may seem better to use as many arguments as possible to support a case you are trying to make, skilled negotiators tend to rely on fewer stronger arguments. This is because a weak argument does not add to a strong one, but has the opposite effect of diluting and weakening it.

Using questions

Questions can be used as a means both of persuasion and of control. Repeatedly telling an individual something that they are unwilling to accept is unlikely to get them to change their mind. It is better instead to ask carefully constructed questions that will lead him or her to realise the strength of your case and the weakness of their own. Asking questions gives the questioner more control over the conversation, forcing the other side to respond. Writing down a list of appropriate questions before a meeting can help you direct them more effectively and use them to play for time if you get into difficulty.

Activity 3.5: Practising Negotiation

You will probably be going into a meeting soon where you will need to use your negotiation skills. Work through the behaviours that have been identified (labelling behaviours, summarising, sticking to one good argument and using questions) and plan your meeting in your Course Journal.

SATISFYING THE CLIENT AND END USER

Most projects have an identifiable client or customer group which will benefit from or use the outcome of the project. The client may be external to the organisation which is implementing the project, for example, the customer for whom a new building is being constructed. Or the clients may be internal, for example, the users of a new IT system. As we have already seen, it is important that the client or end user shares and endorses the project's objectives and is actively involved in its development. If this does not happen, then the project is unlikely to be a success, as Example 3 demonstrates.

Example 3

Powerco, a major UK energy organisation, introduced a new management information system (MIS) which, while it was delivered on time, on budget and without major technical problems, failed to succeed, in that many end users were not satisfied with what was delivered. The company discovered that the primary cause of this dissatisfaction was a failure by the project team to engage properly and honestly with potential users at crucial stages of the project. Ironically, this failure of communication occurred despite the fact that user participation was given high priority in the project. Research conducted after the project was completed indicated that there were several crucial reasons for this mismatch between rhetoric and reality.

At the beginning of the project, its aims were not properly communicated to interested parties. While the primary aim of the project was to get business units to switch from site-based to business-based accounting, this was never made explicit outside the project team. In fact, at a series of MIS roadshows held to overcome potential end user resistance, promises were made to a wide range of potential users which suggested that the system's benefits would be far greater than this. It was positioned by a project team desperate to win support for a panacea that would meet everyone's needs. Inevitably, a strong feeling that the project had been oversold eventually surfaced and there was deep disappointment, especially amongst non-financial staff, once the system was installed. In fact, it later emerged that no definitive list of end users had ever been drawn up!

Given the lack of clarity at the outset, it is unsurprising that end users were not given appropriate feedback on how the project was progressing once it was underway. Nor were implementation responsibilities made clear at any stage, with the result that some business units ended up with unrealistically high expectations of the help they would be given in implementing the new system from the project team and the corporate centre. In these respects, the project team appears to have sacrificed effective user involvement for the need to meet deadlines as the project progressed.

Once the project was complete and the system ‘successfully’ installed, ownership of it inevitably remained a matter for debate, with some business units taking charge of its support and development, while others claimed that this was the responsibility of the corporate centre. The company was forced to conclude that, despite the avowed emphasis on user participation, end user consultation and involvement in the implementation process had not been effective. As a result, it incurred considerable additional expense in terms of hardware, software and development time after the formal handover of the system in order to ensure the satisfaction of all end users.

Source: based on Fowler and Walsh, 1999

Activity 3.6: What are the client's expectations of the project manager?

Make a list in your Course Journal of what kind of behaviours you think that a project end user should realistically expect from the project manager and project.

Discussion

Establishing an open, honest and co-operative relationship with the client should be priority for the project manager and project team if they want the project to succeed. Your list is therefore likely to include the following.

- **Honesty** – Clients expect project managers to plan and report honestly about the project. In order to achieve this, they must brief clients frequently about the project's progress and be willing for the client to attend project meetings when appropriate.

- **Co-operation** – Clients expect the project manager to demonstrate that he or she seeks a high level of co-operation with them. If indications of this are not forthcoming, then the relationship between the two parties is likely to deteriorate rapidly.

- **Communication** – Clients expect meaningful communication from the project manager, which keeps them informed about the project's progress, any potential problems, and any clarification that they might require from the client.

It is also extremely important that the project manager strives to provide the best output for the client regarding schedule, budget and product or service. If the client's expectations in this regard are unrealistic, the project manager must correct these misunderstandings at an early stage.

UNIT SUMMARY

This unit has focused on managing projects through people and how important this is in relation to:

- managing the relationship with stakeholders;
- motivating the project team to get results;
- dealing with senior management;
- building relationships across the organisation in order to encourage co-operation;
- satisfying the client and end user.

Recapping on the learning objectives from the beginning of this unit:

1. **Be able to identify why managing people is an essential part of project management** – we discussed how achieving project success depends on the effective use of human as well as material resources. We also examined how this is especially important in large-scale projects, which are becoming increasingly common in organisations today.

2. **Be able to establish which groups of people must be managed in a project and why and be able to explain what issues are at stake in managing them** – you were introduced to stakeholder analysis as a means of identifying interest groups and their issues, and as a vehicle for devising an effective strategy for managing the various stakeholders in a project.

3. **Be able to evaluate how particular groups of people involved in a project might best be handled** – this was addressed by examining how an effective project team might be built, discussing how senior management could best be handled, explaining the value of building relationships across the organisation and establishing the importance of satisfying the project client or end user.

4. **You are able to recognise which skills are most important for managing people in projects and know how to apply these skills where appropriate** – communication skills, negotiation skills and political skills are particularly important skills for the project manager to have, we then discussed strategies and techniques for effective application of these skills.

REFERENCES

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UNIT FOUR - IMPLEMENTING THE PROJECT

INTRODUCTION

The focus of this unit is on implementing a project. The first part considers how the activities of a project start. Although planning and action run side by side, it is often difficult to initiate action to progress the first tasks. Once things start to happen, the project enters a new stage. Management of the project changes, from stimulating the initial action to monitoring and reviewing it in order to control the project's progress. Control systems are essential in managing a project of any size, to ensure that the project achieves its intended outcomes. It is very rare for a project to run smoothly, however, and anyone managing a project can expect to have to keep up the momentum and to solve problems that arise. Good communications contribute a great deal to the process, and help all the stakeholders in developing a shared understanding of how the project is progressing. This unit addresses each of these considerations in turn.

This material is from our archive and is an adapted extract from *Fundamentals of Senior Management* (B713) which is no longer taught by The Open University. If you want to study formally with us, you may wish to explore other courses we offer in this subject area.

UNIT OBJECTIVES

At the end of this unit you should be able to:

1. contribute to the implementation of project activities;
2. monitor, and recommend adjustments to, activities, resources and plans;
3. maintain communications with project stakeholders; and
4. contribute to developing solutions to project problems.

READINGS

As you work through this unit you should read the following chapters from the PMBOK.

Project Management Institute. (2000). A Guide to the Project Management Body of Knowledge – Third Edition.

- Chapter 8 – Project Quality Management
- Chapter 10 – Project Communications Management
- Chapter 11 – Project Risk Management
- Chapter 12 – Project Procurement Management

ASSIGNMENTS

Individual and reflective activities are embedded in the unit discussion. You should consider the activity and record your observations or comments in your course journal.

In addition your instructor will provide an assignment that you must submit to demonstrate comprehension of the content presented in this unit.

MAKING IT HAPPEN

TRANSITION FROM PLANNING TO ACTION

In working on a project, it is sometimes difficult to make the transition from planning to action. It usually falls to the manager, as leader of the project, to make sure that activities are started; but not before it is clear who should carry out which tasks, and when. The first step for the project manager is to ensure that the plan is communicated to those who will be working on the project. It is not always safe to assume that others will understand the plan or its implications, particularly in terms of what they should be doing to make it happen. Plans are often focused on time-scales and schedules. If you have used computer-based packages to develop a plan, at a high level of detail, that plan can be difficult for others to interpret. Consider the following example.

Example 1: Understanding the Plan

I was asked to review a project which the client suspected was not under control. This was a four-person project which was scheduled to finish within 8 months. I walked into the meeting room where I had agreed to meet the project manager and was surprised to find him putting together a matrix of four by four project schedules which he had just printed out. There were sixteen A4 sheets in total – certainly impressive!

We discussed the intimidating-looking schedule for a while: I don't think either of us understood it. We then moved to the whiteboard. An hour later we agreed on a schedule fitting onto one side A4 – at that point we started making progress.

(Craig and Jassim, 1995, p. 26)

Make sure that the key people responsible for taking action on the first tasks understand what is needed. You may need to check that all the procedures have been gone through to secure their commitment to the project, and it might be necessary to issue a formal instruction to start work.

DEFINING TEAM RESPONSIBILITIES

Depending on the size of a project, responsibility for each key stage may need to be allocated to a member of the project team. Clear allocation of roles and responsibilities for tasks and key stages ensures that each piece of work is 'owned' by a particular person, and that overall responsibility for the work is spread appropriately between members of the team. Establishing clear lines of accountability for each team member is important to give them:

- a role in the overall plan;
- authority to act on behalf of the project;
- a sense of commitment;
- an understanding of your expectations; and

- responsibility to report to you on progress.

Target Dates

The overall plan will indicate the start dates for each group of activities, or each task. A useful way of focusing activities on achieving outcomes is to provide clear dates for completion of stages and of final outcomes. If there are a number of different types of team, these may start and finish tasks at different times. Where the work of one team depends on another having completed in time, there are important issues to consider. Although a good control system will provide information about progress on the tasks, the relationships between the people in the teams can have a profound influence on the process, with the potential to add considerable value or to cause considerable disruption.

Activity 4.1

Think back to projects in which you have had a part. From your experience, note in your Course Journal some of the ways in which you have seen teams add value to a project, and some ways in which projects can be disrupted by lack of co-operation between teams.

Discussion

Value can be added at any stage of a project, if teams focus on delivering the best that they can to their customers. In some cases the immediate customer of one team may be another team, who develop the project on the basis of the first team's work. As with any customers, finding out more about what they really want and delivering the best that can be produced within the scope and budget of the project will add value. Teams that achieve all that is required of them within the resource limitations and hand over their part of the project helpfully also add value. Value can be added by applying what has been learned from working on the project to improve working practices. New skills can be developed through project work, including team working, supervision, coaching and peer support. You have probably thought of many other ways in which value can be added.

Teams also have considerable power to disrupt. They can delay work so that their tasks are not completed on time, they can work carelessly and produce work of a poor quality. They can allow personal interactions to cause conflict and stress. They can adopt attitudes that present a poor image of the organisation to external stakeholders. They can simply behave badly.

Motivating and Preparing Staff

Motivation is important. In resourcing the project it may be worthwhile to build in a reward system that helps to motivate. This depends on the availability of the resources to make this possible. Even if the material rewards are good, the conditions in which staff work and the relationships between them always affect performance. A project manager is often able to influence conditions and culture. The tasks allocated to staff must be realistic and achievable, and it is helpful to agree these with teams or individuals. Staff often have to retain other workloads whilst working on projects, and it may be necessary to negotiate with senior managers to ensure that project staff have sufficient time and energy to do what is required.

New skills and understanding may need to be developed, in order for new tasks to be carried out. Sometimes staff are allocated simply because they have time to work away from their usual duties, even though they may not have the competence to carry out the project tasks. The manager of the project may have to arrange for training and support, whether or not this was anticipated in the initial planning.

Once staff have agreed to carry out their tasks, it is helpful to check that they understand how their contribution fits into the bigger picture. There is an opportunity to develop a project 'culture' of collaboration towards a successful goal. The boundaried nature of a project makes it possible to create a distinct culture that emphasises the positive aspects of the environment in which the project is located.

Resourcing the Project

Work will be delayed if the necessary materials and equipment are not readily available, or if the accommodation for the project has not been arranged. Although the project manager is responsible for overall resource allocation and utilisation, much of the work can be delegated. By conferring responsibility to achieve an outcome within the budget, more direct links between costs and outcomes are established. In most projects there will be organisational internal controls and statutory requirements to manage resources, for example in handling money or other materials. In setting up the project responsibilities it may be necessary to identify people with particular qualifications or experience to manage specialist areas of work. Even when all the necessary physical resourcing has been agreed and planned with a sufficient budget to enable it all to happen, it will often fall to a project manager to take care of practical details and to encourage everyone to take action.

Activity 4.2

Identify five steps a project manager can take to ensure that the tasks of a project start on time. Record your response in your course journal.

Discussion

These steps could include: recruit staff, allocate roles and responsibilities, motivate, reward, set objectives, provide training and support, arrange supervision, agree start times, ensure that accommodation is prepared, ensure that materials and equipment are provided, ensure that the plan is shared and understood, delegate responsibility for achieving outcomes.

Controlling the Project

Unique Problems and Constraints

In an ideal world, projects would be completed on time, within specified budgets and to the standards set out in the plans. In practice, any project involves a set of unique problems and constraints that inevitably create complexity and risk. Plans are liable to change as work progresses, and each stage in the process may have to be revisited several times before completion. Projects do not exist in a vacuum: they often take place in rapidly changing contexts, and the impact of the changing environment on the life-cycle of the project has to be managed. In projects, new issues will emerge as activities evolve. In this section we discuss ways of monitoring a project as it progresses, and of identifying any emerging risks or potential for improvement, keeping activities in line with the plan or adjusting plans accordingly.

Monitoring as Control

To control you need a plan that indicates what should happen and information that tells you what is actually happening. This is monitoring activity. By comparing the information about actual progress against the plan, you will be able to identify any variations.

- Control is an important part of project management. It involves:
- reporting the progress of the project against the plan;
- analysing the reasons for variance between progress and plan; and
- taking action to eliminate variance.

However sound your project plan, it is certain to need adjusting and updating as you go along. There are techniques that help to make this possible, and use of project planning software will often make the task much easier.

Figure 4.1 illustrates the elements of project control:

- a standard – the project plan
- collection of monitoring information, primarily from team members
- a mechanism for comparing progress against the project plan to identify problems
- a process to identify the causes of problems, and to generate solutions
- winning support and agreement to proposed changes to the plan
- implementing corrective action, either to bring the project back in line with the plan or to change the plan.

It is also important to collect and analyse data to report back to stakeholders, who will remain involved in monitoring and negotiation throughout the life of the project.

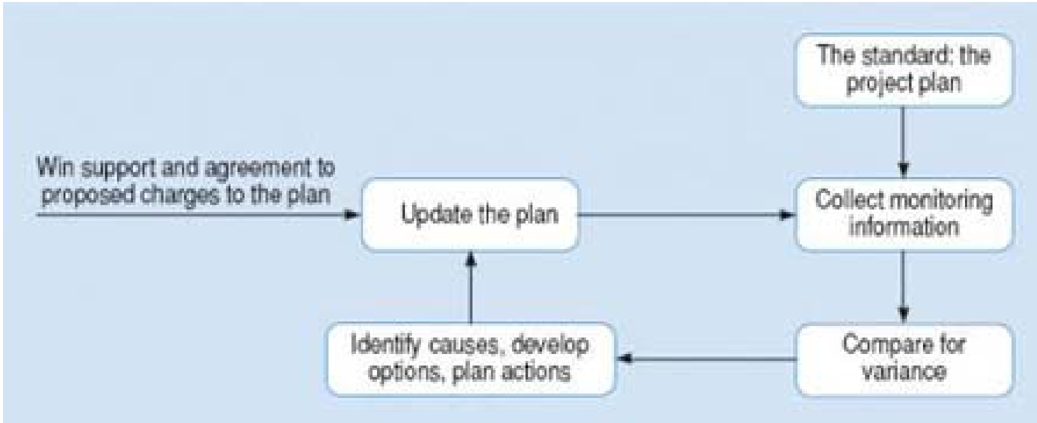

Figure 4.1 - The essential elements of project control

Expect that, as the project progresses, there will be things that you will want to change within its boundaries. There will also be changes in the environment of the project, that will impact on the tasks and activities that are part of the project itself. Whenever a review of project progress leads to a decision to make a change in the plan, it is essential to record the changes on the plan itself so that a master plan is maintained that is up to date. If you always record changes to the plan you will maintain a 'living' document as the basis for continuing action.

Gathering Information

Successful control of a project depends on the flow of information, so it is important to have systems in place to make sure that you get feedback on what is happening. If the project team is meeting regularly to review progress, monitoring becomes more dynamic and changes to the plan can be achieved by consensus. Involving the team not only helps to keep everyone on target – it also builds commitment.

Monitoring is the most important activity during the implementation phase of a project, because it is the only way in which you can control the work to be sure that the objectives of the project will be met. To keep track of what is happening you may have to consider gathering information on two levels:

- **Macro Levels** – to include overall business objectives, time, budget, quality;
- **Micro Levels** – to include tracking individual tasks; that they have been initiated, that they are running on track and that they are due to complete as planned.

Project status reports and project status meetings are formal reporting structures that enable you to collect and collate this information. However, if you rely on others to provide all of your information you may miss early signs of difficulties – many experienced project managers make a point of 'walking the project' to keep in touch with the day-to-day issues that emerge as work progresses.

Activity 4.3

What might you as project manager be able to monitor by 'walking the project' that you would not know about from formal reports? Record your response in your course journal.

Discussion

By keeping a level of informal contact with the most important activities you will be better able to monitor the atmosphere in which teams are working. You will be in a better position to judge whether the interpersonal relationships are creating productive energy or contributing to conflict and delay. You will be able to respond quickly if teams are facing delays because of failures in deliveries of materials or equipment. You will be more likely to notice if staff are being pulled away from the project because of other work pressures.

Control is only possible if you have a plan against which to measure progress. If the plan is clear about what should be achieved and when, it is possible to monitor progress to be sure that each outcome is of the right quality and achieved at the right time.

MILESTONES

Milestones are measuring points that are used in reviewing the progress of a project. Milestones can be set in different ways, to reflect different purposes. For example, milestones are often used to provide an agenda for regular meetings which review the project. These reviews should take place, weekly, monthly or quarterly, depending on the nature of the project.

Another approach is to set the milestones to reflect key phases of the project. Sometimes such milestones are established in this way to enable reviews to consider whether the project should be continued or should stop at this stage. Some organisations take a more challenging approach and inquire at each review whether the project should be terminated, expecting an adequate defence to be made in terms of the continuing value of the project to the organisation. In Example 2 – Turning back at 'tollgates', this review stage was called a 'tollgate review'.

Example 2: Turning Back at 'Tollgates'

I was on a team developing a project for an international information technology organisation when the project was discontinued at a 'tollgate' review. The project was to develop and pilot a way of consulting about a new information system prior to developing the specification. The project had progressed through several previous reviews and had received approval and support, so we were not particularly worried about the response we were likely to receive at this next review. We prepared a briefing explaining how the event would be designed and we had provisional arrangements made to run pilot programmes in Sweden, Argentina and Greece. We expected the green light to confirm the arrangements and start within a month or two. However, we were all shocked to learn that the project had been discontinued at the tollgate review. Apparently, the strategy had been changed and the new system had to be introduced quickly and without consultation. The project staff was paid off and the project closed immediately.

(a manager from the Course Team)

INTERDEPENDENCY OF SYSTEMS

The control system approach to project control provides a simple overview of the process of planning, measuring against the plan and taking action to bring things back into line if necessary. This suggests that events will move in a fairly linear way. Life is messier than this, however, and every time that something happens it will have an impact on everything else around it – so the interdependency of systems is important to consider.

Example 3: A Symbiotic Relationship

An organic rice farmer in Japan has ingeniously devised a good way to overcome pests. Takao Furuno's farming method has been called a 'one-bird revolution'. Since its introduction ten years ago, it has been eagerly taken up by 10,000 Japanese farmers. Its simplicity adds to its beauty. It revolves around the duck.

Soon after the rice seedlings are planted, ducklings are released into the paddy fields. The ducklings readily launch themselves into their new habitat and eat the insects and snails that attack the seedlings. They also use their feet to dig up weeds to eat, and by doing so they oxygenate the water and encourage the roots of the rice plants to grow.

The amazing thing is that ducklings don't like rice seedlings – something to do with the silica content. Farmers adopting this new method no longer need to spend up to 240 hours per hectare in manual weeding every year; they can sell the ducks at market, and can increase the rice yield by between 20% and 50%.

Takao, who worked out his method by a 'combination of contemplation, inspiration and experimentation' has not patented his method, as he wanted it to be widely adopted.

(from 'One bird – ten thousand treasures', Mae-Wan Ho, *The Ecologist*, October 1999, reprinted in *Resurgence*, No. 199, March/April 2000, p. 15)

Activity 4.4

A symbiotic relationship can be positive, or the impact that occurs when something happens can have a negative result. Think back to a project that you were working on and consider what examples there were of interdependency. Takao said that he used 'a combination of contemplation, inspiration and experimentation' to work out this method. How did you see the interdependency? Record your response in your course journal.

Discussion

You need to be alert to what is happening in different areas of the project. It will help you to identify potential interdependencies that could work either for you or against you. The sooner that these are identified, the sooner you can take action.

Project Status Reports

Project status reports are regular and formal. You will need to decide how often they are necessary – depending on the size and nature of the project, it might be weekly, monthly or quarterly. In some situations reports might need to be hourly, if a problem is causing serious concern and has the potential to delay progress seriously. Daily reports might be necessary if there are implications for arranging work for the following day.

The degree of risk involved, and the time it would take to recover from failure to complete important milestones, are guides for deciding the frequency of reporting. Other considerations might include how quickly the project could get out of control, and the time it would take to implement contingency plans. The project sponsor may have a preference about the frequency of reports and review meetings.

To prepare the report, you will need to have information from the members of the project team on:

- completion of delegated tasks;
- completion of key stages;
- any work that is behind schedule (and why);
- any issues that need to be resolved (as soon as they arise); and
- any difficulties anticipated in the near future.

Some project managers find a standard reporting template useful, so that team members can see at a glance what you need to know and just fill in the gaps. A standard report might include:

- the project title;
- a brief description of the key stage covered by the report;
- the name of the person responsible for this key stage;
- the date of the report;
- actual progress tracked against planned progress towards project 'milestones';
- a summary of progress on this key stage, including explanation of any slippage and remedial action taken;
- any issues awaiting resolution; and
- the milestones due in the next reporting period and the date of the next report.

Once you have set up a system for regular reporting you will probably have to make sure that it happens, at least in the early stages. Be prepared to chase up reports and to insist that they are necessary and must be presented on time.

Risk and Contingency Planning

Risk is the chance of something occurring that has an adverse effect on the project. Many risks can be foreseen and identified. For example, if the project involves development of computer-based systems, time needs to be allowed for 'de-bugging' once the systems are installed.

The main categories of risk can be summarised as:

1. **physical** loss of or damage to information, equipment or buildings as a result of an accident, fire or natural disasters;
2. **technical** systems that do not work or do not work well enough to deliver the anticipated benefits;
3. **labour** key people unable to contribute to the project because of, for example, illness, career change or industrial action;
4. **political/social** for example withdrawal of support for the project as a result of change of government, a policy change by senior management, or protests from the community, the media, patients, service users or staff; and
5. **liability** legal action or the threat of it because some aspect of the project is considered to be illegal or because there may be compensation claims if something goes wrong.

In view of all these possibilities, the careful examination of the question below, early on in the project, can save a lot of (though not all!) problems later:

'What could go wrong in this project?'

Having identified potential areas of difficulty you can then examine these by asking, in respect of each one:

1. How likely is this to happen?
2. How serious would it be if it did?

Having raised these questions, you can then consider what you might do either on your own or with a team. Some of the less likely possibilities and those that would really just be minor irritants may not need a lot of attention. Others could be seen as quite critical to the success of the project and you can, at an early stage, plan what to do if the worst happens.

What key questions do you think stakeholders would want you to answer when you prepare a report about the progress of the project?

We think that the central questions are:

1. Is the project on schedule?
2. Is it within the allocated budget?
3. Have the milestones been achieved?
4. If not, what action has been taken to correct the situation?

Other questions may be appropriate, including whether problems have been identified and solved, whether experience so far has any implications for future plans, whether any additional resource is required or whether there is any need for revisions to the overall plan.

The information gained from project status reports will be helpful in compiling reports to stakeholders, but different types of report may be appropriate for stakeholders with different concerns. For example, the project sponsor may be most concerned with the overall progress against goals, but stakeholders concerned with only one group of project objectives may only want information about these. There may be confidential information to be shared within a limited group of stakeholders. Some stakeholders will only have an interest in the overview and the implications for the organisation.

Example 4: Overview and Detail

A junior estate manager who worked for a conference centre reported a personal experience of reporting at a different level. He said, 'I was asked to make a presentation to the Chief Executive about the re-location of our residential accommodation and I was very worried that he would ask me to explain why we were so far behind schedule. We had found asbestos in one of the ceilings and had immediately stopped work and called in specialists which had, of course delayed everything. In fact, all that the CE wanted to know was whether we were going to keep to the revised schedule now. He was very pleased to hear that we had asked the specialists to check all of the other rooms that would be part of this move so that there would be no more nasty surprises. It made me realise that in reporting at that level I had to give an overview and show that we could stand back from problems and look ahead to make sure that we achieved the main outcomes as well as possible.'

Reporting often raises issues for those who receive the reports. You may want to consider that people often react with questions at the level of detail that you have offered. If you limit what you offer to target the key concerns from each perspective you are likely to reduce the extent to which you have to smooth anxiety or deal with misunderstandings!

Project Meetings Schedule

You need to decide early on what meetings are essential to the monitoring process. All your stakeholders will expect to receive reports at regular intervals, whether formally or informally. So you need to ask yourself:

- Who needs to be informed?

- About what?
- How often?
- By what means?

Effective communication involves giving information, collecting information and listening to people. To ensure the smooth running of your project, you might need any or all of the following:

- formal minuted meetings which probably run to a schedule which is outside your control;
- meetings with your sponsor (which might be on a one-to-one basis);
- progress meetings with the project team;
- individual meetings on a one-to-one basis with team members; and
- *ad hoc* problem-solving meetings when particular issues need to be resolved.

Meetings need a clear purpose and focus, and they should be recorded on project schedules. They should be time-limited and given proper priority in diaries, so that time is not wasted by waiting for inputs from key people. Meetings will only be respected if they are managed to avoid wasting time and effort.

Activity 4.5

Use your Course Journal and prepare an agenda for a project meeting for a recent project that you have worked on. What is the purpose of the meeting? Who needs to be invited to the meeting? What will their interest be in attending the meeting?

Discussion

In preparing the agenda, you might also consider what else you need to make available at the meeting. Will you do a slide presentation? Will you give the participants at the meeting copies of the overheads? Is a project status report going to be delivered? Will you need to provide a summary of the key points of this report? What questions might the participants ask?

Maintaining Balance

Monitoring is also concerned with achieving a balance of the three dimensions of the project:

- cost – the resources available;
- time – the schedule; and
- quality – the scope and appropriateness of the outputs or outcomes.

Many of the difficulties in implementing a project are caused by poor time management. This will have a direct effect on the costs of the project, as well as on the quality of what is achieved. So there need to be systems for monitoring:

- the time spent on project tasks;
- the resources used (people, materials and equipment); and
- compliance with applicable quality standards.

These are the three dynamics that are always key to keeping a balance in managing a project. There are a number of options for how you might take action to maintain this balance, once monitoring has provided you with information that suggests that action is needed.

Splitting the key stages to avoid each following another when there is no necessity to have one in place before the next: If it is possible to carry out two or more key stages concurrently, you will speed the project up, but you will need to resource all the concurrent stages rather than waiting for one to finish so that staff can be moved to the next stage.

Making savings by removing or reducing contingencies from estimates: as the project work progresses you could review the contingency time and budgets that had been estimated. You will be in a better position to judge how much contingency is likely to be needed as the project progresses.

Re-evaluating the dependencies in the logic diagram: You may have been over-cautious in making the first judgements about the sequence of activities. As some outcomes are achieved, you may find that you can avoid some of the dependencies.

You may find that you can make more use of slack time to speed up completion of tasks.

Avoiding duplication of effort: If you can minimise duplication you can make savings of time and effort.

Re-negotiating lengthened time-scales if an unanticipated problem causes a delay that cannot be recovered: If this is the situation, it is worth calculating whether lengthening the time-scale would be more cost-effective than increasing the resources to enable completion on time.

Increasing the resources available will usually increase the costs, so this should be considered alongside other options. It may be possible to increase resources at a limited cost by reviewing the use of existing staff. For example, instead of getting new people with appropriate expertise assigned to a key stage which is falling behind schedule, you may already have such people within the team but carrying out activities that have less need of that expertise.

If a project is facing serious delays or is running over budgeted costs, it is worth considering the quality targets. Reducing the quality or scope of specified outputs or outcomes may be possible. In considering this option, it is worth reviewing what quality means to each of the key stakeholders. Additional features may have been included in the project and these add very little value for the majority of stakeholders.

Monitoring expenditure is usually exercised through regular reports. In many organisations the financial aspects of a project would be subject to their usual financial procedures. There may be decisions to make about the number and levels of budgets, and about how frequently budget-holders should receive information about expenditure and reports on their current position.

Tracking Progress

Gantt charts and critical path diagrams are useful for tracking project activity and for making necessary changes to the project plan. Project-planning software may also be used; the original chart is kept as the standard and any modifications are superimposed.

The example of the joint strategy for commissioning training services demonstrates how tracking produced information that led to a change of plan.

Example 5: Joint Strategy For Commissioning Training Services

Amanda drew up a plan for developing a strategy for commissioning training services for a large public service organisation. Three different approved agencies were involved. Completion of the key stages of the project went according to schedule up to the point when the first draft of the joint strategy was issued to each agency for consultation (22nd September). Five weeks had been allowed for this consultation, and a further two weeks for the lead manager within each agency to produce and send a written response to Amanda.

Three weeks into the consultation, Amanda contacted the lead managers to confirm that they would be able to meet this schedule. Agencies A and B were confident that their responses would be with Amanda on time, although Agency B had decided to extend the consultation period to six weeks, leaving only one week to write up its response. But Agency C had a problem: the chair of its management committee was unexpectedly abroad and this would delay the response by two weeks. Since the consultation key stage was on the critical path, the project would no longer be on target unless some adjustments could be made.

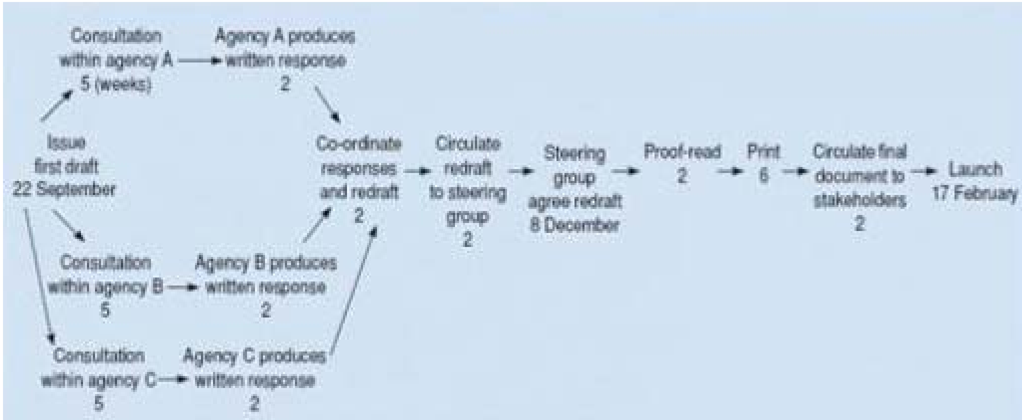

Figure 4.2 - Portion of a critical path diagram

Using the critical path diagram, Amanda identified a number of options:

1. postpone the 8th December steering group meeting;
2. tell Agency C that it would have to get its response in on time;
3. complete the redraft more quickly; or
4. put pressure on the printers to shorten the time they needed to print the document.

Amanda decided that ignoring the absence of a key consultee could jeopardise implementation of the strategy. She was also concerned that compressing the time she had allowed for redrafting could compromise the quality of the document that was to go to the steering committee.

The constraints on adjusting the schedule included the approaching Christmas period. If the 8th December steering group meeting was cancelled, the group would not be able to meet again until 6th January. Amanda approached the printers who were able to cut the print time down to two weeks, provided that this was outside of the Christmas and New Year period. This meant that the strategy could be launched as planned on 17th February, even though the steering group meeting was postponed to 6th January.

Control involves not only gathering but also reviewing information, to identify implications for the progress of the project so that action can be taken to get back on track.

Controlling Changes to the Project

Sometimes an addition or change to the project will be requested. This can be difficult for those who manage the project, because you will want both to maintain good relations with your client and to protect your profit margin and budget for resources. The first step is to assess the extent to which this will cause a need for additional time or resources. Perhaps the change can be accommodated in the project plan within the existing time-scale and budget, for example by altering some of the tasks in the later stages. Once the implications for time and cost of the requested change are known, you can decide how to respond to the client.

The change might be agreed without any charge to the client. There might be a case for making an additional charge, and you will have the full costing for the modification to support your claim. You may want to negotiate with the client to achieve a solution that suits both of you, again with full understanding of the implications. Whatever is decided, you will need to be fully informed of the cost and time implications of the proposed change before you enter discussions about how it could be managed.

Once any change has been agreed, it is usual to review the project documentation, making a formal amendment to the project brief, and amending the schedules and budgets and noting changes in the plan. You will also have to communicate the changes to anyone who needs to know in order to take appropriate action.

Activity 4.6

Think about what happened on recent projects, when a stakeholder requested an addition to the project? How was this handled and what was the outcome? What could have been done differently? Record your response in your course journal.

Discussion

Sometimes, we agree to the request of the project sponsor for additional work to be included in the project. At the time, it seems that it will be easy to implement. There are times when it creates additional problems that were not foreseen. It is useful to reflect on what happened as a result of the additional work so that we can learn how to manage these changes appropriately in a future project.

Managing the Communication Process

Communication on project work is the glue that holds everything together!

(Young 1998)

The success of a project is principally determined by its stakeholders, including sponsors and project team, and you can only know how you are doing by keeping channels of communication open. In this section, we examine briefly some of the issues involved in communicating with all people involved with the project, starting from its launch:

1. introducing the project team and their roles;
2. explaining the benefits of the project and its anticipated outputs and outcomes;
3. describing the project plan;
4. setting the ground rules for communication; and
5. responding to questions.

Launching the project also allows you to set the tone of communications during the event. You may arrange to be formal or informal, accessible or distant, friendly and open or closed and withdrawn. However, you present yourself and the event will set the pattern for future communications.

Communicating with the Project Team and Stakeholders

In project management, the quality of communication can make the difference between achieving your objectives and falling short of them. Projects often fail not because of problems with the work itself, but because the people involved are not working together effectively.

Project managers communicate in diverse ways: face-to-face or by telephone, in written and electronic forms, through presentations and reports. The purpose of communication is primarily to explain to others what has been achieved so far and what remains to be completed, and to listen and respond to the needs and views of others concerned with the project.

Example 6: Listening to the Needs of Stakeholders

I had an example of the importance of active listening in the context of a critical cultural-change project I managed for BT Cellnet which involved a mobile switching centre. The users in the new mobile switching centre were not content with the supply of a microwave cooking facility for the new building. People worked at weekends, late at night or during call-outs. They had indicated that they preferred to have a conventional cooker so they could prepare food such as pies, non-frozen meals and vegetables to provide a proper meal.

I set up a meeting with the users to ascertain the reasons why they wanted this facility, what the consequences were if I did not provide what they wanted and to look for alternative options that satisfied all parties.

During this meeting the users stated their requirements clearly and precisely. They felt very strongly about not being able to prepare food in the way that they wished to prepare food. A microwave was not an acceptable alternative to a conventional cooker. If they were not supplied with a conventional cooker, staff would no longer be prepared to work longer hours or show goodwill towards working by exception such as attending call-outs or staying longer at work to resolve urgent issues. They did not wish to discuss any other alternative.

I did not capture the views of the users. I heard what the users were saying during this meeting but I did not actively listen to them and act on what was said. I missed out on vital information (the reasons why users felt that this was the most important requirement to them and why other requirements did not matter so much to them).

Yes, in the end I decided to replace the microwave cookers with conventional cookers to meet the requirements of the users. The users in this particular part of the country were used to cooking real meals. I did not discuss the importance to them in detail, and therefore, did not understand. It did not matter what else I provided them – the cooker was more important than facilities. They felt so strongly about this that they said that I could reduce their desk space but provide the cooker!

By installing a heat/smoke detector and automatic shut off facilities, I was able to compromise and provide the cooker and I had a very happy user community, with a lot of flexibility thrown in.

(Eddie Fisher, Senior Programme Manager, Vodafone Group plc)

In this example, the need to maintain full cooking facilities for the staff was seen as highly important. When staff regularly work outside normal hours, the social environment can contribute considerably to the identity and independence of the team. For example, in Fire Service facilities, fire fighters need to have accommodation for long periods of duty, and the cooking and dining arrangements are recognised as contributing to the maintenance of the team. Cooking and eating together have often been seen as a way of building strong cohesion.

Building a project team is a continuing process that needs to be constantly worked at. The project team may be drawn from a variety of different departments within your organisation, or from different agencies, and may be very diverse in knowledge, skills and experience. Effective team working in a multi-disciplinary context can be hindered by lack of understanding of each other's roles.

Managing Conflict

Conflict can emerge when a project is thought to be absorbing scarce resources or shifting the balance of power.

The schedule for project meetings provides a framework for communication while the project is in progress. Meetings with team members on a one-to-one basis, in addition to group meetings, will help them to feel supported and could be an opportunity to provide coaching when necessary.

Example 7: Reducing Risks From Conflict

It is inevitable that conflict will develop at some stage in any project team composed of people with different personalities, backgrounds, experiences and specialist skills. Interpersonal conflict may arise where people do not want to get along because of different specialisms, racial prejudices, ethics, morals and the like. Typical causes of conflict include breakdown in communications, conflicting objectives and lack of trust. Ambition, jealousy and simply the wrong 'chemistry' are not unusual. There is often fear of change, or of exposure of some inadequacy or of failure.

Conflict can be healthy to the success of the project team, provided that it teaches everyone something about how to deal with and participate in resolution of the conflict. Look at all the communication channels and human interfaces to identify conflict risks. It can help to hold a risk identification workshop, or to carry out team building by openly declaring risks.

Risks by themselves will not disappear. You should devise a risk mitigation plan to deal with identified risks in a controlled way by being proactive. This might involve improving communications, substituting some personnel, or making changes in the project organisation. It is best if you can do this in the early stages. You also need to be reactive and put together contingency plans. Be on the lookout for new conflicts, because peoples' circumstances and behaviour will change as the project progresses through the various phases. We humans like company even if people affect us, shape us and influence our feelings, attitudes and thoughts. Being a member of a project team affects individuals. Where two work together for their mutual benefit, they are co-operating. It is a valuable behaviour. Competition arises when two or more people vie for a goal where not everyone can be a winner. The alert project manager can develop a behaviour influence strategy whereby he will encourage team members to say good things about each other. People tend to want to help those who say good things about them. Project managers need to encourage team members to exchange favours: smaller ones first, larger ones later once trust/good relationships have been established.

(Eddie Fisher, Senior Programme Manager, Vodafone, Ltd.)

Activity 4.7

Consider situations where there has been conflict? How did this conflict occur? What happened to improve the situation? Where could you see that communications had failed? What was done to improve communications? Record your responses in your course journal.

Developing Solutions to Problems

Dealing with Risk

Projects are high-risk activities, and it is in the early stages that uncertainty is greatest. Some of this uncertainty can be removed during design and planning, but in practice a great deal may remain. Risks can be ranked according to their probability and likely impact, and a risk log can be kept detailing this information. Throughout the progress of the project you will need to review your risk log, to check whether any risks have become either more or less probable, and whether any new risks have appeared. Formal risk review should be a team activity, and could be included as a regular agenda item at every team meeting.

Discussing this issue with the project team helps ensure that rankings are realistic, and that ways are found of dealing with potential crises. If everyone is aware of the triggers for each risk, difficulties are more likely to be spotted early on before too much damage is done.

When monitoring project risks and adjusting activities you need to pay particular attention to:

- tasks inside key stages;
- points at which several people are involved in one task;
- tasks following a merge in the logic diagram;
- key stages or tasks which will take a long time to complete;
- the relationship between each key stage and the next;
- any point at which the people involved are doing a task for the first time;
- tasks involving new or unfamiliar technology;
- key stages where there is very little or no slack or float in the schedule.
- When a risk becomes reality, its implications must be assessed, including:
- the effect on costs and resources;
- possible consequences if the problem is not addressed;
- which aspects of the project are affected; and
- how serious the problem is thought to be.

Depending on the reporting arrangements you have in place, you may need to notify your sponsors of any problems immediately. It is more likely, however, that you would want to identify possible solutions first, so that you can make recommendations for action at the same time.

PROBLEM SOLVING

Involving the whole team in the problem-solving process shows that you value their experience and knowledge in devising a solution. It may also be appropriate to involve other stakeholders and/or the project sponsor. If problems are solved jointly there is usually wider ownership of the solutions and their implications; and, if more resources are agreed to be needed or new procedures are put into place, there is also likely to be more support.

Problem solving can be broken down into a series of steps, as shown in Figure 4.3 below.

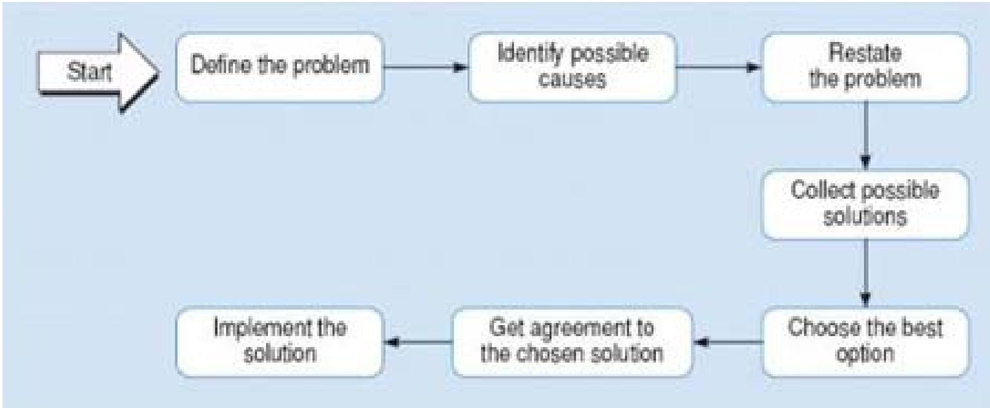

Figure 4.3 - Steps in problem solving (based on Young, 1998)

Defining the Problem

It is vital that the problem is identified correctly. If the risk management system is working properly, the problem should not have hit you completely out of the blue, and you should already have some idea what it is about. But, although there is often a temptation to skip the definition phase and go straight to causes and solutions, it is important to be as clear as possible about the nature of the problem as seen from different perspectives, by answering questions such as those below.

What? – Can the problem be broken down into smaller parts? Is any one of these smaller parts more significant than the others?

Why? – Why has the problem arisen now? Why wasn't it noticed before?

When? – Is this a recurring problem? Is it part of a pattern? Might the timing be significant in some other way?

How? – What was it that drew your attention to this problem? How have problems like this been dealt with before?

Where? – Is the location of the problem significant? Does it also occur elsewhere?

Who? – Are there particular people who need to be consulted about the problem or who would benefit most from solving it?

Time spent collecting information at this stage is time well spent, because it helps to ensure that later decisions have a sound basis.

Identifying Possible Causes

The possible causes of a problem can be written onto Post-it notes or similar, and arranged on a flipchart or whiteboard in the form of a 'fishbone diagram'. This can be a useful method to help a group to examine causes of problems, and perhaps also to clarify your own thoughts. Figure 4.4 shows a fishbone diagram produced by Midway Airlines to analyse the causes of delayed flight departures.

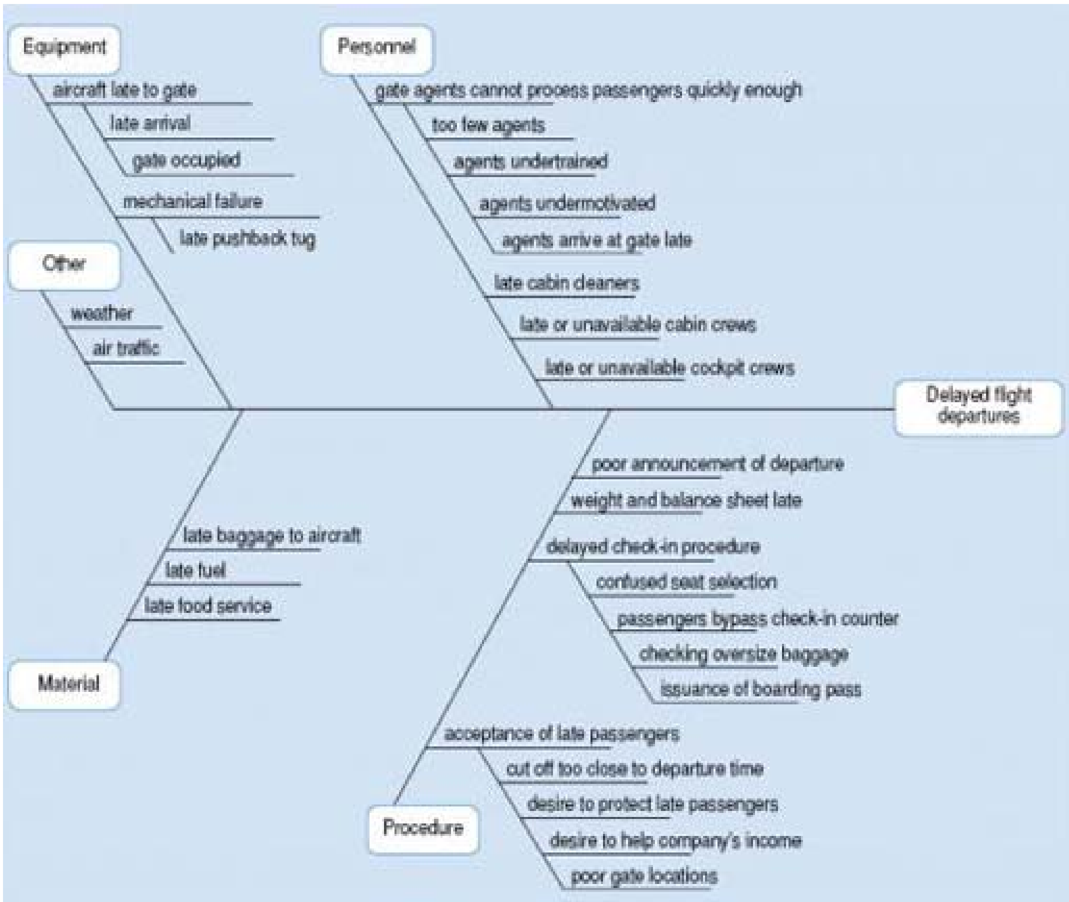

Figure 4.4 - Fishbone diagram of causes of delayed flight departures (from Wyckoff, 1992)

To construct a fishbone diagram, you begin by writing the problem in a box on the right-hand side. Next you draw in the backbone and some ribs, each of which should have a heading denoting the area it addresses, such as:

- people;
- process, procedures or method;
- materials; and
- equipment.

Such headings give the process some structure, but are not essential. If the problem is clearly located within the people area, for example, you could use the ribs of the fish for the main reasons, asking the question 'Why is the problem occurring?' Each of these reasons could then be split into sub-reasons, by asking the same question again.

Activity 4.7

1. Think of something that recently went wrong at work. Draw this out as a fishbone diagram, tracing each contributing factor back to the causes of the problem. Keep asking, 'Why did this happen?' until you are sure that you have identified all of the contributing causes.
2. What can you do to prevent this problem from recurring? Consider each cause that you have identified, and what could be done to prevent a similar problem arising again.

Record your answers in your course journal.

Discussion

You may like to discuss your diagram and your suggestions for solutions with your manager or the team who encountered this problem. It may be helpful to draw up the diagram with others who experienced the problem because, if they are involved in analysing the causes, it is likely to be easier to engage their support in implementing solutions.

When the possible causes are laid out like this, the structure helps to show duplications and links between them, so that you can eliminate any that do not apply. Causes on more than one arrow may be significant, and could be described as primary causes.

Fishbone diagrams help break down an issue into more manageable pieces, encouraging the team to escape from the cage of linear thinking and generate new ideas. Possible solutions may begin to emerge for even the most intractable problems if these are looked at in this different way.

Using data collected over one month, Midway Airlines constructed a histogram illustrating how many times each cause of delay had arisen (Figure 4.5: Histogram of Midway Airlines flight departure delays). Using the Pareto principle, which says that 80 per cent of a problem is generated by 20 per cent of the causes, helps to identify priorities for action.

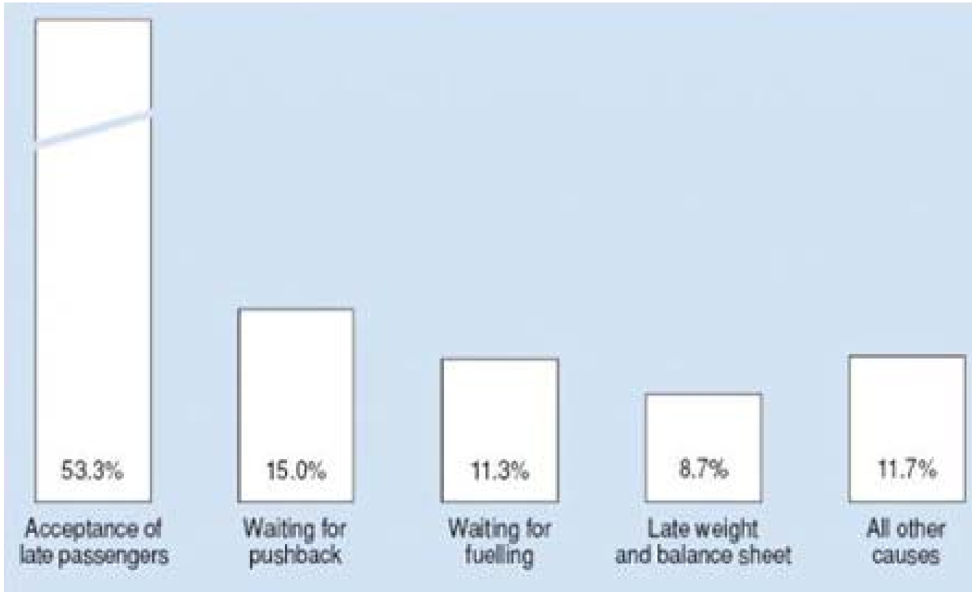

Figure 4.5 - Histogram of Midway Airlines flight departure delays

Activity 9

Using this histogram, identify the main causes of flight departure delays. Record your observations in your course journal.

Discussion

The histogram showed that the main causes the airline should concentrate on were:

- acceptance of late passengers;
- waiting for pushback;
- waiting for refuelling; and
- late weight and balance sheet.

All other causes added together only contributed 11.7 per cent to the total.

Restating the Problem

If your analysis of the problem and its possible causes is thorough, it should enable you to rewrite the problem statement to include the causes. If you can clarify your objective by defining a desired end-state, you are more likely to produce a good solution.

Collecting Possible Solutions

This is the most creative part of the problem-solving process: it involves breaking the mindset within which situations are normally interpreted. Brainstorming is a good way to generate new approaches, by making sure that even apparently ridiculous ideas are not thrown out in the initial stages. Brainstorming has two basic principles:

1. Quantity is more important than quality, in the creative phase.
2. Critical comments are not allowed, at this stage.

It is important not to stop just because the flow of ideas has slowed. That is often the point at which really good ideas start to come.

Choosing the Best Option

When you have collected a broad range of options, each possible solution should be assessed for its feasibility. As the feasible options are narrowed down, you may choose to analyse three or four in detail. Appraise the possible consequences of implementing each of these, against your criteria for cost, time and quality.

Getting Agreement for Chosen Solution

It is important to establish consensus as far as possible within the project team on the best solution, and to record your decision. Depending on your reporting arrangements and the severity of the problem, you may then need to prepare a formal report with recommendations for action and take it to the project sponsor(s) for agreement. Solutions have to be 'sold' to ensure that they are acceptable.

Implementing the Solution

Getting agreement will not in itself ensure effective implementation. An action plan is needed, to set out exactly what each person now has to do. Your adjusted project plan (especially the critical path diagram and Gantt chart) and observation of what is happening should enable you to monitor how the recommended actions are being carried out.

In Example 8 the leader of a children and families team describes how they tackled a quality problem as part of a project to improve the process of reviewing cases.

Example 8: A Quality Problem in a Social Work Team

From supervision of my team, I had some very tangible evidence that there was a quality problem. The quality of case reviews varied considerably from worker to worker and from case to case. What concerned me most was that care plans were sometimes vague, and even when their quality was high, there was evidence of drift. Deadline dates for key events were not adhered to and some actions were getting lost altogether. Even the dates for reviews were sometimes not kept to, so problems in implementing care plans were not picked up and rectified. Don't get me wrong. I'm very proud of the team and the work they do – and so are they. Everyone has a heavy caseload and they are often very complex cases. Someone or something will always disrupt the best of plans. It's often the everyday wheeling and dealing that moves a case on, leaving the formal plan way behind.

The team were going through the motions of completing the mass of forms but I don't think they really saw any relationship between the bureaucracy and the quality of their work. They were demoralised really. There seemed to be some management problems as well:

team leaders often didn't attend reviews and this seemed to be becoming the norm. Good delegation, you could say, but if we don’t take reviews seriously enough to attend, then why should our staff?

And where were the service users in all of this? To me, children and their families can find very little in the process that they can be positive about. Generally speaking, it must be a totally alienating experience. Some key workers do a good job of taking families through the review process before it takes place, explaining what's going to happen, but even then it can be painful. Parents are always included, of course, but they are outnumbered and outgunned. Children and their families have a chance to comment on the process and outcome, but it doesn't feel to me like really listening to customers. I think they just accept the review process as another hoop to jump through.

So I had some tangible cause for concern and some gut reactions that I needed to check out.

Activity 4.10

On the basis of the information in the case study, draw a fishbone diagram to define the problem and identify its possible causes. Record your diagram in your course journal.

Consider how you would find out which were the main causes that needed to be addressed?

Discussion

You may not be familiar with the social work setting, but you will probably have identified the central problem issue as being poor quality of childcare reviews. You may also have recognised problems of communication, shortage in equipment and resources, and personnel; and failings in the use of procedures and systems. Figure 4.6 (causes of poor quality of childcare reviews) shows the fishbone diagram the team leader drew with her team.

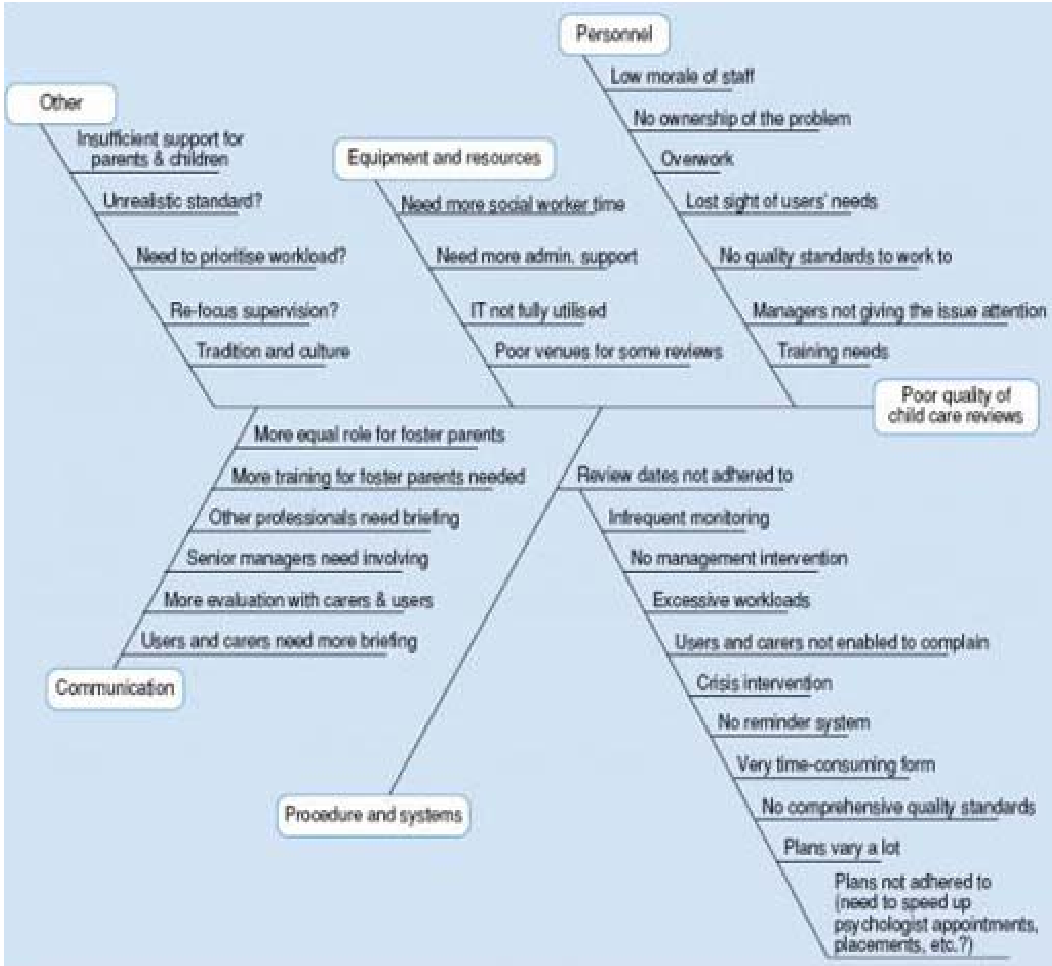

Figure 4.6 - Fishbone diagram of causes of poor quality of childcare reviews (Wyckoff, 1992)

To collect more data, the team leader consulted a number of people involved in the process, using structured interviews with individuals and small groups. The team also devised evaluation forms for use with different groups of stakeholders. The number of reviews carried out on time was monitored, and a bar chart (Figure 4.7: Quarterly review of care plans against agreed quality requirements) was drawn after auditing a sample of case files against quality criteria.

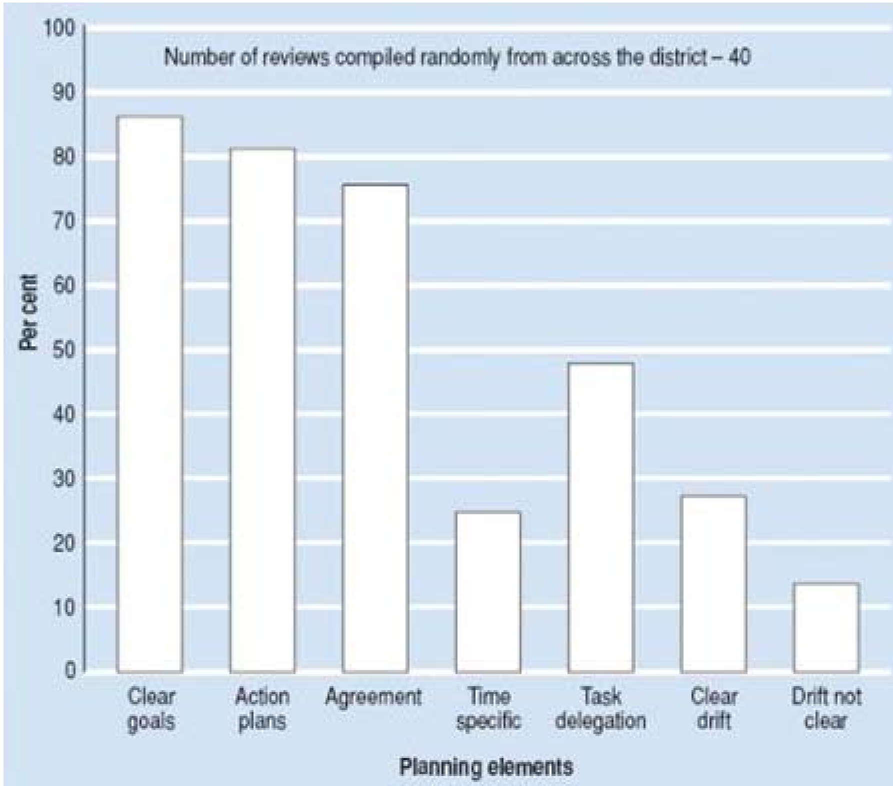

Figure 4.7 - Quarterly review of care plans against agreed quality requirements

The data collected by the team, as well as the problem-solving process they went through, helped them to explore solutions to the quality problems in their work.

UNIT SUMMARY

In this unit we have focused on effective management of the routine activities of a project. I began by considering what a manager can do to ensure that tasks and activities start on time. You should now be able to take the steps that are required to implement a project. Appropriate people need to be appointed to teams and to be clear about individual and group responsibilities. The accommodation and equipment must be secured, together with ensuring that the necessary resources are in place to enable staff to start work.

Once work is in progress one of the manager's roles is to monitor the process, to check if everything is running according to the plan. Usually there will be many deviations from the plan, because of the many events that impact on the daily life of a project. It is usually necessary to make adjustments to the timing and scheduling of activities, and also to the provision and flow of resources. These changes need to be noted in the plan, so that the overall progress towards objectives can be reviewed.

Ways have been discussed in which stakeholders can be kept informed about progress. There are often many different types of stakeholder with different concerns. It is often necessary to use different ways of communicating with these groups to ensure that they support the project or, if there is any conflict, that stakeholders do not present barriers to progress

Predicting, identifying and tackling problems which arise during the life of a project has also been covered. The risk log provides a framework that can be used to make regular checks for potential problems that were predicted in the earlier stages of the project. I identified stages of a project that often present risks. I introduced some techniques that can help identify the causes of problems, including a set of questions to ask before a decision is made and the use of fishbone diagrams and histograms. In addressing risks and problem areas managers must decide how to adjust the plan so as to keep the necessary balance of time, budget and quality, and to ensure that the objectives of the project are achieved

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UNIT FIVE - COMPLETING THE PROJECT

INTRODUCTION

In this unit, we explore some aspects of bringing a complex project to completion. There are a number of things to consider in the final stages of a project. It is very important to ensure that the goals of the project have been achieved, and that all the outcomes and deliverables have been handed over to the sponsor (or that any discrepancies have been addressed). Handover can involve different types of presentation for different types of outcome. There may be a physical object to handover, but other outcomes might include, for example, training to enable staff to use new technology or processes. The way the outcomes are delivered will also vary according to the type of project. In any case, there will need to be agreed processes for resolving any difficulties encountered at the point at which control and responsibility are handed over to the owners of the project.

Completion of a project is often followed by an evaluation (although evaluations can also take place during the life of a project).

We shall consider how different types of evaluation can contribute to managing a project. Evaluation can be expensive, but there are a number of ways in which it can be focused and planned so as to avoid unnecessary expense. Evaluation enables us to learn from studying what has happened, and we conclude this unit by looking at ways in which you can plan for personal development so as better to manage future projects.

This material is from our archive and is an adapted extract from *Fundamentals of Senior Management* (B713) which is no longer taught by The Open University. If you want to study formally with us, you may wish to explore other courses we offer in this subject area.

UNIT OBJECTIVES

At the end of this unit you should be able to:

1. explain the key components of project closure and their importance;
2. plan an effective project closure;
3. ensure that the project activities have been completed;
4. be alert to problems that may need to be resolved at the closure stage;
5. contribute to evaluating a project; and
6. plan personal development to improve your performance in managing projects.

READINGS

No required readings for this unit. It is recommended you review the PMBOK chapters already covered.

ASSIGNMENTS

Individual and reflective activities are embedded in the unit discussion. You should consider the activity and record your observations or comments in your course journal.

In addition your instructor will provide an assignment that you must submit to demonstrate comprehension of the content presented in this unit.

Handover and Delivery

The outputs of a project should be defined at the planning stage, including any conditions that will be required for a smooth transfer. Each outcome should be formally handed over to the sponsor who should confirm their delivery ('sign them off') so that there is no dispute about whether outcomes have been completed.

A closure list is likely to have sections to include the following groups of tasks, but each project will have different features to consider. A list of suggested areas to consider can be seen below:

- ✓ Handover complete for all deliverables.
- ✓ Client or sponsor has signed off all deliverables as accepted.
- ✓ Responsibility for future maintenance agreed.
- ✓ Final project status reports complete.
- ✓ All financial processes and reports complete.
- ✓ Project review complete.
- ✓ Staff performance evaluations and reports completed.
- ✓ Terminate staff employment on project.
- ✓ Terminate all supply contracts and processes.
- ✓ Close down site operations and accommodation used for project.
- ✓ Dispose of equipment and materials.
- ✓ Announce completion of project (internal, external and public relations contacts).
- ✓ Complete project file and store appropriately.

What is Handed Over, and When?

Not all handovers are at the completion of a project. In some projects there might be several different types of handover, which happen at different stages. For example, the Tate Modern was built within the shell of a disused power station, and an early handover point was when the building was purchased and became the property of the Tate Trustees. Such a handover is significant when a building may present long-term problems (in this case, contamination from its previous uses).

Example 1: Risk Assessment in Handover

When the Tate negotiated with the original owners of the Bankside Power Station, Nuclear Electric, they insisted on Nuclear Electric handing over a decontaminated building, one that was safe for the construction team to work in. Essentially that meant asbestos-free, since the major contaminant of the old building was the asbestos that had been used throughout to insulate various items of plant, ducts, pipes and internal walls. It's only comparatively recently – in the last twenty years or so – that the hazards of asbestos have become apparent. Old construction hands tell stories of workers sitting on beams covered with asbestos dust while eating their sandwiches. Now it's accepted that even a single fibre of certain types of asbestos can initiate a cancer if it lodges in some bodily tissues.

The Tate's agreement with Nuclear Electric required compensation to be paid if any asbestos was later discovered once the building was handed over, since such a discovery was bound to delay the works. The deplanting team sent air samples off on a daily basis and received reassuring answers, but unfortunately there was asbestos that no one suspected lurking like a time bomb behind columns, in corners of the chimney and high in the roof.

(Sabbagh, 2000, p. 76)

If the project involves preparation and handover of a physical object, there may be a number of contributing components and, possibly, subcontracted elements. The project plan should have identified the various elements and the details of handover arrangements for each stage, if there is a sequence of tasks. The schedule will have identified the sequence in which tasks need to be completed. Hopefully, the risk register will have identified the risks associated with each handover and a contingency plan will have been made for each major risk. Handovers should be identified as key stages on the Gantt chart.

Acceptance criteria for ‘hard’ projects, where the output is highly specific, may be fairly straightforward. These arrangements can be quite similar to common routine arrangements for confirming receipt of items by matching delivery notes with order forms. For example, the delivery and instalment of a new computer system should have been tested under normal conditions, as evidenced by signed-off documentation.

Acceptance criteria for ‘soft’ projects may be more problematic. To illustrate this, let us take a voluntary organisation setting up an initiative in secondary schools to do preventive work on bullying. The project plans to run a series of events intended to develop awareness and to establish a new procedure for dealing with bullying. The handover phase in projects of this kind may include activities and processes that enable the project's sponsor to take over responsibility on a long-term basis. A definition of completion for this type of project might be ‘achieving the active, successful management of the activity by the project's owners, users or stakeholders and withdrawal of the project team’.

Any support that will be required as part of the project completion should be planned, and the person responsible for providing it should be identified. In some projects (for example, many IT projects) there may be an integration or configuration period, in which the client gradually takes over the long-term maintenance of the project outcomes. Again, it is important to have clear agreement about how the project itself will be concluded and handed over, even if there is a separate agreement about future support or training related to the outcome.

Once a handover process has been agreed, a meeting of the project team to prepare for the handover should be arranged. This is the time to make sure you haven't forgotten anything that might lead your sponsor to withhold acceptance. It is helpful to draw up a list of outstanding tasks, and to make sure that someone is responsible for doing each of them within a specified time-scale. These might include minor tasks from early stages of the project which were not critical to progress and have been left on one side.

Example 2: Cracks in the Walls

The gallery walls in the Tate Modern had been designed to be very smooth and white, so that they would provide an unobtrusive background on which to display the art. However, as curators were hanging paintings in the galleries, they became concerned about the number of cracks that were appearing in the walls. '…with such a short run-up to opening, we can't really hang major paintings and then un-hang them to Polyfilla gaps behind them. Obviously, whenever you hang a gallery you need to go in afterwards and paint out the art handlers' finger marks and tidy up and all that stuff, but you want to keep it a kind of clean cleaning, not a dirty cleaning. We certainly can't do building work. And my concern is that there seem to be a number of different problems, none of which come within the remit of one single person. Most of the teams here are actually working on the building, not on the display, and it's that transitional moment where suddenly our deadlines kick in, and if we don't have the building, then we won't have a display.'

(adapted from Sabbagh, 2000, p. 315)

The significance of stakeholders is well recognised and there are many ways of analysing the impact of their influence and needs. Either of two simple approaches will probably suffice in order that the project manager can recognise the implications of stakeholder influence during the handover period:

(a) draw a 'star chart' showing the stakeholders around the project:

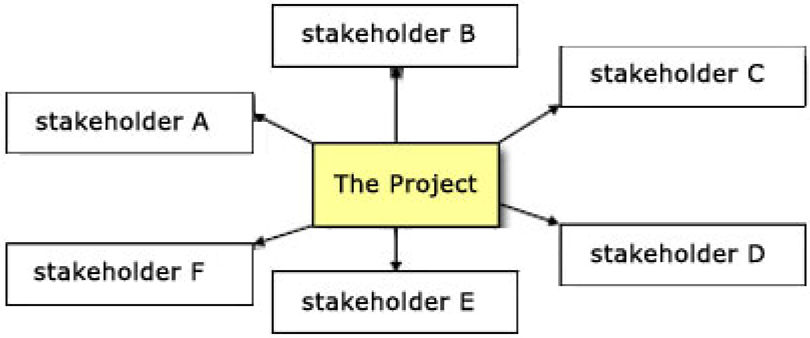

Figure 5.1 - Stakeholder analysis and the power/interest – star chart

The arrows can be two-way as well as one-way and the expectations can be marked on the arrows, which can be of different thickness. Amend the chart as necessary in order to depict clearly the influences on the particular project.

or (b) draw a matrix and locate stakeholders in it.

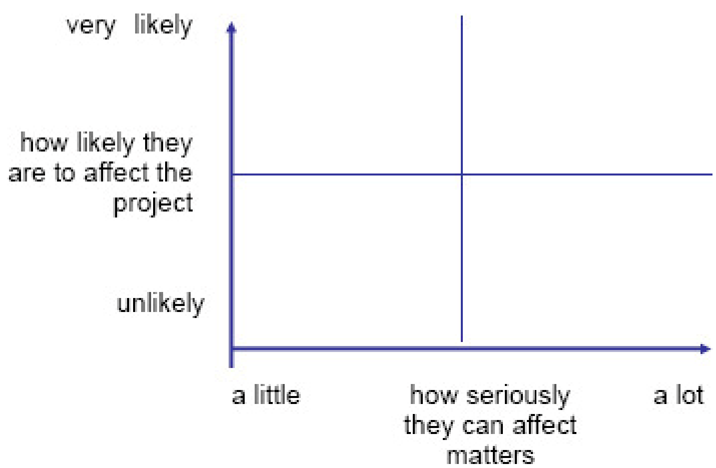

Figure 5.2 - Stakeholder analysis and the power/interest – matrix

As we have seen, a communications matrix is a way of noting who needs to be consulted and at what stage. It can also be useful at the handover stage. It can be a formal chart or rough notes, but its purpose is to help minimise the problems that arise when people feel they have not been consulted. The table below shows an example.

A communications matrix

Stages	Operations Director	Area Manager	Site Manager	Marketing Director	Equipment Suppliers	Fittings Suppliers
Initial plan	✓	✓	✓	✓	✓	✓
After first site meeting		✓	✓		✓	✓
Operation of unit agreed	✓	✓	✓		✓	✓
On-site work nearing end	✓	✓	✓	✓	✓	✓
Start operations	✓	✓	✓	✓		

Delivering with Style

You can deliver the outcomes agreed with the minimum of fuss or celebration – or you can deliver with style. A project that is delivered so that it meets the outcome requirements exactly and is on time and within the budget allowed will usually be well received.

In many projects the moment of final delivery may not be clearly defined, as different elements may have different times and modes of delivery. However, each delivery offers an opportunity to please the client by making the presentation part of the successful outcome. For example, when a new suite of rooms that have been fitted out for use as offices are handed over to the client, there will be only one chance of making a first impression! Suppose the furniture is assembled and in place, but the carpets are covered in dust and wrappings from new furniture left in a pile by the entrance. How much better it would have been to have spent a few minutes vacuuming the carpet and clearing away the debris – and to have placed a few plants or vases of fresh flowers on the shelves or desks.

Activity 5.1

Imagine that you are leading a project in which you have been contracted to deliver a series of training events within a small organisation. What might you do to demonstrate to your client that you have successfully achieved the outcomes required? Record your response in your course journal.

Discussion

You might have thought about providing the client with evidence that the required number of staff had attended the training events, and had successfully passed the tests that you had set; and that the task had been achieved to the required quality standards within the time-scale set and the budget agreed. However, did you consider how you might have involved the client a little, and shared some experience of the outcomes rather than simply supplying a paper record? For example, the staff have been trained to do something new, so you might provide an opportunity for the client to see their new performance. This could be done in the concluding hour or so of a training event, if the client or another senior manager would agree to watch an end-of-course presentation in which the staff demonstrate their new abilities. You might also have thought of inviting the sponsor to present certificates.

Presentation is about creating an impression. Handover events can create a favourable or unfavourable impression.

The successful completion of a project is the purpose of the whole thing – but, somehow, the final stages can often be an anticlimax, or the unwelcome disbanding of a happy team. Ideally, the project conclusion will be marked by a satisfied client, a proud team and pleased stakeholders. The conclusion can be planned as a celebration, to take place whilst the project team is still intact. Planning to celebrate success demonstrates confidence in the project, and can be indicated as a milestone from the early stages of the plan. You could, of course, plan to celebrate achievements at each milestone review, but a final party can be the focus of successful project completion.

Planning celebratory events can be a motivating factor for the team, and can help to keep up momentum in the later stages of a long project.

Example 3: Keeping up the Momentum in a Long Project

Three years is very long in the world of IT projects, where staff seek variety of work and enjoy the challenge of stretching themselves to acquire new skills in the ever-expanding world of technology. Projects that continue for this length of time would witness career changes, developments and setbacks. People may change employers, may emigrate to far-away places or may face all kinds of changes of fortunes. The project management has to understand and deal with these developments to ensure that the consequences for the project are kept to a minimum and to maintain motivation and commitment in the rest of the team.

We had planned to achieve a major milestone approximately every six months. Every time we reached one of these milestones we would organize a party where we let our hair down and simply enjoyed ourselves. In some of these parties, we would present each team member with a little something as a souvenir to remember the occasion. Once we presented a T-shirt with the project logo while another time we would hand out certificates for the contribution the team had made.

In each one of these parties the team would hear a new piece of information on the final project success party, which was a closely guarded secret within a small group of individuals. Some team members were almost obsessed about trying to find out more about this party, giving us countless opportunities for some gentle teasing. What form the party would take, where it would be, who would be present and so on were some of the questions that would be asked. The only piece of information that was available was the date, which was set to be just two weeks after the official end of the project.

(Craig and Jassim, 1995, p. 163)

There are many other ways of signalling success as a project progresses. It is often effective to keep everyone who has an interest in the project informed about successes, through a news-sheet or public announcements. This also gives an opportunity to acknowledge the efforts of the team and to contribute to keeping morale high.

Completing the Project

As handovers can take place at many stages – not just the concluding stage – of a project, handover is not, in itself, completion of the project. If the project's objectives were clearly set out, the completion or acceptance criteria should flow logically from them. Such criteria might include the following:

- the key stages and milestones are all completed;
- the outputs or outcomes meet the quality specifications;
- the project sponsor has accepted and signed off the project; and
- the project has been completed on time and within the budget anticipated.

Closure Tasks

The closing stages of a project need as much, if not more, attention as the early stages. Many of the final tasks in a project may seem rather tedious ‘housekeeping’ once the project's main purpose has been achieved. Nevertheless, there are a number of actions that must be taken to close the project and ensure that any necessary maintenance arrangements have been made.

- Make sure that all project staff actually stop work on the project.
- Make sure that payments for time and expenses are completed and discontinued.
- The final review of the project must be arranged, when all of the learning that has been gained during the project is gathered together and presented.

One key task is to ensure that the client formally ‘signs off’ the project, to confirm that it has produced the outputs and outcomes that were required. There will be documents to complete to formalise the successful conclusion, and to confirm that all contractual requirements have been met. If this formal process is not gone through the client may expect ongoing response and support that should have been treated as ongoing maintenance, and not part of the project itself.

Ensure that all expenditure is accounted for in the final statement of costs. This is particularly important if the client has authorised additional expenditure that was not part of the original estimate. Clients do not always realise the extent to which small additional items of expenditure can add up to substantial sums. There should be a clear record of purchases made, shown through orders, delivery notes and payments against invoices. Any discrepancies should have explanations, supported wherever possible by evidence: in some cases it might be necessary to hold a formal financial audit. The financial accounting must be completed, and some arrangements made for outstanding unpaid invoices or left-over fixed assets or materials.

Identify the records that need to be kept beyond the life of the project, and to arrange for their storage in a way that will enable retrieval in future. These can include different contracts, letters, minutes of meetings, different versions of the project plan, staff records and other communications to be filed for future reference.

Closure Checklists

It is helpful to consider closure as, in effect, a mini-project, and to plan for it as a distinct set of activities. We have seen that, once the project has been recognised as successful and all of the key milestones have been achieved, reaching the final milestone – closing the project – can seem an anticlimax. One way to focus attention on the work that still needs to be done is to prepare a detailed checklist.

Activity 5.2

Note in your Course Journal the key headings that you think should feature on a project closure checklist.

Discussion

Your list might include key deliverables, and checking that all the associated tasks had been completed to ensure that the purpose of the project had been achieved. Another main heading might include the ‘housekeeping’ elements: completing financial records, and any outstanding matters relating to staff and to the materials and equipment used. There could also be headings to remind you to stop all activities, supplies and processes related to the project; and to determine who should carry out each task, identifying the date by which it should be completed.

Like all aspects of managing a project, management of the closure can be planned, and the tasks can be delegated. A detailed list of closure tasks will be even more useful if it has columns showing who is responsible for each task, and the dates by which actions can be started and should be completed. There may be a need for scheduling, even at this stage, to ensure that tasks are sequenced and prioritised appropriately. Each project will have different requirements, but closure lists are likely to include all or most of the following:

- handover complete for all deliverables;
- all deliverables as accepted signed off by client or sponsor;
- final project status reports complete;
- all financial processes and reports complete;
- project review complete;
- staff performance evaluations and reports completed;
- staff employment on project terminated;
- all supply contracts and processes terminated;
- site operations and accommodation used for project closed down;
- disposal of equipment and materials;
- announcement of completion of project (internal, external and public relations contacts); and
- completion and storage of project file.

If the manager of the project moves on to another assignment before all these tasks are complete, a list showing appropriate responsibilities will provide a framework for effective completion.

Closing the Project

Closing a project can be quite an emotional experience for team members who have worked together for some time, particularly if close bonds have developed. The manager of a project has some obligations to staff who have worked for some time on it. Build into the plan a closure interview with each member of staff, so that their contribution can be formally recognised and recorded. Staff may need help to recognise the skills and experience that they have gained and how these have been evidenced in their contribution and achievements. They may welcome a signed record of their achievements, and some will need references to progress to their next jobs. Some staff will need to leave before the project is fully finished, and some will not have jobs to go to. The project is not finished until the closure has been managed and it is helpful if the person managing these final activities is not worried about his or her own future. Once again, planning well in advance can reduce the stress of the final stages.

Project Debriefing

Individual interviews with key members of the project team, for example the managers of key stages, can encourage them to evaluate their performance and identify what they have learned. A structured debriefing process can be helpful, to include stakeholders as well as all the project team. This may take the form of a series of meetings, which draw conclusions about overall project performance and constraints, identify and review any new ways of working that were developed, and consider what could have been done differently. These can take the form of after action reviews.

The Closure Meeting

The final meeting is a time for celebrating successful completion. It could have a similar format to the launch meeting, and involve many of the same people. It might include:

- reviewing the outputs or outcomes;
- confirming the arrangements for any follow-up work;
- thanking the team, the sponsor(s) and the stakeholders for their support; and
- presenting the completion report for approval and sign-off.

Closure events may vary according to the nature of the project. Consider the following examples.

Example A

The project purpose was the development of a joint commissioning strategy. The formal ending of the project was the launch of the jointly agreed strategic plan that would be implemented by the joint commissioning team.

Example B

The project was to expand a business unit so as to take on the management of a new property which would provide additional services in a new geographical area. The end of the project was marked by a formal opening ceremony.

Example C

The project was to develop a new information system. At the final meeting sponsors were required to sign documentation to record their acceptance of the system and agreement that all the work had been completed as required.

Problems in Closure

Projects do not always go according to plan. If problems develop during the closure period there are particular difficulties. The following story is told by an integration manager of an IT project.

Activity 5.3

Review this example and comment in your course journal on what you think the problems were.

We had just completed the coding and testing in our team when the project manager was taken away to start up another project. I was asked to take over the project, and my manager explained that this was a straightforward task – merely an integration activity. The other two teams had nearly finished and I was available. I didn't worry about the responsibility because I had been the integration manager of my previous project, and that had gone smoothly.

It took me a couple of weeks to get used to the reporting system and so on. The previous project manager gave me some help but he was getting increasingly busy with his new project. Finally I was in a position to understand what the other two teams were doing. My first impression was not very encouraging.

Total system integration was due to start but all the objects that were being built by the test team kept displaying errors. By then I was really worried. The previous project manager had left, so I decided to start the overall system integration using a small team of the strongest team members we had at the time. I hoped that we would be able to sort out the last few errors during the integration.

When we first put the whole system together I was appalled. I knew it was going to be bad but I hadn't realized it would be that bad. The system failed every test case we had for the integration. Most of the problems were occurring in the parts built by the team members who had already left. The team got frustrated because of all the extra time they had to spend investigating these problems and resolving them.

We tried to get some of the team members who had left the project to come back and help us, but this was almost impossible. Many of the problems we encountered needed days to resolve. We finally decided to cut our losses and rewrite the worst parts of the software. By then we were running more than two months behind, and rewriting those parts cost us a few weeks more. The system was delivered to the users over three months late.

It was a bad time for all of us, made worse by the realization that these problems could have been avoided if integration had been properly planned at an early stage. And at the time I felt very isolated – it felt as though nobody was listening to us.

(Craig and Jassim, 1995, pp. 155–6)

Discussion

Many of the problems experienced in this example arose from poor monitoring and control in earlier stages of the project. Monitoring should have raised awareness of the extent to which errors were occurring. Each element could have been tested for errors, and corrected before being handed over by the team that had built it. The project could have been planned to include more time at earlier stages to ensure that the separate elements integrated successfully. Planning could have emphasised the retention of project staff until the work was successfully completed so that new staff did not have to spend time learning what had already been done.

If the project outcomes include technological systems that need to be used by people who were not part of the project team, the handover needs to include a strategy to ensure that users can operate the new system. The new system also has to work effectively alongside any other systems in use.

Project Drift

Project drift is a common problem when one project leads into another without a clear break, or when extra tasks, which were not identified at the beginning, are added to a project. If possible, significant changes of the latter kind should be treated separately as a follow-on project: otherwise they may not be properly resourced and this can have adverse consequences for motivation of the project team.

Example 4: A drifting Project

The planned closure of a local authority service centre was closely linked with a community development initiative. The intention was to give the empty building to voluntary sector organisations in the area, for use as a community centre.

The transfer of services out of the building took place as planned but, at the point where the project manager was due to close the project by handing over the building to the community steering group, the building was taken back into use by the local authority to provide emergency accommodation for refugees. The project manager had to leave the project at this point, although the project was not fully completed.

To allow the project manager to return to other work and to avoid drift, the emergency use of the building was dealt with by another manager and the original project was deemed to have closed. The community development initiative was put on hold with a view to appointing a new project manager to complete the task when the building became available again.

Figure 5.3 - A drifting project?

If the drift has caused the situation not only to be unresolved but also with to have the prospect of continuing indefinitely, it may be impossible to carry out the normal closure activities.

If the project seems impossible to complete fully, it might be possible, and helpful, to consider closing off the phase of the project that has been achieved. For example, you might hold a review to establish what could be considered finished and what needs to remain in place to allow the next stages to progress. It is often helpful to use such a review to close off what has been done so far. This may allow a fresh start, to take on board new possibilities as if this was the beginning of a new project. This approach helps stakeholders to revisit fundamental questions about the purpose and goals of the project, to redefine the anticipated outcomes, and to set new boundaries for timescale, budget and quality requirements.

Evaluating Different Stages of a Project

A project is often shaped through discussion among those developing the vision and direction of the project. They may agree in general terms about what is to be achieved, but have to make a number of choices before deciding how to proceed. It may be important to allow time for different views to be heard and considered, and for attitudes to change and – hopefully – converge.

Example 5: Developing the vision of the Tate Modern

The Tate Gallery in London had successfully established outposts in St Ives and Liverpool to make modern and contemporary art accessible to people outside London. However, another concern developed during the 1980s. The Tate had always had two focal areas, a historical collection of 400 years of British art and the major British collection of international modern and contemporary art. The collections were far greater than the display space, and so much was in permanent storage. The Trustees of the Tate had begun to feel that there should be two separate buildings and the approaching Millennium offered the possibility of attracting funding.

The key figure at the Tate during the 1990s was its director, Nicholas Serota. It was he who initiated the project, although all key decisions were made by the Trustees. One criterion everyone thought important was that any new site should be accessible to Londoners and visitors to the city. However, large enough sites in central London were rarely available and very expensive. It was important that the site should be impressive to enable the Tate Modern to rival other new galleries, for example, the Guggenheim in Bilbao and the Getty in Los Angeles, both of which were in new and striking buildings.

Peter Wilson, the Tate's Head of Gallery Services at the time, noticed the empty Bankside building when the Trustees were considering the possibility of using river transport to the former Billingsgate Fishmarket, that was a potential site. Other Tate directors went to look at the disused Bankside power station but thought that it looked too big. Serota became intrigued and tells the story that he stopped off on his way home and walked along the length and width of the building. He said, '…it occurred to me that if I was in Frankfurt or Cologne and saw this building and was told that it was being converted to be a Museum of Modern Art, I wouldn't be surprised.'

Many disagreed. Michael Craig-Martin was a painter and a Trustee who said, 'I much preferred originally the idea that it was going to be a wholly new building, and I fully expected that it was going to be, until we went to see Bankside.' He was impressed by the size of the building and the space that would be available. 'The most important thing for art is to have plenty of space. And for an institution whose role is to expand, to be able to have a building which allows for future development is a fantastic thing for a museum.'

There were also disadvantages. A new building could have made a dramatic architectural statement and attracted funding and publicity. The 1950s Bankside power station looked forbidding to many people. Serota argued that the building would allow them to: 'bring together a mid-twentieth century vision and a late twentieth-century vision.' It was not easy to reach, although set in an imposing site on the river opposite St Paul's Cathedral. The area around the power station was unattractive and run-down, but the local authority were very supportive of the project because it would bring training and employment to this deprived area and later a constant stream of visitors.

(Adapted from Sabbagh, 2000, pp. 4–10)

Many stakeholders may become involved in evaluation in the early stages of a project, in imagining what it might mean for them and how it might present advantages or disadvantages. The anticipated impact of the project can be usefully evaluated in the early stages, to ensure that the investment of energy and resources can be expected to achieve the intended results.

Evaluation During Planning Stage

Evaluation at this stage is usually concerned with whether plans represent good value for money. It may be appropriate to evaluate inputs to the project, to ensure that their quality and quantities are sufficient to achieve the objectives. In large building projects, many specialist tasks are subcontracted. Specifications are developed, and potential contractors are invited to tender for work. The element of competition can lead to problems if some tenderers are over-anxious to win contracts. They may be tempted to offer very low prices or attractively fast times, making no allowance for setbacks or delays outside their control. If they fail to meet their deadlines there may be a knock-on effect, when other tasks cannot start till they finish. Those evaluating tenders need to be able to estimate the budget and timing required for a particular piece of work: the cheapest is not necessarily the best, nor the one that promises the fastest completion.

Example 6: The Steel Contract for the Tate Modern

The steel contract was just one of a hundred or more contracts that had to be organised. Preparing a bid might take several weeks of concentrated work for a potential contractor and a contractor might tender for many jobs and only win one. When contractors work on a number of different projects they have to schedule their own resources to fit with the needs of each project, but they also have to try to ensure an even flow of work. As one contractor said, 'It's absolutely vital to the well-being of this company. We desperately need a job of this size in the next three months. We're bidding four at this very moment, and we have to get one of them.'

The steel contract included the purchase of the steel, fabrication of each piece prior to installation at Bankside, erecting the steel framework within the existing shell of the building and ensuring that the concrete base was strong enough to support the new structure. There were a number of elements that contractors were worried about, in particular the need to work with concrete and a wooden balustrade on a staircase.

On the day that the tender documents were due to be evaluated, the news that asbestos had been found in the building had just reached the committee. This meant that there would be a considerable delay to the project while the contamination was cleared from the site. This news may have influenced the decision.

The committee used a procedure that they had used successfully to evaluate other tenders. They opened each bid and noted the bottom-line figure on a summary sheet. The highest bid was £7,750,816 and the lowest was £5,489,840. They then looked at the cheapest to find out why it was so much lower. They discovered that the price for the steel itself was too low because they had priced a lower grade than had been specified. They had also omitted to price the wooden balustrade. When these elements had been added, the price of this bid came in line with several others. Many other adjustments were made to bids in a similar way.

A shortlist was made of contractors to interview and there was considerable concern to ensure that the contractor chosen should be able to deliver the work within the price agreed. However, price and the quality of materials were not the only considerations. The contract was eventually awarded to a contractor who had reduced the price by making a change to the schedule that promised to reduce the timescale by a quarter. This, of course, was very attractive in the light of the current delays. Unfortunately, as the work progressed, the promised saving was found not to be fully achievable.

(Adapted from Sabbagh, 2000, pp. 125–147)

Even when a tendering process is carried out with care, to ensure that the contract results in a partnership that will be successful for everyone, it is impossible to predict all the potential risks. Some contingency sum might be agreed, but many contracts also incorporate a process for negotiating liability for additional costs, when these arise unexpectedly.

Risk is the chance of something occurring that has an adverse effect on the project. Many risks can be foreseen and identified. For example, if the project involves development of computer-based systems, time needs to be allowed for 'de-bugging' once the systems are installed.

The main categories of risk can be summarised as follows.

Main Categories of Risk

Physical	loss of or damage to information, equipment or buildings as a result of an accident, fire or natural disasters
Technical	systems that do not work or do not work well enough to deliver the anticipated benefits
Labour	key people unable to contribute to the project because of, for example, illness, career change or industrial action
Political/Social	for example withdrawal of support for the project as a result of change of government, a policy change by senior management, or protests from the community, the media, patients, service users or staff
Liability	legal action or the threat of it because some aspect of the project is considered to be illegal or because there may be compensation claims if something goes wrong

In view of all these possibilities, the careful examination of the question below, early on in the project, can save a lot of (though not all!) problems later:

'What could go wrong in this project?'

Having identified potential areas of difficulty you can then examine these by asking, in respect of each one:

1. How likely is this to happen?
2. How serious would it be if it did?

Having raised these questions, you can then consider what you might do either on your own or with a team. Some of the less likely possibilities and those that would really just be minor irritants may not need a lot of attention. Others could be seen as quite critical to the success of the project and you can, at an early stage, plan what to do if the worst happens.

Evaluation During Implementation of a Project

At this stage the project activities are monitored to determine how their timing, quality and cost match the plan. The results of this monitoring are reviewed to see whether the plan needs to be modified. New environmental conditions may indicate the need to change the organisation's strategic direction. It might be necessary in that case to re-align the project, so that the outcomes relate to the new direction. In some cases it may be necessary to abort the project, if it is no longer appropriate or likely to make a useful contribution.

Incorporating this kind of evaluation as part of the project plan (formative evaluation) can considerably enhance the likelihood of achieving useful outcomes. If formative evaluation is to take place, it should be integral to the project's design. It can facilitate a more organic change process, with testing and refining built in as the project progresses. But formative evaluation can increase the complexity of a project, because of the need to timetable an extra set of deadlines. It will also add new items to the risk log, particularly the risk of delays. If formative evaluation results in decisions to make significant changes to the project, it may lengthen the time-scale, increase the budget or necessitate additional quality measures.

Evaluation at the End of a Project

Different types of evaluation may take place at the end of a project. A common one is determining the extent to which the project outcomes have been achieved. This is often done in a meeting of the sponsor, key stakeholders and project team leaders, and sometimes informed by reports from key perspectives. An evaluation of this nature may be the final stage of the project, and the main purpose might be to ensure that the project has met all of the contracted expectations and can be 'signed off' as complete.

A different type of evaluation may be a review of the process, with the purpose of learning from experience. This is often done by comparing the project plan with what actually happened, to identify all the variations that occurred, in both processes and outcomes. The aim is to draw out how to avoid such variations in future projects or how to plan more effectively for contingencies.

Although monitoring takes place throughout a project, evaluation based on the information thus gained is likely to happen at the end of the project, in a final *summative evaluation* which identifies:

- what the project has achieved;
- the aspects of the project that went well;
- the aspects that went less well; and
- things that you would do differently next time.

Some of the key questions to consider in carrying out an evaluation of the planning and implementation of a project are:

- What went well and why?
- What helped to make the project go smoothly?
- What should we avoid doing during future projects?
- What difficulties did you find in carrying out the tasks?
- What was helpful about the project plan?
- What was unhelpful about the project plan or hindered the work?
- Did anything else help to make the project run smoothly?
- Why do you think we had that problem with x?
- Did anyone outside the project team contribute towards achieving the project?
- Did anyone or any other departments hinder the project activities?
- Did we accurately predict the major risks and did the contingency plans work?
- Was the quality maintained at an appropriate level?
- Was the budget managed well and did we complete the project within the budget?
- Was the timing managed well and did we complete the project within the time-scale?

A list of questions (adapted from Elbeik and Thomas, 1998) provides a framework for planning and assessing yourself in terms of your achievement in managing a project:

1. Were the project objectives achieved?
2. Has your sponsor’s problem been solved or addressed?
3. What could you have done differently to improve the final result?
4. What do your colleagues feel about the results of the project?
5. How does your sponsor’s staff regard your involvement?
6. How good is your current sponsor relationship?
7. Will your sponsor recommend you to their colleagues?
8. Has your sponsor asked you to undertake additional work?
9. Did the project stay within budget?

The aim of this type of evaluation is to understand and learn from the reasons for success or failure, so that we can perform better in future.

Example 7: Lessons from the Tate Modern

The project managers who had worked on the Tate Modern discussed the lessons that they had drawn from this experience.

One of the notable aspects of the project had been the extent to which good relationships had been maintained between the Tate and its partner organisations. Towards the end, the Tate had even given everyone blue hard hats with ‘Tate’ on them to try to break down the ‘them and us’ feel. Comments made by the project managers included:

‘I've probably learnt a hell of a lot because from an architectural point of view anything this scale only comes to you in your life once. It's been like a whole life really, because you sort of start off a teenager, and you end up somebody completely different at the end of it. You have to learn lots of skills, dealing with characters like these and they in turn have had to deal with people like us, who are not necessarily the easiest of architects to be around.'

'Three or four key issues that I look back and think we should have done differently – we should have been more forceful in our advice to the client – as a team – about the implications of taking on Level 4 and the fit-out at the stage we did. Because when we took those things on, we were looking at them, to be honest, with rose-tinted glasses; we were still struggling along from the problems we'd had with the steel frame, et cetera, and then we took on another £10–£15 million pounds' worth of work, and no project could take that, not with a team that's already struggling.'

One offered some advice for the construction managers on how to deal with the architect: 'Don't be afraid of him. … I think now people understand the reasons why we make decisions early on and have to revisit things, and I understand all of the issues why construction management is the way it is, but I think they need to absorb us more into the equation sometimes, because we're not that bad, you know. We do make compromises.'

'Where we fall over as a team is in the design detail, and it's the design detail that makes it work. It's generally there in the architects' heads, but they need to be able to understand the full integration of not just the architectural design, but all the services content that goes with it. And that needs to be sorted out a little earlier, because a lot of the problems, and the challenges, that we've had is being able to overcome those as we've gone through the project, and sometimes that's too late. When you're out in the field, that's too late.'

On the Tate as a client:

> '*I think they've been an absolute joy to work with. They understand about people. Our business is about delivering what they require, what they want, and trying to make their dreams into realities. They understand not just the views of the architect; they understand the construction elements, and they understand some of the detail as well.'*
>
> *'Sometimes we give them advice, and they're aware of the implication but they choose to ignore it – that's the client's prerogative. But generally the client goes into these decisions with his eyes open, and will live with it, you know. And the great thing about them, generally, is they're not looking for scapegoats; I go to their board meetings, and there's problems to talk about but they approach them in a positive manner.'*

(Sabbagh. 2000, pp. 322–325)

At the end of a project it is possible to evaluate the extent to which each stage went as planned, and explore the implications of any deviations from plan. Evaluating the separate stages is likely to produce information that can be used to improve the management of future projects.

It is also possible to take a broader view, by evaluating the use of projects throughout an organisation and the extent to which their outcomes contribute long-lasting value. This type of evaluation might be very important in reviewing the way an organisation decides on projects in which to invest. British Petroleum established an audit process to carry out post-project appraisals:

In talking with business people from large British and multinational corporations, I have found that few companies examine their completed projects in any depth. Most audits are narrowly focused attempts to check that proper controls are in place while a project is in operation. When our managers audit an oil refinery, for example, they gather detailed information about how the oil and gas is collected, measured, shipped and accounted for.

A post-project appraisal, however, takes a much larger view. It first looks at the big questions: Why was the project started in the first place? Is it producing as much oil as the proposal predicted? Is the demand for oil at the forecasted level? Did the contractors deliver what they promised? Does the project fit well into BP's overall corporate strategy?

(Frank Gulliver, 1987)

This type of evaluation seeks to improve the way future projects are chosen, rather than how they are managed.

Designing a Formal Evaluation

Reviews and informal evaluations will often be sufficient, but sometimes a formal evaluation will be needed. A formal evaluation can be both time-consuming and expensive, and so must be carefully planned. There are many different ways of carrying out such an evaluation, and the process chosen will influence the attitudes of those involved and whether their response to the project is positive or negative.

There are a number of decisions that have to be made in designing an evaluation.

1. Decisions about goals: what is the evaluation for? who wants the evaluation?
2. Decisions about focus: what is to be evaluated?
3. Decision about methods: how and from what sources will the information be gathered?
4. Decisions about evaluation criteria: how will criteria be set, and by whom?
5. Decisions about process: who will do the evaluation, and who will manage the process?
6. Decisions about application: what use will be made of the findings?

All of these decisions relate to the overall purpose of the evaluation; and, if each is considered as part of the design process, the answers will enable the process to be planned.

Planning an Evaluation

The evaluation should have clear aims and objectives. It is also helpful to decide where its boundaries should lie – how much or how little is to be evaluated?

Activity 5.4

If you were part of a group planning to evaluate the planning and implementation stages of a project, what questions would you recommend should be asked? Record your questions and discussion in your course journal.

Discussion

Some of the key questions in evaluating the planning and implementation of a project are:

- What went well and why?
- What helped to make the project go smoothly?
- What should we avoid doing during future projects?
- What difficulties did you find in carrying out the tasks?
- What was helpful about the project plan?
- What was unhelpful about the project plan or hindered the work?
- Did anything else help to make the project run smoothly?
- Why do you think we had that problem with X?
- Did anyone outside the project team contribute towards achieving the project?
- Did anyone or any other departments hinder the project activities?
- Did we accurately predict the major risks and did the contingency plans work?
- Was the quality maintained at an appropriate level?
- Was the budget managed well, and did we complete the project within the budget?
- Was the timing managed well, and did we complete the project within the time-scale?

If you plan to carry out this type of evaluation it is helpful to collect the appropriate data when it becomes available. A key decision in the planning stage is who should be involved in the evaluation: in its design and/or its implementation. The nature of the audience may determine how the results of the evaluation are reported and used. The purpose of the evaluation will also influence who carries it out. The outcome of a major publicly-funded project would often be evaluated by an external and independent body, to give the findings. A collaborative project, in contrast, might be formally evaluated by a group of the key stakeholders, each reporting back to their own organisation. An external evaluator may be costly; but an internal evaluation will draw on time and energy that might be better devoted elsewhere. The evaluation's timing may be particularly significant if it is to involve project team members.

Contingency plans indicate what to do if unplanned events occur. They can be as simple as formalising and recording the thought processes when you ask ‘what if …?’ and decide which options you would follow if the ‘what if?’ situation happened. The key points in contingency planning can be summarised as follows:

1. Note where extra resources might be obtained in an emergency and be aware of the points in your plan where this might be required.
2. Identify in advance those dates, which if missed, will seriously affect your plans, e.g. gaining financial approval from a committee that meets only once every six weeks.
3. Know your own plan very well; probe for its weak points and identify those places where there is some ‘slack’ which only you know about …
4. Keep all those involved (including yourself) well informed and up-to-date on progress so that problems can be addressed before they cause too much disruption.
5. Recognise the key points in your plan where there are alternative courses of action and think through the possible scenarios for each one.
6. Learn from experience – sometimes the unpredictable peaks and troughs in activity follow a pattern – it's just that we have yet to recognise it.

The following suggestions for dealing with contingencies were all made by practising managers:

- Break key tasks down to a greater level of detail to give better control.
- Be prepared to overlap phases and tasks in your plan in order to meet time-scales, but give the necessary extra commitment to communication and co-ordination this will require.
- Spend time at the start in order to pre-empt many of the problems.
- Learn from experience, e.g. develop a list of reliable contractors, consultants, etc.
- Try and leave some slack before and after things which you cannot directly control, to minimise the knock-on effect of any problems prior to, or during, such tasks.
- Pull tasks forwards if possible: one less thing to worry about!

Collecting and Interpreting Data

In many projects it can be difficult to make comparisons with anything similar. However, there may be quality standards that can be used for one of more of the outcomes, perhaps alongside different targets for time-scales and resource use. Benchmarks are another possible source of comparative data; they have been established for many processes, and data are available from industry, sector and professional support bodies.

Activity 5.5

A training and consultancy organisation, Ace 1, has been contracted to provide a twelve-month-long development programme for first-line managers. The purpose of the programme is to increase the potential pool of senior managers within the client organisation, to reduce the extent to which they have to recruit externally. You are a senior manager in Ace 1 and will be managing the project. You have decided to plan the evaluation at an early stage in the project so that you can collect information throughout the process. Make a rough draft in your Course Journal of the main types of data you will collect and who will provide them.

Discussion

You have probably considered how to collect data about the performance of the project in each of the three dimensions of time, cost and quality. For example, you could collect data about the proposed timetables for activities and the actual times, i.e. the scheduling of the project. You could collect data about the budget, from the estimates and initial forecasts and from the records of financial performance. In both of these dimensions data could be collected from both the provider organisation and from the client. Collecting data about quality might be more difficult. There might be some quality guidelines about the basic conditions expected for accommodation, presentation of materials and content of the programme. However, there will be many different viewpoints and perceptions about what is delivered and how it might have been improved. Again, data could be collected from the provider and from the client. To collect rich data that represents different perspectives, different stakeholders could be approached. In the client organisation these could include participants in the programme, their line managers and other senior managers, staff from their HR department and possibly key customers of the first-line managers in the development programme. In the provider organisation the project team would be an obvious source of data, but there would also be supporting staff, including administrative staff and possibly other service departments who could provide different perspectives on the project. Similarly, staff who manage the accommodation, whether this is in either the client or provider organisations or hired for the events, could provide information about how the processes were managed. In a project of this nature, you may have thought of seeking a longer-term view, perhaps six months after the conclusion of the project, to assess the extent to which it actually achieved its purpose in enabling more internal promotions.

A number of potential methods could be used to collect and analyse data:

- records kept for monitoring purposes to make comparisons between activities;
- records of meetings and other formal events can provide useful data on the sequencing of decisions and discussion of issues;
- interviews, questionnaires or focus groups; and

- observation or role-play might provide useful insights into how activities are carried out.

The balance between qualitative and quantitative data is important, because each can supplement the other and it is difficult to achieve an overall picture if only one type of data is used.

Activity 5.6

If you were evaluating a project and only quantitative data was available for your inspection, what would you want to have more information about? Record your response in your course journal.

Discussion

If only quantitative data was available you would have information only about things that could be counted. Although this is often very important, you would have no information about quality. You would want to know that the project had achieved both formal quality standards and any other expectations identified in the objectives. Opinions of customers of the project are very important in evaluating outcomes. The views of those who took part in the project are important in evaluating the process.

The methods you choose to collect information will be influenced by the availability of resources, taking into account:

1. the *cost* of obtaining the information, in relation to its contribution to the evaluation;
2. the *number of sources* from which information should be obtained if sufficient viewpoints are to be represented to ensure that the results are credible;
3. the *time* it will take to obtain and analyse the information;
4. the *reliability* of the information obtained;
5. the *political* aspects of the process – for example, some ways of gathering information may help build up support for the evaluation.

Direct contact with those involved in the project might be the only way in which sufficient information can be obtained to make the evaluation worthwhile.

Example 8: Post-Project Appraisal (PPA) at British Petroleum

At an appraisal's outset, the team relies on the files to become familiar with the project. This avoids wasting people's time. The team learns about the economic climate at the time, the identity of the contractors, or the chemical process used. Team members might spend the first two months of a six-month investigation just looking at files – both at project files and at material in related corporate files, in such departments as accounting, legal or planning.

While the PPA manager will probably already know the senior managers who should be interviewed, the files provide a complete list. The team generally tries to interview everyone involved in the project. Since most projects have been completed for at least two years before the unit begins its work, however, the project members are working all over the world on other things. In one investigation, the PPA team talked to 80 individuals; the average is usually around 40.

In their interviews, the PPA team members make an effort to understand the psychology of the project members and managers. They interview in pairs so that one team member can ask questions while the other watches the interviewee. A furtive look often tells as much as a direct answer.

After the interviews, the two team members compare notes and reconcile differences in their perceptions. The full story usually emerges in separate pieces: senior managers in London will give up one piece of information, engineers on an oil rig in the middle of the North Sea will give up another. By melding project members' different perspectives, the PPA people can come up with the whole picture.

… Sending PPA teams into the field to conduct investigations is far more expensive than sending out questionnaires – and far more effective. Because a questionnaire is a set collection of questions it can elicit only a limited view of the project. In an interview, people offer unexpected information; also, the PPA team can lead an interviewee away from digressions.

(Frank Gulliver, 1987)

Analysing and Reporting Results

When planning what data to use in the evaluation it is helpful to consider how the data will be analysed. Usually, there are a lot of data, perhaps in several different forms. If you have set clear objectives, it should be possible to identify the data that are relevant to each issue. It is usual to follow the steps below:

1. consider numbers, for example how much has been achieved at what cost;
2. consider quality, whether appropriate and not too high or low;
3. seek out both positive and negative evidence;
4. make comparisons; and
5. look for patterns in the evidence.

It can be very time consuming to analyse data from interviews and observations but, if the purpose of the analysis is clear, then it is possible to focus only on the relevant material.

It may be that several different evaluation reports must be prepared on completion of a project:

- the client/sponsor report;

- what has been learnt from the project; and
- different types of evaluation report for different stakeholders.

For example, some funding bodies require to be told how their funding contributed to the success of a project, and so need a report relating only to one aspect. It is usually for the manager of a project to identify the number and types of report that are required, and to ensure that they are prepared and presented appropriately.

You need to consider the audience and use language that they will understand, avoiding unfamiliar jargon. The report is likely to include:

- an executive summary;
- an explanation of the background to the project;
- an explanation of how the evaluation was planned;
- the methods that were used to collect and analyse data;
- a presentation of the evidence, and how it has been interpreted;
- a conclusion, and recommendations for future practice.

If some aspects of the work encountered problems, be careful about identifying causes if there is an implication of blame. Sometimes it is better to discuss problems that have implications for contractual relationships in confidential reports or face-to-face meetings. Consider how to present the report in a businesslike and attractive format appropriate for its audience.

Following Up the Report

The evaluation report will often contain recommendations for further actions and these may lead to new project ideas. Recommendations may relate to processes and procedures within the organisation. Project evaluation and debriefing can be a learning experience for the organisation as a whole, as well as for individuals. For example, British Petroleum gathers the lessons learnt from post-project appraisals in a series of booklets that are then used as guidance for writing project proposals. In some circumstances it may be helpful to run seminars to discuss the lessons learnt, and to develop better processes with other potential project managers.

Example 9: Disseminating the Lessons From a Project

The project manager of a staff development project ran a series of seminars for human resources colleagues, to disseminate the lessons learned from the project. The key lessons identified were:

- Give sufficient time to clarifying the project leader's role and accountabilities.
- Make sure the resourcing plan is sufficiently detailed.
- Replacement costs for staff on training courses should be included in the budget.

- Formulating strategy, project planning and implementation are not sequential – plans have to be flexible.
- The objectives of the project need to be clear.
- Do not assume networks of communication already exist.
- Make involvement of key individuals in development activities mandatory – they (we!) must be open to change.
- The key people are not just senior managers.
- Do not spend too much time piloting – you may lose momentum.
- Remember to take into account the tension between operational work and project development work.
- Beware: big projects can become a dumping ground for all the organisation's ills!
- The workshop considered the conditions from which the lessons had been drawn, and spent time in agreeing how to avoid these and similar pitfalls in future project working.

Activity 5.7

If you think back to a recently completed project, develop a list of lessons from the project. In your Course Journal, give a brief description of the project and then list the key lessons.

Discussion

You may find that some of your key lessons are similar to those given in the project in the example, but hopefully you were able to identify some key lessons that were specific to the project that you were considering.

Self-Development From a Project

Managing a project provides considerable opportunities for self-development, but these can be lost if you become too immersed in delivering the project to remember that you will move on to other work once it concludes. For many managers, taking responsibility for a project is a time-bounded task with clear objectives and a fixed budget. A project usually involves managing staff, finance, operations and information across the boundaries of departments and functions, with complicated interactions and difficult situations. There is usually a strategic dimension, in ensuring that the project continues to align with organisational objectives and directions. Thus the project manager's overview of the project is similar to the chief executive's view of the whole organisation. There is an opportunity to use the experience of managing a project to develop yourself for a more senior role, and to demonstrate, through successful outcomes and evaluation, that you are prepared for such a role.

PERSONAL SELF-EVALUATION

You could also carry out a personal self-evaluation, to contribute to your own development as a project manager. You can develop a list of questions to evaluate your own performance:

- Were the project objectives achieved?
- Did the project stay within budget?
- How were problems that occurred during the project been resolved?
- What could you have done differently to improve the final result?
- What do your colleagues feel about the results of the project?
- How good is your current sponsor relationship and the relationship with other stakeholders?
- Will your sponsor recommend you to colleagues?
- Has your sponsor asked you to undertake additional work?
- What have I learnt from managing this project?
- What skills/competences could I develop to help me with future projects?
- Some of the information you will need might be obtained from your colleagues and project team, such as:
- To what extent did I contribute to achieving the project objectives through the way in which I managed the project?
- What specific actions did I take which helped us to meet the project objectives?
- What did I do that hindered us in achieving the project objectives?
- What might I have done that I didn't do to help us to achieve the project objectives?
- Would you appoint me to a similar role in future?
- Would you choose to work with me in similar roles in future?
- Would you recommend me to colleagues?

Some of these questions can be usefully asked from an early stage in the project to review the working relationships within the team. Other questions relate to the final outcomes and answers will be coloured by the extent to which the project is considered successful. Many of the questions will need to be adapted for use in a particular setting.

Activity 5.8

Imagine that you have just been asked to manage a new project that will be more challenging than any that you have managed before. Make a note in your Course Journal of any ways in which you might plan for personal development, and how you would then evaluate the development achieved.

Discussion

There are a number of areas in which you might have considered planning personal development. Such broad areas might include improving your skills in managing a project, your knowledge of techniques useful in managing projects and your understanding of the process of managing a project. In particular, you might have noted such skills areas as interpersonal relationships, leadership, effective communications, management of control systems, and management of relationships with partners and stakeholders. You might have focused on developing your understanding of techniques by applying new knowledge in a new situation.

Personal development can be evaluated in the same way as other factors. Firstly, you need to set targets against which to assess your success. Ask yourself, 'How shall I know that I have succeeded?' and identify the most significant indicators. As the project proceeds, you can collect evidence relating to your personal achievements as well as that relating to the project objectives. You may do this by compiling a portfolio of evidence which demonstrates your achievements against each objective that you have set yourself. Another way of keeping a record is a project journal, in which to set down what you notice and learn as the project develops. Some people find it helpful to note what works better or worse than they expected, and to look for reasons for this. It is sometimes possible to identify underlying causes of both success and failure by keeping a personal record of this nature.

It can be lonely managing a project; and it can be difficult to seek feedback about your own performance if the team are new and lack confidence, or if the situation requires you to take a strong lead. Consider asking a senior manager in your organisation to act as your mentor for the duration of the project. This should not be someone who has a strong personal stake in the project, but someone who can help you learn from what happens as the process unfolds. Share with your mentor your plans to use the project for personal development, and ask her or him to help you make the most out of the opportunities the project offers. You might find it helpful to draw up the framework of a personal development plan, indicating some targets for development and identifying how you will know that you have reached them. You might also want to collect evidence of your achievements, to produce as you pursue new career options.

UNIT SUMMARY

In this unit, the issues that arise in bringing a project to a close have been examined, and ways of evaluating a project have been discussed. The key components of project closure have been identified and discussed and their importance in ensuring that the aims and objectives of a project have been successfully attained, have been explored. You should now be able to plan an effective project closure. Problems often need to be resolved at the closure stage, and those managing projects need to be aware of potential problem areas.

The handover and delivery of a project or of project components are important stages. They require planning to ensure that the project sponsor or others receiving the project outcomes are satisfied and able to move forward. There are also opportunities at these stages to improve the impression that the project team has made.

Evaluation can take place at any time during a project, and can have important implications for its continuation, direction or successful completion. Most projects are concluded with an evaluation, and those managing project teams will usually be invited to contribute to this. Evaluation may also take place some time after the conclusion of a project, to review the extent to which it has achieved its long-term objectives. You should now be able to contribute confidently to the planning and implementation of evaluations.

Planning your personal development in order to improve your future performance in managing projects has also been discussed.

REFERENCES

The following readings were referenced in Unit Five.

- Craig, S. and Jassim, H. (1995) *People and Project Management for IT*, Maidenhead, McGraw-Hill.
- Elbeik, S. and Thomas, M. (1998) *Project Skills*, Oxford, Butterworth-Heinemann.
- Gulliver, F.B. (1987) ‘Post-project appraisals pay’, *Harvard Business Review*, March–April.
- Sabbagh, K. (2000) *Power into Art*, London, Allen Lane, The Penguin Press.

Final Assignment/Major Project

Below is a suggested final project for learners to demonstrate their mastery of the project management course goals. Instructors may choose to use this project, modify the project or provide an alternative assignment or project.

Proposed Final Assignment - Project Management

The assignment requires learners to consider a complex project that they must manage to help grow their business. Pick a topic that reflects your business needs from the list below:

- Acquire and outfit a new business office to support the growth of your production and administrative space.
- Create a new training department or distance education department to support your customers.
- Purchase and outfit a new retail space to display and sell your products.
- Start a tourism business that provides bus tours and environmental tours.
- Alternatively select a project topic and submit to your instructor for approval before you begin.

Goal: The aim of this assignment is to create a project management plan that reflects the desired project outcomes.

Approach: Learners must create a project management plan based on the template in Annex A. You may modify the template to meet your specific project requirements. The plan must reflect the implementation and conduct of the project that you and your instructor have agreed upon.

Once you have completed your project plan submit it to your instructor for review, feedback and grading.

COURSE SUMMARY

LESSONS LEARNED

This Project Management course should have prepared you to manage your different business projects. It is hoped you now realize that project management is different from the general management of your business. Projects have a goal, time limits and specific resources. They require a schedule and budget that you can manage. It should result in a measurable outcome and you should be able to establish and measure the quality of the desirable outcome. Hopefully the course has prepared you to complete your projects, ON TIME, WITHIN BUDGET, and to the highest QUALITY possible while avoiding any and all potential RISKS to your project success.

COURSE EVALUATION

Your institution should forward an end-course evaluation for you to complete. It is important that you fill this form out since it will help the course designers and your instructor adjust the course for future graduates.

Job well done and thank you for participating.

ANNEX A – PROJECT MANAGEMENT TEMPLATE

TABLE OF CONTENTS

<Insert TOC>

Introduction

Purpose of Project Management Plan

[Provide the purpose of the project charter.]

The intended audience of the *<Project Name>* PMP is all project stakeholders including the project sponsor, senior leadership and the project team.

Executive Summary of Project Charter

[Provide an executive summary of the approved project charter. Provide a reference to the approved Project Charter. Elaborate on any sections within the Project Charter that need further detail contained within the PMP.]

Assumptions/Constraints

[Insert summary of any changes from the project assumptions and/or constraints that were originally outlined in the project charter.]

Scope Management

[Insert the project's scope management plan.]

Work Breakdown Structure

[Insert the project's work breakdown structure.]

Deployment Plan

[Example: The project involves deploying an application to state health partners. This section would discuss the approach for rolling out the application to the end users, including conducting environment assessments, developing memorandums of understandings, hardware/software installation, data conversion.]

Change Control Management

[Example of Change Control: If a development server for your project is administered by another organization that is responsible for installing machine upgrades and there are scheduled outages that will impact your project schedule. Changes to the project will need to be made to deal with the potential impact of the scheduled outage.]

Schedule/Time Management

[Example of schedule management approach: Establish a baseline within the first two weeks of the project and monitor progress against the baseline on a weekly basis. The Project Manager will be responsible for ensuring the project schedule is updated with the latest information and never more than three business days out of date. For variances on executive milestones greater than 10%, the project may choose to use guidance specified by CPIC. See the CDC UP Project Schedule document for more guidance on project schedules and for Project Schedule templates.]

Milestones

The table below lists the milestones for this project, along with their estimated completion timeframe.

Milestones	Estimated Completion Timeframe
[Insert milestone information (e.g., Project planned and authorized to proceed)]	[Insert completion timeframe (e.g., Two weeks after project concept is approved)]
[Add additional rows as necessary]	

Project Schedule

[Insert the project's schedule.]

Dependencies

[Insert the schedule/project dependencies (both internal and external).]

Cost/Budget Management

[Insert the project's cost management plan.]

Quality Management

[Example: For an information system, controlling the consistency of screen layouts would include reviewing all screens to make sure they match the standards. Quality measures may be no bugs or defects for certain critical requirements, consistent screen layouts, or correctly calculating variables. Quality may be ensured through inspections, audits, formal testing and documentation of defects in a defect tracking system to ensure defects are fixed, retested and closed. Some projects may choose to use a traceability matrix to determine if critical requirements have been met.]

Human Resource Management

[Insert the project's human resource management plan.]

Communications Management

[Insert the project's communication management plan.]

Communication Matrix

[Insert the project's communication matrix or provide a reference to where it is stored.]

Stakeholder	Messages	Vehicles	Frequency	Communicators	Feedback Mechanisms

Risk Management

[Insert the project's risk management plan.]

Issue Management

[Insert the project's issue management plan.]

Procurement Management

[Example: This can include information such as ensuring project team members are assigned computers, how development and test servers are procured or can go into more detail and include an acquisition strategy that details how the project will be staffed (e.g., performance based fixed price contract, CITS contractors).]

Compliance Related Planning

[Insert a list of compliance related processes the project must adhere to]

APPENDIX A: PROJECT MANAGEMENT PLAN APPROVAL

The undersigned acknowledge they have reviewed the *<Project Name>* **Project Management Plan** and agree with the approach it presents. Changes to this **Project Management Plan** will be coordinated with and approved by the undersigned or their designated representatives.

[List the individuals whose signatures are desired. Examples of such individuals are Business Steward, Project Manager or Project Sponsor. Add additional lines for signature as necessary. Although signatures are desired, they are not always required to move forward with the practices outlined within this document.]

Signature: ______________________________ Date: ____________

Print Name: ______________________________

Title: ______________________________

Role: ______________________________

Signature: ______________________________ Date: ____________

Print Name: ______________________________

Title: ______________________________

Role: ______________________________

Signature: ______________________________ Date: ____________

Print Name: ______________________________

Title: ______________________________

Role: ______________________________

APPENDIX B: REFERENCES

[Insert the name, version number, description, and physical location of any documents referenced in this document. Add rows to the table as necessary.]

The following table summarizes the documents referenced in this document.

Document Name and Version	Description	Location
<Document Name and Version Number>	*[Provide description of the document]*	*<URL or Network path where document is located>*

APPENDIX C: KEY TERMS

[Insert terms and definitions used in this document. Add rows to the table as necessary. Follow the link below to for definitions of project management terms and acronyms used in this and other documents.

The following table provides definitions for terms relevant to this document.

Term	Definition
[Insert Term]	*[Provide definition of the term used in this document.]*
[Insert Term]	*[Provide definition of the term used in this document.]*
[Insert Term]	*[Provide definition of the term used in this document.]*

APPENDIX D: SUMMARY OF SPENDING

[Insert summary of spending by year. An example of layout is provided below.]

Budget Item	PY-1	PY	CY	BY	BY + 1	BY + 2	BY + 3	BY + 4	Total
Planning:									
Budgetary Resources					$ -	$ -	$ -	$ -	$0.00
Outlays					$ -	$ -	$ -	$ -	$0.00
Development & Implementation of Project:									
Budgetary Resources					$ -	$ -	$ -	$ -	$0.00
Outlays					$ -	$ -	$ -	$ -	$0.00
Total, sum of stages:									
Budgetary Resources					$ -	$ -	$ -	$ -	$0.00
Outlays					$ -	$ -	$ -	$ -	$0.00
Operations & Maintenance:									
Budgetary Resources					$ -	$ -	$ -	$ -	$0.00
Outlays					$ -	$ -	$ -	$ -	$0.00
Total, all stages:									
Budgetary Resources					$ -	$ -	$ -	$ -	$0.00
Outlays					$ -	$ -	$ -	$ -	$0.00
Government FTE cost					$ -	$ -	$ -	$ -	$0.00

PY: Previous Year; CY: Current Year; BY: Budget Year