

PDA Project Management

Project Management: Managing the Implementation of a Project

DV5J 35

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Contents

| | |
|--|------------|
| Preface | vii |
| Introduction | 1 |
| Information about the PDA in Project Management | 1 |
| Information about this Unit | 1 |
| How the pack is organised | 2 |
| Terminology and symbols | 2 |
| Section 1: Overview of project management | 5 |
| Purpose of this section | 5 |
| What is a project? | 5 |
| What is project management? | 6 |
| Project success | 6 |
| Why do projects fail? | 8 |
| Lessons learned from previous projects | 11 |
| Project management methodologies | 12 |
| A project management framework | 16 |
| Project initiation document | 17 |
| Section 2: Study notes for Outcome 1 | 21 |
| Purpose of this section | 21 |
| Stakeholders | 22 |
| Activity 1 | 23 |
| Stakeholder analysis | 23 |
| Activity 2 | 27 |
| Project organisation structures | 28 |
| Activity 3 | 36 |
| Building the project team | 36 |
| Activity 4 | 39 |
| Staff development | 39 |
| Activity 5 | 41 |
| Project partnerships | 41 |

| | |
|--|-----------|
| Activity 6 | 44 |
| Activity 7 | 45 |
| Effective communications | 45 |
| Activity 8 | 47 |
| Resolving conflict | 48 |
| Handling negotiations | 49 |
| Activity 9 | 50 |
| Section 3: Study notes for Outcome 2 | 51 |
| Purpose of this section | 51 |
| Project costs and funding sources | 52 |
| Costing the project | 53 |
| Activity 10 | 57 |
| Estimating and forecasting techniques | 57 |
| Monitoring, updating and reporting | 60 |
| Activity 11 | 62 |
| Section 4: Study notes for Outcome 3 | 63 |
| Purpose of this section | 63 |
| Project management processes | 64 |
| Project planning | 65 |
| Activity 12 | 67 |
| Scheduling delivery tasks | 67 |
| Estimating | 69 |
| Analytical planning techniques | 70 |
| Activity 13 | 72 |
| Activity 14 | 73 |
| Contingency planning | 73 |
| Project control mechanisms and reporting framework | 74 |
| Record keeping and audit requirements | 76 |
| Activity 15 | 77 |
| Activity 16 | 77 |
| Monitoring and review process | 77 |
| Activity 17 | 81 |
| Re-planning | 81 |

| | |
|--|------------|
| Quality | 82 |
| Activity 18 | 84 |
| Lessons learned | 85 |
| Activity 19 | 87 |
| Section 5: Study notes for Outcome 4 | 89 |
| Purpose of this section | 89 |
| Risk management | 90 |
| Activity 20 | 97 |
| Issue management | 97 |
| Activity 21 | 99 |
| Change control | 99 |
| Activity 22 | 101 |
| Danger signals | 102 |
| Activity 23 | 102 |
| Section 6: Study notes for Outcome 5 | 103 |
| Purpose of this section | 103 |
| Project closure | 104 |
| Evaluation | 106 |
| Activity 24 | 107 |
| Follow-on actions and recommendations | 107 |
| Lessons learned report | 108 |
| Activity 25 | 109 |
| Post project review | 109 |
| Activity 26 | 110 |
| Storage of project records | 110 |
| Section 7: Project management resources | 111 |
| Project management guidance websites | 111 |
| Project resources and other useful tools | 113 |
| Case studies | 113 |
| Books | 114 |
| Section 8: Glossary of project management terms | 115 |

Preface

This pack has been developed to provide support for the Higher National Unit *Project Management: Managing the Implementation of a Project (DV5J 35)* — the second of two Units that make up the Professional Development Award (PDA) in Project Management. The first Unit is *Project Management: Project Justification and Planning (DV5H 35)*.

Project management is playing an increasingly important part in a wide range of organisations and disciplines. Its defining features are fixed time schedules, budgetary boundaries, team coordination, specific accountabilities, focus on particular outcomes and collaborative working between project partners. Breakdowns in these aspects are the most frequent source of problems in projects. The PDA in Project Management is designed to equip you with the knowledge, understanding and skills required for successful project design and implementation.

Project Management: Managing the Implementation of a Project (DV5J 35) is also an optional Unit within the HNC in Management (G85M 15).

Introduction

Welcome to this learning and teaching pack. It is an introductory resource to support Unit DV5J 35 *Project Management: Managing the Implementation of a Project* — the second of two Units that comprise the Professional Development Award (PDA) in Project Management.

We are assuming that you will either have successfully completed the HN Unit *Project Management: Project Justification and Planning*, or that you are confident about creating an approved business case and project initiation document (PID). The creation of both of these documents is covered by the *Project Justification and Planning* Unit.

You should use this pack in a flexible way and with the support and direction of your tutor. This pack will probably be one of a number of resources or references your tutor will give you to help you fulfil the requirements of the Unit.

Information about the PDA in Project Management

The PDA in Project Management is designed to enhance and accredit the project management skills of new, inexperienced or aspiring project managers. It offers an opportunity to develop project management skills and enables progression to other widely recognised project management qualifications.

The PDA in Project Management comprises two mandatory Units at SCQF level 8 (HND level) with a total of 3 HN credits or 24 SCQF credit points. The award is sequenced from the first Unit on *Project Management: Project Justification and Planning* through to the second Unit on *Project Management: Managing the Implementation of a Project*. Although both Units are mandatory for the award, each can be delivered stand-alone in order to develop particular skills.

Information about this Unit

You will probably already be a project manager working in the public, private or voluntary sector, although you might not have formal project management qualifications. The purpose of this Unit is to provide you with the knowledge and skills you need to manage the implementation of a planned and approved project, and to apply a process of controlled closure on its completion or early termination.

There are five sets of study notes in this pack, each relating to one of the five Outcomes in the Unit. The five Outcomes are:

Outcome 1: Manage project relationships

Outcome 2: Control a project budget

Outcome 3: Monitor and control a project

Outcome 4: Manage risks and issues

Outcome 5: Evaluate and close a project.

Assessment of this Unit is predominantly practical and workplace-based. The Outcomes will be assessed in one of two ways:

- through the development of project proposal documentation (covering all of the requirements of the five Outcomes) for a real project for which you have responsibility
- through a simulated or case-study based project provided by your Centre — that derives from the workplace.

How the pack is organised

The main part of the pack contains study notes, covering the main topics in the Unit. At intervals in the text, there are activities that will help you to review your learning and prepare you for assessment. You should discuss your responses to these activities with your tutor.

The activities are not designed to test your knowledge formally. Assessment assignments and instructions will be created and provided by your tutor(s).

The descriptor for this Unit is not based on any specific project methodology, so that both you and your Centre can adopt the concepts and terminology most suited to your organisation. However, for the purpose of consistency and clarity this guide takes an approach that is based on PRINCE2.

Terminology and symbols

Terminology

Throughout the pack, the word ‘tutor’ is used to refer to the person delivering the Unit, and the word ‘candidate’ to the person studying the Unit. Any additional relevant terminology is explained as it is introduced.

Symbols

Specific symbols are used to denote particular activities as follows:



indicates that you should read a recommended text



indicates that you should access a particular internet site



indicates that you should undertake an activity.

Section 1: Overview of project management

Purpose of this section

This section sets the context for the rest of the pack by describing what is meant by 'project' and 'project management'. It also gives you generic guidance on what makes a successful project, and describes some typical pitfalls that can cause a project not to achieve its outcomes.

As the Unit descriptor is not based on a specific project management methodology, a brief description is given here of a number of the most commonly used project management methodologies.

An outline project development framework based on a simplified PRINCE2 approach is used as the basis for the layout of the support materials for the Unit.

What is a project?

There are a number of definitions of a project. Each captures, in its own way, the essential features of a project. These features are summed up effectively and economically by the definition provided by the Office of Government Commerce, which states that a project is:

'a unique set of coordinated activities, with definite starting and finishing points, undertaken by an individual or team to meet specific objectives within defined time, cost and performance parameters.'

The main characteristics of a project can be summarised as being:

- an instrument of change
- non-routine
- unique
- composed of interdependent activities
- carried out by people who don't normally work together
- temporary — with defined start and end dates
- intended to achieve specific outcomes
- frequently uncertain and involves a degree of risk.

What is project management?

There is no fixed or guaranteed formula for ensuring that a project is successful, but there are established techniques to help plan and manage projects. Project management is the planning, monitoring and control of all aspects of the project, and the motivation of all those involved in it to achieve the objectives on time and to the specified cost, quality and performance.

A large part of project management is based on common sense, and much of what is described in this pack is a structured approach to what informed and skilled people probably do instinctively. Some people who believe they have no project experience may already be 'accidental project managers' (see Mullaly, M E, (2003) *The Accidental Project Manager: Coming in from the Cold* — source: jiscinfonet.ac.uk). These people carry out many of the activities outlined here, but view them as simply 'getting things done'. What this pack provides is a structured approach and a set of tools that help this process. It is not always necessary to buy in project management skills from a third party supplier or consultancy firm. Often, existing skills can be configured and directed to develop and run projects.

Although in the right circumstances, external consultancies can contribute valuable experience relinquishing a significant degree of control over a project should not be entered into lightly. Any organisation should consider developing sufficient in-house project management skills to be able to evaluate the performance of potential contracting partners.

Project success

The Office of Government Commerce (OGC) guidelines advise that successful projects should have the following:

- a well-defined scope and agreed understanding of intended outcomes
- active management of risks, issues and timely decision-making, supported by clear and short lines of reporting
- ongoing commitment and support from senior management
- a senior individual with personal accountability and overall responsibility for the successful outcome of the project
- an appropriately trained and experienced project team and, in particular, a project manager whose capabilities match the complexity of the project
- well-defined and visibly managed processes, which are appropriate for the scale and complexity of the project.

The following list of project characteristics might provide a useful checklist. To increase the chances of success, projects should have the following:

- clear and well-managed processes
- a clearly defined purpose and limits
- shared understanding of intended outcomes
- realistic objectives
- good management of risks and problems
- thorough planning
- timely decision-making supported by short, clear lines of reporting
- strong leadership
- commitment and support from senior management
- a senior person with overall responsibility for the success of the project
- a trained and experienced project manager who is suited to the particular project
- a trained and experienced project team
- clearly defined jobs and responsibilities
- good communications.

The following websites contain advice on successful project management:

‘14 Key Principles for Project Management Success’



<http://www.michaelgreer.com/14key.htm>

‘Project Management Tips’ contains links to several helpful articles. Two of these provide an overview of project management best practice:

‘Project Management Best Practices I – Plan the Work’

‘Project Management Best Practices II – Work the Plan’



<http://www.projectkickstart.com/html/tips.htm>

The Atlantic Systems Guild website contains a list of good project management points. These were gathered from successful project managers.



<http://www.systemsguild.com/GuildSite/Robs/MasterPoints.html>

Why do projects fail?

A significant number of projects fail to achieve their intended outcomes on time and within budget. This is particularly so for projects involving information systems. The project scenario shown below illustrates the most common pitfalls.

Why do projects fail?

What the user wanted..... 

What the budget allowed for..... 

What the timescale allowed for..... 

What the technician designed..... 

What the user finally got..... 

The most common reasons for project failure are listed below:

- following a method without thinking
- being too confident of success
- not having enough of a contribution from those with an interest
- having unrealistic expectations
- contributors or partners having too little involvement
- poor communication
- poor project specification
- not enough resources
- having the wrong people involved in the project
- having too much reliance on one person

- not enough planning
 - unrealistic time and resource estimates
 - unclear or unmeasurable project objectives
 - changing project objectives during the project
- failure to manage risks and problems.

The failure of large, ambitious projects in the public sector often receives considerable, negative publicity. Three such examples are described briefly below. Follow the weblinks provided to read more about what went wrong with each project and the lessons learned.

Example 1 — the Passport Office

In the summer of 1999, the failure of the Passport Office's new IT system caused large delays in the issue of passports. Several hundred people were unable to travel and phone lines were continually congested.

Reference

For a description of the case study:



<http://www.jiscinfonet.ac.uk/InfoKits/project-management/pm-intro-1.2>



Extract from National Audit Office summary at:

<http://www.nao.gov.uk/pn/9899812.htm>



Full report at:

http://www.nao.gov.uk/publications/nao_reports/9899812.pdf

Example 2 — NASA’s Mars Climate Orbiter Project

In 1999 a Mars space probe from NASA was lost. According to the report of the subsequent investigation, a number of the failures were related to the quality of the project management.

Reference

For a description of the case study:



<http://www.jiscinfonet.ac.uk/InfoKits/project-management/pm-intro-1.2>

Report on ‘Project Management in NASA’ by the Mars Climate Orbiter Mishap Investigation Board at:



www.dcs.gla.ac.uk/~johnson/Mars/MCO_MIB_Report.pdf

Example 3 — a university accounting system

A large university developed a new accounting system that did not work for the first six weeks of its operation. Several months later it was seen as ‘failing to do what it was supposed to do’, and as being ‘unreliable’. This led to a major investigation, which concluded that basic project management procedures had not been followed, and that it would take at least two years to correct matters.

Reference

For a description of the case study:



<http://www.jiscinfonet.ac.uk/InfoKits/project-management/pm-intro-1.2>

Lessons learned from previous projects

In the analysis of all projects, whether successful or otherwise, it is a consistent finding that projects revolve around the people involved — at all levels. Relatively few projects fail for technical reasons. Most fail because they are not effectively managed. The most important and complex aspect of the management task is managing relationships amongst the people involved.

Regardless of the size or nature of project, the types of problems and reasons for failure can be very similar. It is important therefore that we record what goes wrong, the reasons why it goes wrong, and what should be done differently or better the next time. We want to learn from these lessons in future projects and not repeat the same mistakes that we made before.

The lessons learned from the above projects are typical of the lessons reported from many other projects, large and small:

- maintain a sense of ownership throughout the project, and ensure that the allocation of major resources is followed through (by senior manager responsible)
- set clear success criteria for its outcomes
- match scope of project to funding
- ensure budgets are adequate for the intended outcomes
- make an initial costing as part of the business case
- present a full business case before the project is started, to obtain a commitment to resources from stakeholders and senior management
- construct business case to ensure that time is allowed to assess the costs and benefits of any proposed new system before the project gets underway
- define roles and responsibilities
- pay attention to 'people' issues, including the infrastructure of the project
- train staff fully and allow adequate time to learn new processes
- keep customers or end users of the system informed
- ensure good team working and adequate and appropriate staffing
- ensure good communications amongst and within different teams
- monitor the work of contractors effectively

- put adequate risk management and issue control procedures in place, with continuous risk analysis and discussion of issues from start to end of the project
- create climate in which issues can be easily and safely raised
- adhere to organisation's procurement procedures
- have realistic contingency plans in case the project fails to deliver on time
- include in planning the basic tools that allow project staff to carry out their day-to-day work
- plan and monitor effectively, so that you realise when changes are required and re-planning is necessary.
- test new systems thoroughly.

Project management methodologies

There are many formal project management methodologies that combine a framework or approach with a set of project tools and guidelines. Some are proprietary approaches developed by consulting firms and software houses, while others are in the public domain. They vary in scale and complexity, but all are based around a small core of common sense principles.

The choice of project management methodology is less important than the way it is applied. The success of a project depends substantially on the skills and commitment of the people running it.

Some examples of frequently used methodologies are described below.

1 PRINCE2 (PProjects IN Controlled Environments)

The PRINCE methodology entered the public domain in 1990. Further revisions following extensive user consultation resulted in the launch of PRINCE2 in 1996. This methodology is the UK Government standard for managing major projects and is becoming increasingly popular internationally. It has been widely adopted by both the public and the private sectors for all types (IT and non-IT) and sizes of project.

Key features

Business case

PRINCE2 is business case driven and focuses on delivering outcomes to meet a defined business case based on business benefits. The business case is the justification for the forecast time and effort set against the expenditure. The project board uses the business case to monitor the viability of a project throughout its lifespan.

Customer/supplier relationship

PRINCE2 acknowledges the distinct roles of the customer and the supplier in a project. The customer commissions the work and the supplier provides the specialist resources, skills, goods or services. Some projects have more than one customer and more than one supplier and can be considerably more complex as a result. PRINCE2 stresses the need to manage such projects with additional care and planning.

Scope of the methodology

PRINCE2 is used to manage a project and its resources. It does not cover specialist techniques for creation of products — for example — people management, planning, risk management, quality management, finance and procurement. It is process based, and needs to be tailored to suit circumstances. It can be applied to small and large projects.

Reference

www.prince2.org.uk



2 Small Project Management (SPM)

This methodology is designed for those seeking a straightforward approach to managing small projects. The SPM philosophy is a standard method for managing all small projects, and aims for a consistent approach while keeping paperwork to a minimum. This proprietary methodology is available through several training consultancies and membership bodies.

Reference

USA



www.projectexperts.com/products/spg.htm

UK



www.tpgacademy.com/

3 Structured Systems Analysis and Design Method (SSADM)

Early definitions for structured design and structured analysis were introduced in the late 1970s. This culminated in the emergence of the Structured Systems Analysis and Design Method (SSADM) in 1980. Subsequently, there were updated versions during the 1980s and 1990s, leading to the launch of SSADM4+ in 1995. SSADM is best suited to IT development projects, but does not cover the whole project life-cycle — for example, it does not include project controls. It is best used in conjunction with another project management method.

Reference



www.bdris.com/SSADM1.htm

4 Rapid Application Development (RAD)

The early 1990s saw the emergence of Rapid Application Development (RAD) as an approach to the development of information systems (IS). This provided a potentially quicker and less costly solution to the development of IS projects. The approach covers the whole life-cycle of a project from feasibility to maintenance, and is characterised by small development teams. There are many established methods of using RAD, and more recently in the UK it has been incorporated within the Dynamic Systems Design Method (DSDM).

Reference



www.blueink.biz/RapidApplicationDevelopment.aspx

5 Dynamic Systems Development Method (DSDM)

DSDM is a stricter method of RAD, based on previous experience of RAD projects. It is designed for rapid and effective product delivery, and is well suited to small projects. PRINCE2 and DSDM are complementary and aspects of both can be used in the same project.

Reference

www.dsdm.org



6 Project Cycle Management (PCM)

This is a well-established method, and is used by the European Commission for the identification, formulation (appraisal), implementation and evaluation of projects and programmes. It incorporates the Logical Framework — a management tool for planning and managing development projects, which emphasises objectives.

Reference

The PCM Group

www-en.pcm-group.com/



The Logical Framework

www.metametrics.com/logframe.html



7 Scalable Methodology Guide

The Scalable Methodology Guide recognises that projects of varied size and complexity require unique scaling of project management techniques, to manage project risks effectively and economically. The Guide builds upon the US Project Management Institute's key principles of project management, and gives guidance on how to fit the various tools and techniques available to particular projects.

The Scalable Methodology Guide sees project management as a set of principles and techniques for controlling project risks and capturing opportunities as projects are developed. Due to the constraints of economics and the unique circumstances of each project, management techniques need to be tailored to the specific risks and opportunities they present.

Reference

www.hyperhot.com/pm_meth.htm



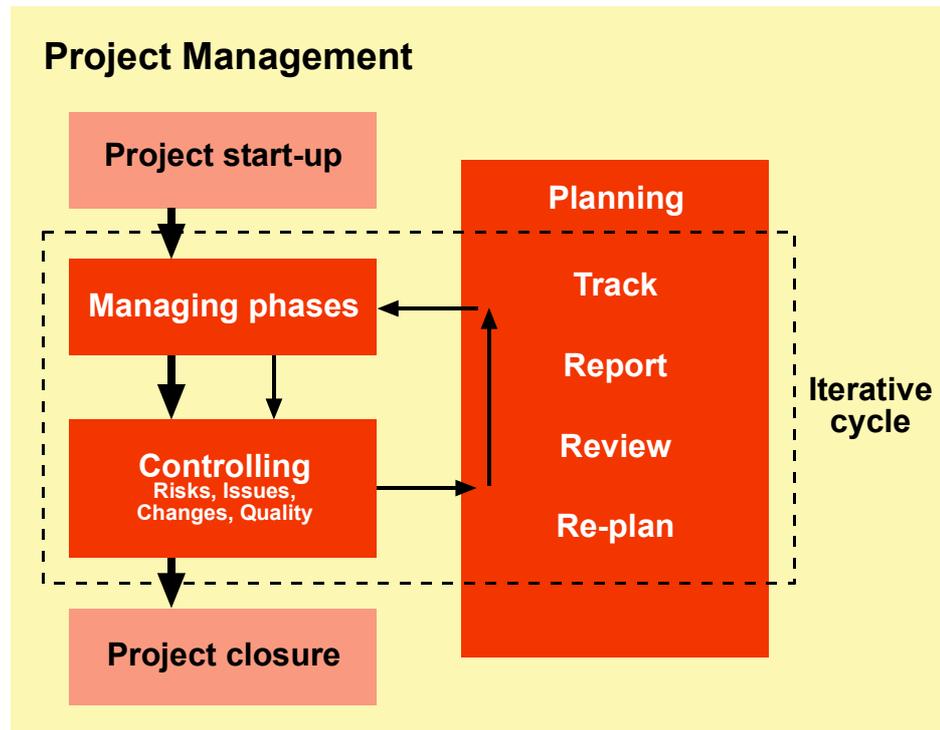
A project management framework

This pack uses an approach based on PRINCE2 — a comprehensive methodology that can be applied to projects of any size and complexity. For the purposes of the pack, PRINCE2 is confined to the essential features of a framework suitable for managing any project. Since the method is scalable, there are areas where it can be explored in greater or lesser detail, depending on the particular context. Properly applied, it should be a user-friendly framework that matches the size, risk level and complexity of the project.

As with any project management framework, a degree of documentation is required. This is essential to define and manage the project and to measure its success. It will also help you to develop skills for the future. The proposed documentation is kept to the minimum required for these purposes.

Some project methodologies focus primarily on the mechanics of management activity and, in doing so, overlook the indispensable human dimension. Here, the management activities are balanced with the skills you will need to manage the organisational change — the personnel interactions and the professional development that any project will inevitably bring about.

The diagram below shows the main components of the project management framework used by this pack. Some elements — namely, project start-up and project closure — occur only once. The remaining elements — planning, managing and controlling — form a continuous cycle that runs throughout the project up to its completion.



The methodology behind this framework is a tried, tested and structured approach that will provide a sound basis for running a successful project. It is not, however, a substitute for creativity. Every project has its unique characteristics, and necessarily involves uncertainty and risk. It requires flexibility and ingenuity if it is to succeed.

Project initiation document

The single most important piece of documentation to be produced at the project start-up stage, and probably during the course of the entire project, is a project initiation document (PID). This may also be called a project scoping document, project outline or project management plan. This sets out in detail what needs to be known to plan and resource the project. Projects seldom fail at the end — but they frequently fail at the beginning.

A PID should include details of:

- project goals and objectives, and the critical success factors by which achievement of the objectives will be judged
- the project scope in relation to the organisation, functional areas and timescale, as well as a statement about any related areas that are considered to be out of scope

- identified risks and any constraints affecting the project (see Section 5 for information on risk management)
- any assumptions made about the project. These might be assumptions that the project manager is making about the support expected from other parts of the organisation or, if the project has a partner or a third party supplier, assumptions about what the partner/supplier will deliver. Here is a sample set of typical assumptions of the kind that can undermine a project if they are not fully understood and agreed:
 - when implementing a piece of software, it is assumed that it is someone else's job to specify, procure and install the necessary hardware before the project is started
 - a project plan has been drawn up on the basis that it will have a full team in place from day one, although the team isn't yet recruited
 - it is assumed that the project team has the authority to change administrative processes in user departments to ensure the effective working of a new system
 - it is assumed that somebody will actually implement those changes to working practice
 - it is assumed that a third party will provide goods/resources of the stated quality at the stated times. (The assumptions made about third party involvement are best resolved by drawing up a contract with that third party. In other words, there should be a formal definition of responsibilities.)
- the project's organisation structure and roles and responsibilities within the team
- the project control mechanisms
- the reporting framework
- stakeholders and their involvement
- the approach to planning and a milestone plan
- the project budget.

Sample templates and example PID

Sample templates for a project initiation document can be found at:



www.jiscinfonet.ac.uk/InfoKits/infokit-related-files/project-initiation-document-template



www.prince2.org.uk/Web/Site/PRINCE2Resources/PRINCE2-Templates.asp

Some useful additional references can be found at these web addresses:

From the University of Bristol, a project brief for a project to create a Data hub to share personnel and administrative data across the university can be seen at:



www.bris.ac.uk/projects/datahub/project_brief

This site also contains other project documentation.

Project initiation document produced by Northumbria University for the development of a Data Warehouse:



www.jiscinfonet.ac.uk/InfoKits/infokit-related-files/pid-example-northumbria-datawarehouse

Section 2: Study notes for Outcome 1

Purpose of this section

This section provides study notes and activities to support Outcome 1: Manage project relationships. These notes and activities will help you to cover the following knowledge and/or skills required for this Outcome:

- Stakeholders
- Partnership working
- Effective communication
- Resolving conflict and handling negotiations.

To achieve this Outcome you must provide evidence of your knowledge of how to work and communicate effectively with the project team and other stakeholders.

In providing this evidence, you should:

- make use of a suitable technique to identify key stakeholders and their project involvement
- create a suitable framework for project communications.

To demonstrate basic knowledge and understanding of how to deal with partnerships (inter-departmental or cross-organisational), you should:

- compare and contrast two different approaches to project partnership (including the relative effectiveness of the partnerships) using examples from within an organisation. This could be done through simulation.

To demonstrate your knowledge and understanding of how to handle minor conflict and simple negotiations within a project environment, you should:

- apply conflict resolution techniques (in accordance with good practice) to a particular project scenario that involves conflict with an individual or a group
- apply negotiation techniques (in accordance with good practice) to a particular project scenario that involves the need to negotiate with an individual or a group.

The notes in this section — alongside tutor input and other reading on the topics — should enable you to create the required evidence in support of effective management of project relationships. These notes cover the following topics:

- Stakeholders
- Stakeholder analysis
- Project organisation structures
- Building the project team
- Staff development
- Project partnerships
- Effective communications
- Resolving conflict
- Handling negotiations.

Stakeholders

Project stakeholders include the sponsors and all those who will be involved in or impacted upon by the project. If the project has been set in a strategic context, most members of the organisation will be to some extent stakeholders, exercising varying degrees of influence at various levels. These include:

- strategic — they determine the strategy that the project underpins — might sponsor the project
- managerial — execute managerial control over elements of the project and/or its outputs
- project — are involved in developing and delivering the project
- operational — involved in implementing or operating outputs of the project
- direct influence — are directly affected by outputs of the project
- indirect influence — are indirectly affected by the project or its outputs.

Stakeholders include interested individuals and groups who are internal and external to the project and to the organisation. This includes the project team.

Activity 1



Select one of your projects and make a list of the key stakeholders.

Stakeholder analysis

There are various approaches to involving stakeholders, and you must be careful to identify the best approach to get optimum input from the right people at the right time.

Different stakeholders will inevitably have different interests in the project. It is useful to identify key stakeholders, assess their possible impact on and likely attitudes to the project, and to design strategies to engage them and keep them engaged.

A stakeholder map can be used to map the various stakeholders against their interests in the execution or outcomes of the project. This is presented as a matrix, showing each key stakeholder or stakeholder group against their interest areas in the project.

The example below is an extract from a stakeholder map for a project to organise and run a large conference. The map does not stand alone. It needs an accompanying commentary to explain the interest areas and the involvement or stance of the stakeholders in relation to these areas.

| Stakeholders | Interest areas | | | | | |
|---------------|----------------|--------|-----------|-----------|-------------|-------|
| | Finance | Safety | Publicity | Programme | Hospitality | Venue |
| Exhibitors | ✓ | ✓ | | | | ✓ |
| Delegates | ✓ | | | ✓ | ✓ | ✓ |
| Press & media | | | ✓ | | | |
| Suppliers | | ✓ | | | ✓ | ✓ |
| Sponsors | ✓ | | ✓ | ✓ | ✓ | |
| Presenters | ✓ | | ✓ | ✓ | | |

In addition — or alternatively — a more detailed analysis of each stakeholder can be represented. Table 1 is an example of this.

Table 1

| Stakeholder | Stake in the project | Potential impact on project | What does the project expect the stakeholder to provide? | Perceived attitudes and/or risks | Stakeholder management strategy | Responsibility |
|----------------------------|--|-----------------------------|---|--|---|---|
| Director of Finance | Policy and process owner who determines organisational administrative policy and procedures. | High | <ul style="list-style-type: none"> Experienced staff to be involved in user group and user acceptance testing. Commitment to implementing change. | <ul style="list-style-type: none"> Lack of clarity about preferred approach. Views project team as too technically oriented. | <ul style="list-style-type: none"> Involvement in project steering board. Regular updating meeting with project leader. | Project manager |
| Heads of Department | Manage admin staff who will operate the new system at local level and staff who will indirectly input and directly extract data. | Medium | <ul style="list-style-type: none"> Commitment to implementing change. | <ul style="list-style-type: none"> Lack of interest in project. | <ul style="list-style-type: none"> Involvement in briefing sessions at quarterly meetings. | Director of Finance and project sponsor |

Table 1 (continued)

| Stakeholder | Stake in the project | Potential impact on project | What does the project expect the stakeholder to provide? | Perceived attitudes and/or risks | Stakeholder management strategy | Responsibility |
|--------------------|--------------------------|-----------------------------|--|---|---|----------------|
| Admin staff | Will operate new system. | High | <ul style="list-style-type: none"> • Contribution to system and process design and testing. | <ul style="list-style-type: none"> • Concerned about increased workload. • Worried about what training they will receive. | <ul style="list-style-type: none"> • Involvement in user groups. | Project team |

It is important that the analysis is shared with colleagues and preferably authorised at project sponsor level. This is to help ensure that a previously unidentified stakeholder does not emerge unexpectedly in the middle of the project!

Table 1 is an analysis of stakeholders at an organisational level, but you also have to engage with and involve the people who represent the organisations. There are two main approaches to this. These can be summed up as Representation v Delegation. Both have advantages and disadvantages — see Table 2.

Table 2

| Approach | Advantages | Disadvantages |
|---|--|--|
| <p>Representation</p> <p>Attempts to take in the full range of views, interest groups and organisational units as part of the full decision-making process. Characterised by democratic, committee-type decision-making.</p> | <ul style="list-style-type: none"> • Covers full range of views. • An obvious route to gain widespread acceptance of decisions. | <ul style="list-style-type: none"> • Involves people who may have limited knowledge of the subject area. • Slows decision-making. • Can result in compromises which don't really represent 'best fit' in any particular area. |
| <p>Delegation</p> <p>Gives responsibility to those identified as being best suited to the job.</p> | <ul style="list-style-type: none"> • Work carried out by those with appropriate skills and knowledge. • Allows project to move forward more rapidly. | <ul style="list-style-type: none"> • Acceptance relies on trust in those delegated — may be an alien approach in some organisational cultures. • Needs care to ensure that all relevant issues are properly understood and covered. |

If time is a significant constraint — with, for example, processes and policy moving on rapidly — the suggested model is to follow a delegation route with a small team of committed experts empowered to undertake work on behalf of the wider community. The empowerment aspect is crucial, as is (under either approach) a robust communication strategy and plan, devised in accordance with the stakeholder analysis as outlined above.

Activity 2



Using the list of stakeholders you created in Activity 1:

- 1 identify the main project interests for each stakeholder
- 2 draw a stakeholder map with this data.

Project organisation structures

However small or large a project, there must be agreement on who:

- says what is needed
- provides the budget
- provides the resources
- authorises the changes
- manages the day-to-day work
- defines the standards to be met.

On a small project, many of the above tasks will be the responsibility of the same person. On a large project, a number of people may be involved in each task. In each project it should be decided which of the following roles needs to be allocated to one person or shared amongst a number of people, or combined together:

- Project sponsor (also known as project executive or project senior responsible owner)
- Project board
- Project manager
- Team manager
- Project team members
- Project support — for example, a project administrator.

Additional roles might include:

- Systems developer
- Systems administrator
- Programme manager (if project is part of a programme).

Project roles and responsibilities

Definitions of these roles are provided in the following tables.

| Title | Role |
|--|--|
| Project sponsor | The person who commissions others to deliver the project and champions the cause throughout the project. They will normally be a senior member of staff with a relevant area of responsibility that will be affected by the outcome of the project. They are involved from the start of the project, including defining the project in conjunction with the project manager. Once the project has been launched they should ensure that it is actively reviewed. The project sponsor is usually the one who has to negotiate a path through potentially difficult senior management questions. |
| Responsibilities | |
| <ul style="list-style-type: none"> • acts as champion of the project • is accountable for the delivery of planned benefits associated with the project • ensures resolution of issues escalated by the project manager or the project board • sponsors the communications strategy; communicates the project's goals to the organisation as a whole • makes key organisation/commercial decisions for the project • assures availability of essential project resources • approves the budget and decides tolerances • leads the project steering board. • has ultimate authority and responsibility for the project. | |

| Title | Role |
|---|--|
| <p>Project board (or steering group)</p> | <p>This group (normally containing management grade personnel) is responsible for overseeing the progress of the project and dealing with any strategic problems. The group is optional, as the sponsor-manager relationship may be seen as the best means of control, but is usually required in large projects, which cross functional boundaries.</p> |
| <p>Responsibilities</p> | |
| <ul style="list-style-type: none"> • champions the project and raising awareness at senior level • approves strategies, implementation plan, project scope and milestones • resolves strategic and policy issues • drives and manages change through the organisation • prioritises project goals with other ongoing projects • communicates with other key organisational representatives. | |

| Title | Role |
|-------------------------------|--|
| <p>Project manager</p> | <p>The person responsible for developing (in conjunction with the project sponsor) a definition of the project. The project manager ensures that the project is delivered on time, to budget and to the required quality standard within agreed specifications. He or she ensures the project is effectively resourced and manages relationships with a wide range of groups, including all project contributors.</p> <p>The project manager is also responsible for managing the work of consultants, allocating and utilising resources in an efficient manner and maintaining a cooperative, motivated and successful team.</p> <p>The project manager isn't normally the line manager of everyone on the team. The line managers may not even be working on the project.</p> |

Project manager (continued)

Responsibilities

- manages and leads the project team
- recruits project staff and consultants
- manages coordination of the partners and working groups engaged in project work
- implements detailed project planning and control
- develops and maintains a detailed project plan
- manages project deliverables in line with the project plan
- records and manages project issues and escalating where necessary
- resolves cross-functional issues at project level
- manages project scope and change control and escalating issues where necessary
- monitors project progress and performance
- provides status reports to the project sponsor
- manages project training within the defined budget
- liaises with, and updates progress to, project steering board/ senior management
- manages project evaluation and dissemination activities
- manages consultancy input within the defined budget
- gives the design specification final approval
- works closely with users to ensure the project meets business needs
- defines and manages the user acceptance tests
- identifies user training needs, devises and manages user training plans.

| Title | Role |
|--|---|
| Team manager (senior consultant or supplier-side manager) | The person responsible for managing supplier-side input to the project. |
| Responsibilities | |
| <ul style="list-style-type: none"> • ensures that mandatory supplier requirements are met • manages the production and approval of the supplier side of the budget • makes effective use of supplier resources within the approved budget • tracks performance of consultants and takes appropriate action • proactively develops a collaborative relationship with the organisation to project steering board level • ensures that there are clear communication paths within the project team and the organisation and supplier • acts as main point of contact between the supplier and the organisation • produces and monitors financial reports including entry and maintenance of all actual time and expense against the master plan • day-to-day management of supplier staff assigned to the project • quality assures the work of supplier staff assigned to the project • encourages the transfer of product knowledge and skills to the appropriate staff within the organisation. | |

| Title | Role |
|---|---|
| Project team members | The staff who actively work on the project, at some stage, during the lifetime of the project. Some may have a specific role — for example, the team might include a project administrator (see below). |
| Responsibilities | |
| <ul style="list-style-type: none">• Team members' roles will vary depending on the type of project. Typically they might be to:<ul style="list-style-type: none">– provide functional expertise in an administrative process– work with users to ensure the project meets business needs– document and analyse current and future processes/systems– identify and map information needs– define requirements for reporting and interfacing– train users. | |

| Title | Role |
|--|---|
| Project administrator or coordinator | This person is responsible for maintenance of the project plan, maintenance and updating of project documentation and website (if appropriate). They provide administrative support to the project manager. |
| Responsibilities | |
| <ul style="list-style-type: none"> • sets up and manages support functions covering planning, tracking, reporting, quality management and internal communication • produces consolidated reports to the project steering board, including milestone summary, key issues, risks, benefits, summary of costs incurred • establishes standards, tools and procedures for use on the project, including issue, risk, change and information management • manages the project library • reviews project activities for compliance with procedures and standards • manages the support and provision of project tools and equipment • manages data security, software and licence control • assists with the production of user documentation • assists with testing. | |

| Title | Role |
|---|---|
| Systems developer | The person who works with the project manager on defining and executing development requirements. |
| Responsibilities | |
| <ul style="list-style-type: none"> • works with the project manager on definition of development requirements and priorities • migrates data • interfaces with other systems • reports configuration and deployment • sets up and maintenance of security rights and access permissions • contributes to technical strategy, policy and procedure • develops and operates technical tests • produces technical documentation to agreed quality standards • reports on progress/issues to management and users. | |

| Title | Role |
|--|---|
| System administrator | The person who manages and supports the IT system environments. |
| Responsibilities | |
| <ul style="list-style-type: none"> • manages and supports the various environments • manages and supports network operating systems • manages and supports database • devises and implements back-up and disaster recovery measures • contributes to technical strategy, policy and procedure • develops and operates technical tests • produces technical documentation to agreed quality standards. | |

| Title | Role |
|---|--|
| Programme manager | This role is relevant if there are several related projects. |
| Responsibilities | |
| <ul style="list-style-type: none">• has overall management and coordination of the programme of projects• contributes to strategy, policy and procedure• manages of supplier/contractual relationships• has budgetary control of the programme of projects• monitors and responds to issues at the programme level. | |

Activity 3



- 1 Draw a diagram to illustrate the organisation structure for a project in which you participate.
- 2 Draw up brief, project-specific job descriptions for each of the individuals identified in your project organisation structure diagram.

Building the project team

In any project, the right team must be assembled and developed. There is a considerable body of literature on this topic.

For information on Team Building as collated by Carter McNamara, MBA, PhD for the Free Management Library:



http://www.managementhelp.org/grp_skill/teams/teams.htm

For information on *Developing a Productive Team* — a paper written by Arnold Bateman of the University of Nebraska-Lincoln:



<http://ianrpubs.unl.edu/misc/cc352.htm>

Projects that involve changing systems or processes need a combination of people who:

- know why the process is being carried out
- know — in detail — how it is done
- can inject new ideas.

If the process is related to the use of IT systems there will be a need for people who fully understand the capabilities of the system.

Team members might be chosen for their specialist experience in a particular function, but they will also bring to the team their own style of working and problem solving.

Resourcing and supporting the team

The skill mix within the team is important, but so is the fact that the team must feel empowered to deliver the project. They must be able to question the status quo and offer solutions that may impact across the organisation. This means they must have the backing of a sponsor at senior management level who can resolve cross-departmental issues as they arise.

A further consideration is how the participants' time is allocated. There are normally three options:

| Option | Advantages | Disadvantages |
|---|---|--|
| <p>'Committed' secondment</p> <p>A resource devoted fully to project but with clear 'return path' following completion of project.</p> | <ul style="list-style-type: none"> • Fully committed to task for duration and has reassurance of returning to established post. • Is seen by the stakeholder community as having an active interest from both perspectives. | <ul style="list-style-type: none"> • May lose currency of knowledge if appropriate networks are not in place. • Could still be summoned back to former post in a crisis. |

| Option | Advantages | Disadvantages |
|---|--|---|
| <p>'Shared' secondment A resource shared between project and established role.</p> | <ul style="list-style-type: none"> Retains currency of knowledge from established post. | <ul style="list-style-type: none"> Likely to be drawn back to established post in 'crisis' periods, as higher priority. Often ends up doing two 'full time' jobs. |
| <p>'Committed' post A resource devoted fully to project.</p> | <ul style="list-style-type: none"> Committed to task, having severed ties with previous post. | <ul style="list-style-type: none"> May feel insecure as to eventual role at end of project. May be viewed by stakeholder community as remote from 'real' processes. |

This decision is dependent on the type and size of the organisation and the project, although a shared secondment route is generally discouraged as the disadvantages listed above frequently turn into reality.

In the context of planning and implementation projects, singular commitment from individuals tends to reap better rewards, especially in the context of the time constraints previously mentioned.

If a committed resource is available, then the question of secondment or committed post depends largely on the phase of work being undertaken and its duration. For example, where system implementation projects are concerned, it might be more suitable to employ full-time secondees during the project selection phase, but full-time committed posts during the implementation phase itself.

Business process reviews usually tend to be carried out by seconded staff, although if an organisation is embarking on a comprehensive re-engineering project, it is likely that it will need committed posts to see the changes through the implementation and embedding stages.

Where a project is broken into different phases, then ideally some continuity of staffing should link the phases. If not, then issues such as handover and bringing new staff up to speed need to be factored in to the time and resource estimates.

Activity 4



Create a team charter or code of conduct for a project management team of which you are a member. This should define the mutual expectations of each team member.

Staff development

Staff development is frequently ignored at the project planning and costing stages (see Sections 3 and 4). This is frequently a cause of serious project failure.

There are a number of different types of staff development that need to be considered in planning a project:

- training/development for the project team to allow them to carry out the work
- training/development for end users in a newly implemented system or a changed process
- general awareness-raising and development to prepare the organisation for change.

The first two relate directly to the project but the third, although vital, is not usually the immediate duty of the project team.

Systems implementation — where change management should be a separate responsibility — is a case in point. Change management is about the organisation's culture and values. A new system can support a changed approach but the system itself is not the change. Unless the organisation is properly prepared for the change, the system will be seen as the cause of change and may be resented.

An example of this is the implementation of virtual or managed learning environments (VLE). Such environments are necessarily part of an institutional strategy about learning and teaching. An institution cannot be turned into a different type of learning organisation simply by implementing a VLE. Systems projects must run in tandem with change projects. If you expect systems implementers to do both jobs, this will inevitably lead to (an avoidable) failure.

Any training and development needs of the project team must be identified at an early stage so that necessary activities can be built into the plan. The team might require an introduction to project work and other team formation activities as well as more project-specific training. In the case of projects with a significant IT component, training could consume a significant proportion of the project costs.

Where it is likely that a considerable investment will be needed, the risk of staff undergoing expensive training and then obtaining a job change must be considered. It is possible to issue staff with a contract for the duration of the project that specifies a requirement to pay back training costs should they resign within a certain time period. This could be particularly valuable if market conditions suddenly create a demand for the skills the project has invested in.

An alternative is to consider the relative cost of paying a slightly higher salary to attract staff who already have the skills to do the job. This will have the additional benefit of saving time. However, you should be cautious about buying in skills on a short-term contract basis unless there is no other option. Contractors are unlikely to develop the same sense of project ownership, and the skills are lost to the organisation as soon as the project is over. Furthermore, contractors are unlikely to understand the context of the organisation as well as in-house staff.

End-user training is essential to ensure acceptance and effective operation of new processes or systems. The timing of training is critical, and must be carefully planned. Some users might need training at an early stage to contribute to the development and user acceptance testing phases of the project. Other users should not be involved in training too long before they are required to use the new process or system.

When scheduling training activities, you should take account of typical processing cycles within the organisation. For example, it is unlikely that managers could sanction the release of staff for training in the middle of known peak activity periods. The commitment of such managers is vital to ensuring the success of training.

The project sponsor has a role to play in ensuring that managers understand the importance of training and work, and that their staff are able to attend scheduled sessions. Managers also need to send the right people. Even well-planned training programmes go awry if staff cancel bookings at the last minute and managers send inexperienced staff.

Activity 5



Look at the project team members you identified during Activity 3. Now analyse whether each project team member has the skills required to enable them to carry out their role. If not, what support or training should they receive?

Project partnerships

Projects can be stand-alone and can be contained within an organisation without the involvement of partners. Often, however, they are multi-disciplinary or cross-organisational and comprise a number of partners. Partners may be individuals or groups from different divisions or cost centres within an organisation, but will more likely be from different organisations.

A partnership is an arrangement in which objectives are shared and a common agenda is developed between different agencies in pursuit of a common goal. Shared interests include funding, risks and rewards. Partnerships involve formal or informal arrangements for working together towards a common purpose.

Some publicly recognised types of partnerships include:

- Community Planning Partnerships
- Social Inclusion Partnerships
- Learning Partnerships
- Public Private Partnerships.

Partnership relationships can be formalised through creation of documentation that defines the roles, responsibilities, rights and obligations of the partners, such as:

- Memorandum of Understanding
- Partnership Agreement
- Partnership Contract
- Partnering Contract
- Partnering Agreement or Project Charter to complement formal contract terms.

Partnering

Partnering is a form of collaborative working between customers and suppliers. In contrast with traditional 'arm's-length' procurement and contract management approaches, partnering is characterised by a greater degree of openness, communication, mutual trust and sharing information.

The aims of partnering arrangements are often expressed in terms of business outcomes rather than specific outputs or improvements. Their success is particularly dependent on the people and relationship aspects.

The tone of a partnering arrangement differs from a traditional contract and the behaviours of those involved are also different. The management of a partnering arrangement should be primarily proactive rather than reactive. Both parties work together to identify optimum solutions and to anticipate and resolve problems in a constructive, collaborative way. The arrangement needs to be based on mutual trust and openness, a recognition that the relationship itself is as important as the contract and a conviction that partnering makes sound, commercial sense.

If successfully implemented, partnering is an immensely powerful tool that can contribute to successful project and programme outcomes and deliver significant improvements in value for money. It is more likely to succeed where there is a mature approach to relationship management. Above all, it will require effort and commitment from both sides to make it work.

Reference

Guide to Effective Partnering on the OGC website:



http://www.ogc.gov.uk/sdtoolkit/reference/ogc_library/procurement/EffectivePartneringpublish.pdf

Principles of partnership

Regardless of the nature of the partnership, the underlying principles remain the same. Common objectives or shared interests are the most powerful motives for forming a partnership, but they are not sufficient in themselves. There are other factors necessary for the creation and sustainable operation of a partnership. These are:

- trust
- respect
- ownership
- equality.

For a partnership to work, individuals and stakeholders must have mutual trust. Trust cannot be created by the force of law, contractual arrangements or by the conventional requirements of a job. Rather, it is fostered by mutual expectations and by the sharing of common values and commitment.

Respect is an acknowledgement of something of value in the other person or organisation. However, respect does not necessarily mean agreement.

Ownership is the degree to which the beneficiaries or stakeholders effectively participate and are held accountable for the actions of the partnership. If ownership is lacking, or perceived to be lacking, it is difficult for a partnership to succeed.

Although it is possible to have a partnership between juniors and seniors, its sustainability is bound to be problematic. The issue is normally to do with perceived equality or power relations. There has to be real and substantive equality between partners. This may have to be worked at by all concerned.

A healthy partnership

A healthy partnership is one in which partners:

- can demonstrate real results through collaboration
- accept that common interest supersedes partner interest
- use 'we' — and mean it — when talking about partner matters
- are mutually accountable for tasks and outcomes
- share responsibilities and rewards
- strive to develop and maintain trust
- are willing to change what they do and how they do it
- seek to improve how the partnership performs.

Reference

The Smarter Partnerships website of the Employers' Organisation for Local Government contains useful tools and resources:



<http://www.lgpartnerships.com/>

Activity 6



The Smarter Partnerships website www.lgpartnerships.com contains 14 case studies on partnership development and skills. Each of the case studies lists a number of lessons learned from the project partnership experience. From these lessons learned create a checklist of good practice you might adopt in your next partnership project.

Project charter

For large-scale projects with a large number of stakeholders, it might be a good idea to produce a project charter. Although this is not essential documentation, it can be a useful communication tool. It can help to show that user consultation has taken place and can reinforce the key objectives of the project for a wide audience.

To view an example of a project charter for a major administrative systems replacement project go to:



www.jiscinfonet.ac.uk/InfoKits/infokit-related-files/unn-project-charter

Activity 7



Try to identify a project that you think would benefit from a project charter. In what ways might the project benefit from production of a project charter?

Effective communications

Effective communications are the foundation of project effectiveness. Effective communication must be relevant to the matter in hand, and should be directed at the right people, at the right times. All stakeholders will not necessarily be treated in the same way, and mechanisms should be established to ensure two-way channels of communication. In addition, care needs to be taken to avoid information overload.

As a topic, communications cover many different aspects:

- vertical (upwards and downwards)
- horizontal
- body language
- verbal
- written
- formal
- informal
- interpersonal
- group.

Problems in communications

Some common causes of problems in communications are:

- believing that if you are aware of something, then everybody else will also be aware of it
- unthinking dislike, resulting in not writing things down and not communicating
- expecting that a few others who are aware of something will transmit it to other relevant parties
- interpreting what you are told or have read in a different way to what was intended
- communicating what is urgent rather than what is important

- believing that if there are no problems, then there is nothing to communicate
- producing substantial amounts of data with no relevant content
- disrespecting or undervaluing the opinions of others.

Key principles of communications

Here are some communication pointers that can help project managers to avoid the types of problems outlined above.

- Support the premise that the project must have a high degree of communication.
- Do not learn of the need for communication by responding to the lack of it.
- Develop effective communication skills — for example,
 - listening
 - speaking
 - questioning
 - sharing feedback.
- Develop meeting management skills.
- Be assertive and take responsibility for your communications — for example,
 - tell someone when you don't understand a communication
 - suggest when and how someone could communicate more effectively.

Communications plan

Establishing effective communications and media channels increases the likelihood of a successful project. This can be done by creating a communications plan based upon the work on stakeholder analysis. In developing this plan, these considerations should be made:

- What key messages are to be conveyed?
- Which key stakeholders are you going to convey these messages to?
- How will the messages be conveyed to each stakeholder?
- Who will convey the messages?
- When will the messages be conveyed?

- How will you know whether the stakeholders are being reached?
- In what ways will the stakeholders communicate back?

Activity 8



Create a communications plan for one of your projects. How might you measure the success of your project communications?

Notes on Activity 8

Does your communication plan address all of the points in the bullet point list above?

Suggestions for communication success measures might include:

- Whether stakeholders received information:
 - of the right type?
 - in an appropriate format?
 - in the agreed timescale?
- Number of website hit rates.
- Whether stakeholders reply to phone calls and e-mails. If so, how long does it take them?
- Number of complaints.
- Use of satisfaction questionnaires (for example, 90 per cent satisfaction).
- Use of evaluation forms.
- Number of requests for information.

It is not always easy to find measurable success criteria — for example, what are the key messages or right type of information as far as a stakeholder is concerned? Also, you should be careful that the measures of success don't only concentrate on what is easy to measure, rather than what might be important.

Resolving conflict

Conflict occurs when individuals or groups are not obtaining what they need or want, and are pursuing their own self-interest. It is important to be able to recognise early indicators of conflict, some of the causes of conflict and to develop strategies for its resolution.

The beginnings of conflict can arise through poor project communications, dissatisfaction with the project management style, weak leadership and lack of openness. Searching for the causes of conflict is crucial for resolving the conflict. A number of frequent causes of conflict are summarised below:

- needs or wants are not being met
- values are being tested
- perceptions are being questioned
- assumptions are being made
- knowledge is minimal
- expectations are too high or too low
- personality, gender, age or race differences are present.

Some of the destructive outcomes of conflict can begin to be addressed if there is recognition of — and attempts to achieve — constructive processes like the ones summarised below:

- clarifying important problems and issues
- adopting solution-focused approach to problems
- involving the people concerned in resolving issues important to them
- achieving authentic communication
- helping to release emotion, anxiety and stress safely
- building cooperation among people through learning more about each other
- joining in resolving the conflict.

Avoiding and resolving conflict is most effective where there is close collaboration, aimed at achieving consensus or agreement. The ability to use collaboration requires recognition and respect for everyone's ideas, opinions, and suggestions. Consensus requires that each participant must agree on the point being discussed before it becomes a part of the decision. Not every point will meet with everyone's complete approval. Unanimity is not the goal. The

goal is for individuals to accept a point of view based on the common purpose of the project.

Handling negotiations

Most people engage in negotiations of one kind or another on a regular basis. However, if you are an effective negotiator in business, then you will be aware of the structure and dynamics of negotiations, and the capacity to think systematically, objectively, and critically.

There is no one best style of negotiation. Each individual finds a style that is comfortable for them personally. With the right skills, most people can negotiate successfully and can reach agreements where all sides feel at least some of their needs have been satisfied.

The approaches that are most likely to help you achieve mutually agreeable outcomes to negotiations include the following:

- adopting a positive (win-win) frame of mind. Attitudes that people bring to negotiations play a significant role in outcomes
- having a concrete strategy — being clear on what is important and why
- knowing the BATNA (Best Alternative to a Negotiated Agreement) — for example, an individual's lowest price or minimum position
- separating people from the problem
- maintaining focus on interests, not positions — and considering the other party's situation
- seeking options for mutual gain
- generating a variety of possibilities before deciding what to do
- aiming for an outcome based on objective criteria
- paying attention to the flow of negotiation
- taking the intangibles (for example, location, personality, style, time available) into account, communicating carefully and courteously
- using active listening skills — rephrasing, asking questions.

Reference

Useful materials and many links can be found on Communications and Interpersonal Skills, including conflict resolution and negotiating skills, on this website:



<http://www.managementhelp.org/>

Activity 9



Read the overview on *Negotiations and Resolving Conflicts* prepared by Professor E Wertheim at:

<http://web.cba.neu.edu/~ewertheim/interper/negot3.htm>

This guide will be easier to follow if you think about a specific negotiation or conflict situation you have recently been involved in.

- 1 Describe a project situation in which you had to resolve conflict or handle a negotiation.
- 2 How well did you manage this situation and why?
- 3 Using Professor Wertheim's guidance, what would you do differently next time?

Section 3: Study notes for Outcome 2

Purpose of this section

This Section provides study notes and activities to support Outcome 2: Control a project budget. These notes and activities will help you to cover the following knowledge and/or skills required for this Outcome:

- Project funding
- Cost headings for project budget
- Estimating and forecasting techniques
- Monitoring, updating and reporting.

To achieve this Outcome you must provide evidence of the above knowledge and/or skills by producing examples of forecasted and actual project budgets — including financial monitoring reports for a fixed period of a project.

In providing this evidence, you should:

- identify sources, amounts and timings of funding to cover project costs
- identify and justify appropriate cost headings for the project budget
- apply estimating and forecasting techniques to create reliable projections for project spend
- further apply these techniques to re-profile spend during the lifetime of the project
- monitor, update and report on project income, expenditure and budget variations for two reporting periods.

The notes in this section — alongside tutor input and other reading on the topics — should enable you to produce examples of forecasted and actual project budgets, including financial monitoring reports for a fixed period of a project. These notes cover the following topics:

- project costs and funding sources
- costing the project
- estimating and forecasting techniques
- monitoring, updating and reporting.

You should read this section in conjunction with Section 4, so you can integrate the application of techniques such as estimating, scheduling, tracking and reporting to resource management and project stages.

Project costs and funding sources

The business case for the project will provide broad estimates of the projected whole-life costs of the project. These costs will possibly be broad estimates, but should be based on data that was as accurate as possible at the time created. These costs need to be revisited and revised in the light of new, additional, more accurate and up-to-date information.

The types of costs incurred in a project will be split between capital or one-off costs and operational costs.

Some typical major cost headings include:

- hardware
- software
- equipment
- project staff
- other staff
- consultancy
- staff development
- office overheads
- travel
- hospitality
- consumables
- contingency.

The proposed expenditure for the project must be linked to available budgets and existing commitments.

Questions to be addressed at this stage:

- Will funding be sought from single or multiple sources? For example
 - government grant
 - private investors
 - partners
 - European funding
 - contributions from several internal budgets.

- Has funding been confirmed?
- Do costs vary year on year?
- Is there sufficient funding to cover project costs?

Costing the project

You will need to develop a budget or financial plan for a project to be able to monitor and track receipt of funds and project expenditure. It could be that an initial outline plan is available as part of the project initiation document.

There is no reason for IT or any other projects to run over budget if the project is costed properly at the outset. It is not uncommon to see project budgets that cover only part of the costs. There are a number of frequently occurring reasons for this:

- a tendency to focus on initial purchase costs and ignore elements such as staffing
- poor planning that doesn't allow sufficient resources for training and staff development
- blind faith in optimistic supplier estimates
- project managers who don't think their senior managers could cope with knowing the true cost.

The last point should not be underestimated. In many organisations the tendency for IT projects to run over budget is accepted as the norm. Managers find it far easier to keep asking for small incremental sums than to give their sponsor the possible shock of revealing what the whole project will actually cost. Project costs are relatively easy to conceal in large IT departments, especially where existing staff are carrying out the work.

The types of costs incurred in a project will be split between capital or one-off costs and operational or running costs. The following table shows some of the major cost headings and suggests issues to think about when trying to cost those items.

| Cost heading | Issues to consider |
|------------------|--|
| Hardware | <ul style="list-style-type: none"> • Is it more cost effective to buy or lease? • Include maintenance agreements. If purchasing, do you pay in advance or enter into a financing agreement? |
| Software | <ul style="list-style-type: none"> • How many licences are required in each phase of the project? • Are future annual increases capped? |
| Equipment | <ul style="list-style-type: none"> • Is it more cost effective to buy or lease? • Do you need maintenance agreements for printers, etc? |
| Project staff | <ul style="list-style-type: none"> • Include recruitment costs — for example, advertising or agency fees. • Include employers on-costs — for example, pension and NI. • Where staff are on incremental pay scales, allow for annual increments. • Allow for annual pay increases. • Do you need to allow for overtime working? • What will happen at the end of the project — do you need to build in redundancy payments? |
| Other staff time | <ul style="list-style-type: none"> • Do you need to reimburse other departments for staff time spent in assisting the project — for example, porters moving equipment, IT staff overtime, staff attending meetings/training? |
| Consultancy | <ul style="list-style-type: none"> • Are consultants paid a daily rate or a fee for the job? • What are their daily travel and expenses limits? • Where will they be travelling from and how often? |

| Cost heading | Issues to consider |
|-------------------|--|
| Staff development | <ul style="list-style-type: none"> • What training is required at each stage of the project and for how many people? • Can you save money by advance block booking of external training? • Is it more cost effective to train on-site rather than pay travel costs? • Are there any online training materials available? • For IT staff weigh up the cost (including time) of training versus taking on skilled staff at higher salaries. |
| Office overheads | <ul style="list-style-type: none"> • Include any chargeable items such as heating, telephones, security, postage, and so on. |
| Travel | <ul style="list-style-type: none"> • Include travel to meetings, conferences and training courses. |
| Hospitality | <ul style="list-style-type: none"> • Will you be required to provide catering for meetings or training events? |
| Consumables | <ul style="list-style-type: none"> • Include stationery, printer cartridges, and so on. |
| Contingency | <ul style="list-style-type: none"> • What is a reasonable contingency estimate given the amount of risk and uncertainty in the project? |

Budget plan

A budget plan like the one illustrated in the following table is a tool for planning expenditure over time. The format of a project budget will depend on the procedures of its partners and the requirements of funding providers.

The budget plan is usually divided into revenue costs and capital costs. Revenue costs are all costs that relate to the running of the project while capital costs relate to the purchase of any items that will have a resale value longer than one year. How the expenditure headings are listed will depend on the type and complexity of the project.

| Budget Headings (related to project activities) | Unit | Cost Per Unit | Quantity x cost per quarter | | Project annual total | Funding sources (eg partners, grants, cost centres) | Recurrent Costs per annum (costs to be met after project end) |
|---|------|---------------|-----------------------------|----------|----------------------|---|---|
| | | | Year 1 | | | | |
| | | | Q1 Q3 | Q2 Q4 | | | |
| Revenue | | | | | | | |
| Office costs | | | | | | | |
| Salaries | | | | | | | |
| Overheads | | | | | | | |
| Professional fees | | | | | | | |
| Other (specify) | | | | | | | |
| Total revenue | | | | | | | |
| Capital | | | | | | | |
| Building costs | | | | | | | |
| Furniture/ fittings | | | | | | | |
| Land | | | | | | | |
| Other (specify) | | | | | | | |
| Total capital | | | | | | | |
| Total revenue plus capital | | | | | | | |

Activity 10



Using the budget plan illustrated above as a model, create a budget plan for one stage of one of your projects.

Estimating and forecasting techniques

Estimating costs

It can often be useful to distinguish between fixed, variable, semi-variable and step costs:

- Fixed costs remain constant for a specified time period — for example an office lease.
- Variable costs vary according to volume of activity — for example, external training costs varying with the number of trainees.
- Semi-variable costs include both a fixed and variable component — for example, computer maintenance contract based on basic annual fee, plus additional cost per call out.
- Step costs are fixed for a given level of activity then change at some critical point — for example, electricity usage costed on basis of one rate for first block of units up to a stated limit and a different rate for units used beyond that limit.

Take care with staffing costs, and take into account the need to pro-rata full time costs for those who do not work on the project full time. Full time equivalent costs should be used to estimate the costs of employee time and should include pensions, national insurance and allowances, as well as basic salaries. Part-time involvement in a project can be accounted for by team members completing project time sheets, which can then be used to calculate actual cost of project participation.

Costs estimation can be difficult, depending on the class of costs under consideration. Be prepared to seek advice or input from finance staff, accountants or economists.

Reliable projections for project spend

Straightforward budget plans like the ones illustrated in the table above can be created and managed using standard spreadsheet software. The spreadsheets can be used to explore future budget options and compare what-if scenarios. However, there could be occasions where there is a requirement to apply specific financial budgeting and forecasting techniques or adopt in-house software to satisfy corporate and project needs for lengthy and complex projects, for example.

It might be the case that forecasting techniques such as Net Present Value and Internal Rate of Return have been used to create and assess the costed options within the business case. As the business case is used as a decision-making tool to assess the ongoing viability of a project, revised calculations and updates will be required during the life time of the project.

Net Present Value

NPV compares the value of £1 today to the value of that same £1 in the future, taking inflation and returns into account. This means discounting the amounts over time.

The simplest way to apply discounted cash flow analysis is to calculate the present values of all the components of the cash flow and sum them. The result is called the Net Present Value (NPV). If the NPV is positive (greater than zero) this means that, even when their time value is considered, the benefits are greater than the costs and the project is therefore viable or worthwhile.

| Year | Cash flow (negatives are costs) | Present value (discounted at 3.5%) | Calculation |
|--------------|---------------------------------|------------------------------------|----------------------------|
| 0 | - 200 | - 200 | |
| 1 | - 300 | - 290 | - 300/1.035 |
| 2 | - 100 | - 93 | - 100/(1.035) ² |
| 3 | 200 | 180 | 200/(1.035) ³ |
| 4 | 500 | 436 | 500/(1.035) ⁴ |
| 5 | 500 | 421 | 500/(1.035) ⁵ |
| 6 | 500 | 407 | 500/(1.035) ⁶ |
| 7 | 500 | 393 | 500/(1.035) ⁷ |
| Total | 1600 | 1254 | |

Reference

Net Present Value



http://en.wikipedia.org/wiki/Net_present_value

Internal Rate of Return

Decision makers can find the meaning of Net Present Value difficult to grasp and to relate to everyday concepts. Because of this, another way of quantifying a discounted cash flow is often used — the Internal Rate of Return (IRR). IRR has the advantage that it relates to the size of the original investment. As the name suggests, the IRR of an investment measures its rate of return, whereas NPV measures the size of the return. For example, if you invest £1,000 in a project with an IRR of 15 per cent, it is exactly the same as investing the same £1,000 in an interest-earning bank account at an interest rate of 15 per cent. The IRR of a cash flow

is defined as the discount rate which would result in that cash flow having an NPV of zero.

As an investment decision tool, the calculated IRR can be used to decide whether a project is worth continuing to invest in — although executive decisions should take into account both the NPV and IRR results. Surveys indicate that executives prefer IRR over NPV. Apparently, managers find it intuitively more appealing to evaluate investments in terms of percentage rates of return than dollars of NPV. However, NPV remains the ‘more accurate’ reflection of value to the business.

Reference

Internal rate of return



http://en.wikipedia.org/wiki/Internal_rate_of_return

Monitoring, updating and reporting

Budget and actual variance record

The budget and actual variance record illustrated in the following table below is used to monitor actual expenditure against what was planned in the budget plan. Anyone looking at this quarterly monitoring record should be able to see where change has taken place, and where no change has occurred. It should provide a clear picture of what happened during the quarter and is essential data for evaluation.

Budget and actual variance record

| Budget Headings | Quarter 1 | | | Quarter 2 | | | Quarter 3 | | |
|----------------------------------|-----------|---|---|-----------|---|---|-----------|---|---|
| | * P | A | V | P | A | V | P | A | V |
| Revenue | | | | | | | | | |
| Office costs | | | | | | | | | |
| Salaries | | | | | | | | | |
| Overheads | | | | | | | | | |
| Professional fees | | | | | | | | | |
| Other (specify) | | | | | | | | | |
| Total revenue | | | | | | | | | |
| Capital | | | | | | | | | |
| Building Costs | | | | | | | | | |
| Furniture/ fittings | | | | | | | | | |
| Land | | | | | | | | | |
| Other (specify) | | | | | | | | | |
| Total capital | | | | | | | | | |
| Total revenue and capital | | | | | | | | | |

* P = Planned
A = Actual
V = Variance

Activity 11



Using the table illustrated above as a model, create a budget and actual variance record for one stage of one of your projects (the same stage and project as used in the previous exercise).

Section 4: Study notes for Outcome 3

Purpose of this section

This section provides study notes and activities to support Outcome 3: Monitor and control a project. The notes and activities will help you to cover the following knowledge and/or skills required for this Outcome:

- project deliverables
- plans for project stages and achievement of milestones
- delivery tasks and task interdependencies
- scheduling
- process tracking
- quality review
- lessons learned.

To achieve this Outcome you must provide evidence of all the above knowledge and/or skills by producing project documentation that demonstrates your ability to monitor and control the tasks and resources of a project — including the quality of the project deliverables — for a fixed period of a project.

In providing this evidence, you should:

- define project deliverables, and the standards and quality criteria applied to their production
- create a plan for each project stage, scheduling tasks and resources, and identifying milestones
- update plans, with reasons for changes, to reflect actual activity and progress for two reporting periods
- explain the purpose of one of the scheduled quality reviews, including who should attend and why
- describe how any lessons learned might be recorded during the project and how they could be shared.

The notes of this section — alongside tutor input and other reading on the topics — should enable you to demonstrate your ability to monitor and control the tasks and resources of a project, including the quality of the project deliverables, for a fixed period of a project. These notes cover the following topics:

- Project management processes
- Project planning
- Planning tools
- Estimating
- Analytical planning techniques
- Contingency planning
- Project control mechanism
- Record keeping
- Monitoring and review process
- Managing by exception
- Re-planning
- Quality reviews
- Lessons learned.

Project management processes

Section 1 presents a diagram that illustrates the main components or processes of a project management framework. This clearly shows that some elements — namely project start-up and project closure — occur only once. The remaining elements — planning, managing and controlling — form a continuous cycle that runs throughout the project up to its completion.

The number and names of processes can vary from one project management methodology to another. However, regardless of such differences, the principles are the same and each will represent an approach that is cyclical and iterative by nature.

Many of the techniques that are deployed during the creation of the project initiation document and starting up the project are used throughout the life of the project — for example:

- Costing and budgeting (see Section 3)
- Risk analysis (see Section 5)
- Stakeholder management (see Section 2)
- Planning (see below).

Project planning

The project plan lies at the heart of project management. As such, it is the key to controlling the progress of the project. The managing director of a pharmaceutical company allegedly noted that 'We never seem to have time to plan our projects, but we always have time to do them twice.'

(Turner, JR (1999) *The Handbook of Project-Based Management*, McGraw-Hill, p 5).

Only one thing about any project plan is certain — it will be out of date as soon as it is written. Planning is a developmental process that goes on throughout the life of a project. It isn't finished until the project is complete. Initial draft plans are usually over-optimistic but are nevertheless invaluable in steering progress.

The development and recording of project plans is a matter of personal preference, but there are a number of pointers to successful planning.

Write the plan for your context

There is no such thing as a standard or template plan. A commercial software supplier or consultancy firm, for example, may present their standard plan at an early stage in a project's initiation. This may be a useful initial template as it is based on tried and tested methodologies and past experience but in each new circumstance it is essential that the new context is taken into account.

Think of the plan as a flexible framework

A plan must be regarded as a flexible framework amenable to adaptation and change as the project progresses. It is no good sticking rigidly to a plan that isn't working and ploughing ahead regardless. This developmental process has been likened to captaining a yacht on its way from A to B. The captain knows where the objective (B) is, but the optimum route may vary from hour to hour as the wind and weather conditions change.

Don't make it too detailed

Following that example through, the Rolling-Wave method of planning is based on the premise that detailed forward planning should be arranged, not for the ultimate objective, but only for as far ahead as is sensible at the time. There are managers who try to plan a project in minute detail from beginning to end in the hope of eliminating uncertainty. This isn't realistic. A detailed plan takes considerable time and effort to develop and maintain. A plan that is too detailed and too far ahead is more likely to consume resources unnecessarily and become inflexible.

Break it into phases or stages

This is one of the reasons a plan needs to be broken down into phases or stages. The completion of each phase may require the achievement of a set of milestones expressed in the plan. Phasing and milestones represent a logical sequence of activities required to achieve a project's goals. A milestone plan is a high-level summary of the whole project. It should be easy to understand, logical and focused on what needs to be delivered, not how it is to be delivered. Phase boundaries highlight points in the project where progress is reviewed and the plan reassessed.

Write a well-crafted plan

The number of phases and milestones in a plan is necessarily dependent on the scale and complexity of the project. However, plans are more than administrative tools. They are political and communication tools as well. A plan provides a picture of the project's progress to stakeholders as well as to the project team. A well-crafted plan can help to ensure the success of the project by identifying quick wins and easily achievable stages early in the life of the project. This helps to build stakeholder confidence and to boost the morale of the project team.

Pilot the changes to be implemented

Depending on the nature of a particular project it may be wise to think about phasing the plan to include piloting the changes to be implemented. Pilots tend to attract substantial commitment from the people involved. They can also reveal a lot about project management.

Give each task a defined project deliverable

Whatever level of detail is planned, each task in the plan must have a clearly defined project deliverable. This means a tangible product that shows the task has been successfully completed. For instance, tasks with labels such as 'think about'; 'look at' or 'investigate' are of limited value. The definition of the output the task is to produce must be observable or otherwise tangible — for example, a document, a piece of code or a cleansed data file.

The guidelines above are based on well-established good practice in project planning, and have been shown to be effective in many projects. That said, it may be that some of the concepts applied to particular projects meet with resistance from steering groups or other relevant contributors. For instance, the concept of flexible planning can be uncomfortable for some people, since it frankly acknowledges the inherent risk and uncertainty involved. In these circumstances it is only possible to repeat the advice given above — the uncertainty won't go away, however much time is spent on planning.

Activity 12



What is the danger of having too few milestones in your project plan?
What is the danger of having too many milestones in your project plan?

Notes on Activity 12

Too few milestones might result in:

- lack of control
- quality issues
- risks materialising
- cost overruns
- time overruns
- project no longer viable.

Too many milestones might result in:

- too many review meetings
 - increased costs
 - people not available for reviews
- unnecessary extra paperwork
- people overstretched
- efforts expended on bureaucracy and not on project activities
- cost overruns
- time overruns.

Scheduling delivery tasks

There are many project planning tools and techniques on the market. At best they can be invaluable in helping to manage complex plans. At worst they can sap resources and energy and be a constant source of frustration. You need to find the one that works best for your particular project. This might be a simple spreadsheet. Or a whiteboard on the office wall is a constant visible reminder to the team of where they are and where they need to be. A team of people working on a multi-million pound

system implementation project indicated that they found this more helpful than the plans produced by a sophisticated software tool.

The following is an overview of some commonly used software tools. It is intended purely as an indication of the range and type of products available. SQA does not endorse any particular supplier or product.

Microsoft Project

The latest versions offer a range of techniques to track large projects, and programmes of projects. Microsoft Project deals in particular with task scheduling and resource allocation. To use Microsoft Project successfully, the user must be sure of their estimates of tasks, sub-tasks, timescales, resource availability and costs.

To start using Microsoft Project the project activities first have to be broken down into discrete tasks and sub-tasks. Each task is then given projected start and finish dates. Resources are allocated to the tasks (usually in the form of the people who will complete the tasks) and the overall costs involved. Tasks may also be linked to each other to indicate where one task depends on another.

When is Microsoft Project a useful tool?

As task scheduling is at the heart of a project, it is a useful tool for projects with discrete and predictable tasks that have to be performed in a particular order using well-defined resources. It is possible to use this approach to highlight major target dates and other milestones in the project, and to pick out a critical path of tasks and their dependencies.

Different views in Microsoft Project allow details of resource allocation to be seen, highlighting any resource clashes and showing periods of the project where resources might be thinly stretched. This is particularly useful for planning the allocation of staff time and for tracking project costs.

Once you are accustomed to using the basic techniques in Microsoft Project — which are based on spreadsheet tools — it can be an excellent tool to create 'what if' scenarios, predicting the effects of increased or fewer resources, or changes to time schedules.

Different versions of Microsoft Project include:

- a standard product suitable for small, individual projects
- a team version for sharing information among staff in different locations
- an enterprise version for managing planning at the organisational level.

Some people, however, find that Microsoft Project is too complex and restrictive for their purposes, and that it makes too many assumptions — especially if the project has ill-defined or complex tasks. In this case, alternative software tools might be more appropriate.

Open source software

'Open source' software is available free on the internet. Such software comes without guarantees as to risk, but there is a rapidly developing range of useful tools available in this way. Educational institutions, commercial companies and government organisations are increasingly using open source software for major applications such as the creation of Managed Learning Environments.

An example of open source project planning software is Planner, part of the GNOME office suite:



<http://developer.imendio.com/wiki/Planner>

This software provides a simpler tool than Microsoft Project for scheduling tasks and allocating resources.

Project Smart offers a template based on an Excel spreadsheet that offers an overview to see the progress of small projects at:



<http://www.projectsmart.co.uk/templates.html>

Some products on this list are open source, some are available at low prices.

A useful list of software tools for project management can be found on the website of the University of Glamorgan, at:



<http://www.comp.glam.ac.uk/pages/staff/dwfarthi/projman.htm#sw>

Alternatively try Google's own list of open source project management software.

Estimating

Any plan is based on estimates of the time and resources needed to complete an activity. The accuracy of those estimates depends on how much experience its author has had in similar activities. Where the plan involves activities outside the experience of the project team, the accuracy of the estimates decreases and the level of risk increases commensurately.

Adopting the Rolling-Wave planning approach means that estimates should become increasingly accurate as the project progresses. It is important that all members of the team understand the need for estimation in the project plan. If they fail to do so then they could become demoralised through viewing inaccurate estimation as failure. Where estimates are wrong, the team needs to discuss the reasons for this in a positive manner, so that all members can contribute to increasing the accuracy of future estimates.

You should be cautious about taking extreme approaches to estimating.

| | |
|------------------|--|
| Padding | Where individuals always try to give themselves a comfort margin in order to complete their deliverables 'on time' |
| Squeezing | Where individuals think the manager won't like the estimate so they reduce it to an unrealistic level |

Where a number of people are involved in working on a project plan, it is important to ensure that they all plan and estimate in the same way, and use the same techniques. For example, everyone needs to agree how holidays, sickness, training and other duties are allowed for in estimating how much time members of staff have available to work on the project.

Analytical planning techniques

Estimating the time needed for tasks is an inexact science, and as much help as possible is needed in refining these estimates, keeping track of variations against the estimates and predicting the knock-on effects on resources and product delivery.

There are a number of techniques available to help schedule activities. These include network analysis, PERT (Programme Evaluation and Review Technique) and Critical Path Analysis. These can be sophisticated techniques involving mathematical modelling and are often used in complex engineering projects.

Key actions

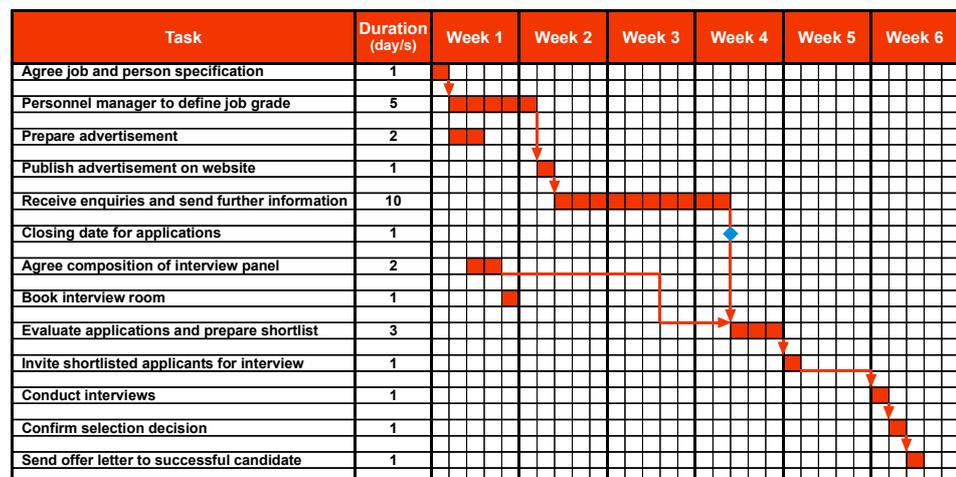
If you are new to project planning techniques it is advisable to start by using a simple method of analysis. It should be possible to start quickly with these techniques if project scheduling software is being used. But whether a software application is used or the plan is analysed manually, the same set of key actions needs to be undertaken:

- divide the project into tasks
- sequence the tasks
- identify dependencies between tasks — that is, where one task cannot start until another has finished
- estimate a timescale for each task
- convert the timescales to calendar dates.

Gantt Charts

The bar chart, invented by Henry Gantt, is a straightforward and useful graphical tool that can help you to visualise a project schedule. It is drawn with dates as the 'x' axis and the project tasks as the 'y' axis. Tasks are shown as solid bars between the estimated start and end dates. Arrows linking tasks can be used to show dependencies. Other drawing conventions are the use of a filled diamond shape to indicate a milestone or a filled circle to indicate a meeting date.

The diagram below shows a simple example of a Gantt chart mapping the tasks involved in appointing a new member of staff. The main dependencies in the process are shown by arrows linking the tasks.



Example Gantt chart showing key dependencies in a recruitment process

Project scheduling software enables more sophisticated planning by identifying working and non-working time and allocating resources to tasks. The Gantt chart can also be used to compare estimates with actual time taken, and so help with monitoring and rescheduling.

Activity 13



Draw a Gantt chart to map the key tasks and dependencies for one of the stages of a project you are familiar with.

Critical path analysis

If there are limited resources in a project, then knowing the critical path can be helpful. The critical path through a project is the longest route between dependencies or the minimum time required to complete the project. If any task on the critical path is delayed, then the project will finish late. Analysing the critical path allows critical tasks to be prioritised when planning, and can help with the identification of slippages or slack in the plan when tracking tasks. The reliability of the critical path depends on accurate estimates of time and of resources required.

Critical path analysis can be complex, especially if it has to be done manually. It depends on knowing which task has to finish before another starts, and which tasks can run in parallel. In the example above, the project can have a draft advertisement ready by the end of day three, but the advert can't be published until the personnel department confirms the job grade in the middle of week two.

The critical path uses two key dates:

- the earliest start date (this depends on the duration of preceding activities)
- the latest finish date (the date on which the task must be completed if it is not to delay later tasks).

If these two dates are known, the amount of float available can be identified. Float is free time. For example, a task is estimated to take two days. It can't start until day seven and it must be finished by day 11. This allows four days between the earliest start date and the latest finish date. Subtract the task duration (two days) from this and a float equal to two days is left. Where the float is zero, there must be a critical event on the critical path.

You should normally avoid manual analysis for complex plans, but it is useful to understand the theory and practice behind it. Knowing where there is slack or float and where there are critical dependencies can allow resources to be directed more effectively. The ability to identify a critical path through a project is a skill that can be developed with practice.

A comprehensive description of applying critical path analysis using network charts can be found at:



<http://www.mis.coventry.ac.uk/~nhunt/cpa/listof.htm>

PERT (Programme Evaluation and Review Technique) can help in optimisation of scheduling, using estimates of best possible timescales, worst possible timescales and most likely timescales.

Activity 14



Identify the critical path for the activities in the project Gantt chart created above.

Contingency planning

Projects invariably involve uncertainty and risk, so you will probably have to develop contingency plans for key areas of risk. This involves:

- identifying risk scenarios that could, in reality, have a significant impact on the ability of the organisation to carry out its business
- considering the available options.

An example of this could be a new administrative system that fails to go live on time. The contingency plan might be to carry on with the old system, in which case the following issues must be considered.

- Is this feasible?
- What essential maintenance would be required?
- Do we have the necessary skills?
- When would be the next opportunity to switch systems?
- How will we transfer the data?
- What additional costs will we incur?
- How will this impact our clients?

Other alternatives could involve carrying out the process manually, or contracting it out to someone else.

The number of scenarios likely to require a full contingency plan depends on the project. A contingency plan is more likely to be invoked should there be a failure to achieve major milestones. However, it is unlikely there will be more than a few such milestones in any project. Contingency planning should not be confused with the normal re-planning necessary to react to minor variances in the developing project plan.

Project control mechanisms and reporting framework

Controls help to ensure that the project:

- is producing the right products to the agreed quality
- is being carried out according to the schedule
- continues to remain viable against the business case.

Such controls might include:

| When | Questions | Evidence |
|--|--|---|
| Initiation or start-up | Should the project be undertaken? | PID Business case |
| End of stage/ phase or at predetermined interval | Is the project still on course? Is business case still viable? Are risks under control? Should the project proceed? | Progress reports Business case Risk register |
| Predetermined intervals during project | What is progress? | Progress reports — eg highlight reports |
| Ad hoc during project | Why has project exceeded tolerances? — eg budget, time | Early warning of any forecast deviation beyond tolerance levels — eg exception reports. |
| Project closure | Has project delivered everything expected? What lessons have been learned? | Final project report Evaluation report Lessons learned report (may all be contained within one report) |

Record keeping and audit requirements

Some of the key documents to help manage and control a project include:

- project brief
- business case
- project initiation document (PID)
- project organisation structure
- roles and responsibilities
- stakeholder analysis
- communications plan
- project plan
- budgets
- quality criteria
- risk log
- issue log
- request for change
- lessons learned log
- progress reports
- lessons learned report
- end of project report.

This is not an exhaustive list, and there may be others that could be added in specific contexts. In particular, additional documentary evidence such as beneficiary records and claims forms might be needed to meet legislative and funding body requirements.

It is not enough only to create the documents. It is imperative that they are kept up-to-date, version controlled and regularly reviewed. Documents should be used only if they work for and add value to the project. Documents and records — whether kept on paper or electronically — can be subject to internal or external audit at any time during or after the life of a project. At the end of the project, the records must be stored appropriately for the requisite statutory or funding body retention period, and must be available for retrieval on request.

Activity 15

- 1 Explain why or why not each of the documents in the list above is essential for the management of the project.
- 2 What additional documentation would you include and why?

Activity 16



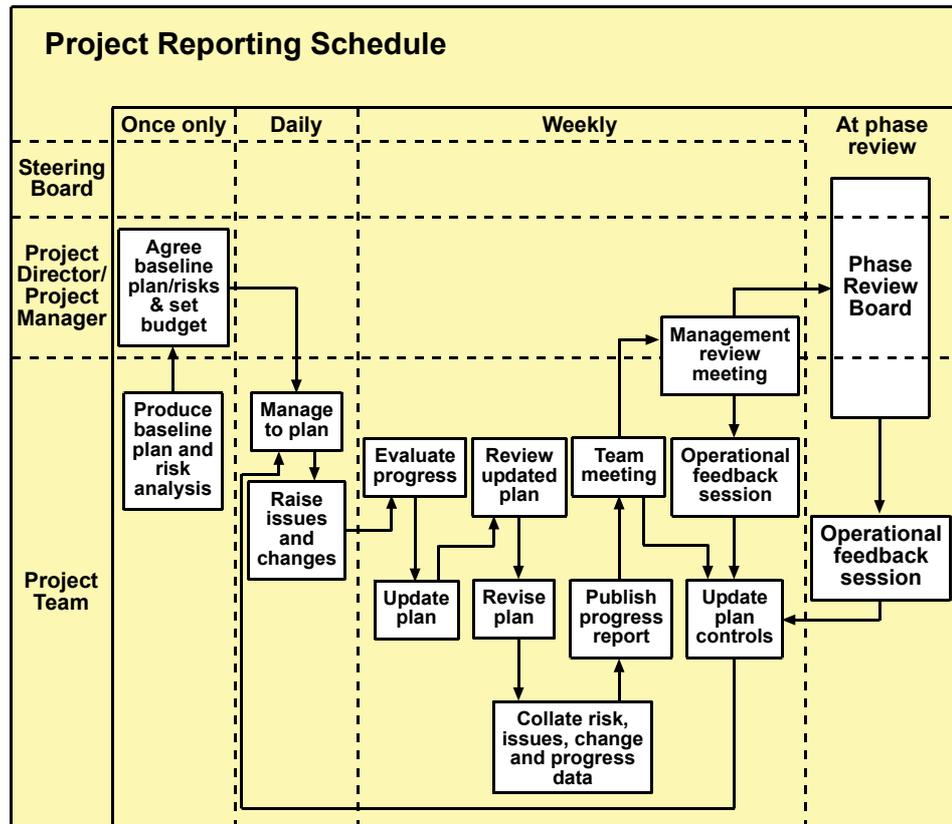
Design a simple version control system for managing your project documentation.

Monitoring and review process

The plan is only useful in controlling the project's progress if it is used as part of an ongoing monitoring and review process. Regular reviews allow problems and issues to be addressed by the project manager, staff and other stakeholders as they occur. Careful use of review tools can help staff to anticipate and avoid problems.

A well-constructed plan with clear deliverables should make it relatively easy to track progress. The project manager should set up mechanisms whereby the team regularly reviews which tasks have been completed/ delayed and what the impact is on the rest of the plan.

The following diagram shows a typical review loop, indicating activities that occur once only, daily, weekly and at the end of each phase.



Phase boundaries are key points at which a number of aspects of the project should be reviewed:

- Is the business case for the project still valid?
- Is the project meeting its objectives?
- Has the risk situation altered?
- Should the project progress to the next phase?

It is only when these questions have been satisfactorily answered that the next phase should be planned in detail. It is natural for a project manager to want to see the project achieve its original purpose, but this process must take account of changing circumstances. Here's an example. The first phase of a project is a feasibility study into acquiring a new customer relationship management system. The cost/benefit analysis reveals that it would not be worthwhile for the organisation to purchase such a system. So although the project might not have produced the expected result, it has nevertheless been successful in that it helped make the right decision for the organisation.

Reporting

Regular written or verbal reports are an essential part of project monitoring and progress. It is worth spending some time defining report templates at the start of the project to ensure that relevant and focused information is communicated at the right times. An example of a status update from team members is shown here.

Status update report

This report shows outstanding tasks, tasks completed since the last status update report and tasks due for completion before the next report.

| Current as at | | 16 June 2006 | | | |
|--|------------|--------------|------------|-------------|----------------|
| Task | % complete | Duration | Start date | Finish date | Resources used |
| Configuration documentation | 50 | 4 days | 10 May | 14 May | Team 1 |
| Investigation and load of software upgrade | 100 | 2 days | 9 Jun | 10 Jun | Team 1, Team 2 |
| Testing of reports | 100 | 1 day | 13 Jun | 13 Jun | Team 4 |
| Definition of new statutory return report | 0 | 1.5 days | 16 Jun | | Team 5 |
| Report testing procedure | 0 | 0.5 days | 17 Jun | | Team 5 |

Meetings

Regular face-to-face meetings are essential in any project. They are particularly important in projects to develop information systems, because the finished products or outcomes of the project are likely to have a large number of potential users, or customers, in the organisation and elsewhere.

The following meetings are likely to be required:

- Steering board
- User groups/clients
- Project team
- Focus groups to deal with particular issues
- Senior staff advocates.

The benefits are:

- keeping all stakeholders informed of, and involved in, the progress of the project
- allowing all stakeholders to voice opinions and suggestions
- taking on board different interests and different perspectives
- fostering team working
- sharing responsibilities and activities
- agreeing actions where problems arise
- encouraging a sense of ownership and responsibility among all stakeholders.

Meetings need to be structured if they are to achieve their purpose. There should be a formal agenda — quite often a standard list of topics to cover each time — and brief, action-oriented minutes.

Managing by exception

The project manager needs to be aware at all times of what is happening in each part of the project, but the principle of management by exception is also worth considering. This means that the manager monitors and reviews the project, but does not intervene unless corrective action is necessary. This has implications for the role of the steering board, which should meet in line with key milestones and decision points in the plan, rather than at regular pre-determined intervals. If an exceptional situation develops between scheduled meetings, and this requires board level intervention, then the project manager should call a special meeting.

In some organisations, management by exception is not standard practice. In many cases steering boards insist on meeting at regular intervals, irrespective of the urgency or need to do so. In some cases, once a measure of confidence has been established in the project during the early phases, it might be possible to introduce an element of management by exception in later phases.

Activity 17



Use your knowledge of the project reporting arrangements for a specific project and make notes on the pros and cons of management by exception for that project.

Re-planning

There will inevitably be variance from the original plan. It is the project manager's role to decide the best way forward for the project in the light of changing realities. This will probably require creativity and ingenuity. The main problem that arises here, however, is that individuals can become attached to their plan — to the extent that they can be resistant to more effective and more realistic approaches. Here are some examples of circumstances where re-planning was needed.

Problems with data migration

A large-scale system implementation in an organisation encountered problems with data migration. The organisation saw itself as being at the forefront of technological developments and had developed sophisticated, automated data transfer mechanisms. It became a matter of pride for the technical staff to try to solve the remaining problems.

The project manager had to take a step back and break the problems into two categories. It was worth finding a technical solution to some of the issues because they would recur with much larger data sets later in the project. However, some of the most complex problems occurred with quite small data sets, and it was more effective to input the data manually. Reducing the scope of the technical problem allowed the developers to solve the real issues much more quickly.

A 'big bang' approach

A Customer Relationship Management (CRM) project was planned along the lines of a phased implementation, with some elements of functionality going live a year before the remainder of the system. During the course of the project the team became increasingly uneasy about this approach, as it was evident that the system needed end-to-end testing before they could be fully confident about any individual aspects of the system going live.

Delays on the supplier side finally forced a rethink of the plan, and it was decided to adopt a 'big bang' approach whereby customer data was migrated during the year, and the whole system went live for the following fiscal year. This approach met the original objective of having the whole system live for a particular year, but actually reduced risk by allowing more time for testing and user training.

Re-planning resulting from the types of changes described above could result in changes to scope, timescales and costs of the project. Such changes should not proceed unchecked and unauthorised. Changes to the original plan for a project should be subject to a system of change control (see Section 5) to avoid overruns and scope creep.

Quality

Time, cost and quality are key factors in project management. Assessing performance in terms of time and cost is relatively easy, but quality is harder to define and measure. A high quality project is one whose outputs:

- meet the specification
- meet stakeholder requirements

or alternatively,

- are fit for purpose
- satisfy the stakeholders.

These don't all mean the same thing. The chances of the initial specification being correct or of the stakeholders being able to articulate their real needs adequately are slight. There is a danger of hitting the targets but missing the point. Managing quality is about keeping the bigger picture in mind and aiming for outputs that are in line with the second definition.

Elements of managing quality within a project include:

- a formal project management framework
- adoption of recognised standards where they exist
- user acceptance procedures
- impartial evaluation.

Many projects have some form of external quality assurance role built into the project structure. This could be external to the organisation, such as a third party consultant or someone simply external to the project. Ideally, such an assessor should be impartial, and should have experience of project management. This person is only evaluating quality. The project manager is responsible for quality.

The quality standards and the responsibilities for ensuring quality are built into the project and will be derived from a variety of sources, including the customer's quality expectations, requirements of ISO standards and existing quality management systems.

Planning for quality will involve agreement on:

- how each product (output or deliverable) will be tested against its quality criteria — this will be defined at the outset of the project
- when each product will be tested against its quality criteria
- by whom each product will be tested against its quality criteria.

Quality is achieved by a combination of actions:

- defining quality criteria for each product in measurable terms
- developing products according to the defined quality standards
- checking for quality in all delivered products — for example, quality review.

A quality review is a quality checking technique with a specific structure, defined roles and procedures designed to ensure a product's completeness and adherence to standards.

Reference

The Office of Government Commerce provides some useful material on managing quality at:

http://www.ogc.gov.uk/sdtoolkit/deliveryteam/briefings/business_change/quality_mgmt.html



Activity 18



Select one of your projects, then answer the following questions.

- 1 Who is responsible for project quality and what are their specific responsibilities in this role?
- 2 Describe the process that is in place to manage project quality.
- 3 Design a set of generic procedures for project quality management, which projects in your organisation could tailor for their own use.

User acceptance test

For each phase of the project acceptance criteria should be defined. These allow assessment of whether the deliverables have been produced to an acceptable standard. In many projects — particularly those that involve system implementation or process review — assessment of product quality can be made via a formal user acceptance test (UAT). A formal UAT involves defining a script or protocol that gives an end-to-end test of the business process or system. UAT is usually a developmental process rather than a one-off, as users work through the script and document any errors or issues. When all the issues are resolved, the test is formally signed-off. When implementing a system, the UAT scripts are likely to be largely based on the test scripts used to select the system in the first place.

Defined and measurable acceptance criteria and formal sign-off procedures — based on fitness for purpose — are important to avoid the scope-creep associated with users trying to introduce nice-to-have features at the last minute. Involvement in UAT also helps to give users a feeling of ownership and to manage their expectations of the project.

Reference

To see a definition of purpose and suggested roles and responsibilities for user acceptance testing, use the following link:



<http://www.jiscinfonet.ac.uk/InfoKits/infokit-related-files/UAT>

For a generic model to help you select a new software system view the JISC System Selection infoKit using the following link:



<http://www.jiscinfonet.ac.uk/InfoKits/system-selection>

Lessons learned

Section 1 of this pack provides a list of some typical lessons learned from other projects. Identifying, recording and disseminating lessons learned from a project are activities that should be planned and implemented from the start of the project. One way in which we can build learning into projects from the start is by forming Communities of Practice within our organisations or partnerships.

Communities of Practice (CoP) are groups of people who share an interest and who interact regularly so as to develop and learn from each other. CoPs are important to the sharing of knowledge, ideas and experience in organisations. They consist of those internal networks, project teams and thematic groups to which individuals belong and contribute, and include those colleagues and peers with whom an individual shares practice.

Project managers should disseminate lessons learned through their own CoP to other CoPs, where appropriate. During the project appraisal process, CoPs can help to identify people who have worked on similar projects, so that there is a pool of experience to draw from. If difficulties arise — even during implementation — the project manager should also be able to find someone in their CoP with whom they can discuss a potential solution. Communities of Practice are essential if an organisation is to avoid the following:

- costly and time-consuming reinventions of the wheel across a dispersed organisation
- repetition of past mistakes
- missed opportunities for individual professional development.

The project should take steps to ensure that lessons learned are managed throughout the project.

- Review lessons learned from previous projects
 - are they published? Is there a database?
 - seek advice/answers from Communities of Practice
 - identify people who might share their experiences — for example, other project managers.

- Set up a lessons learned log
 - set up at start of project (see table below).

- Capture lessons learned throughout life of project
 - recorded by any member of project team
 - record lessons from the start of project.

- Review lessons learned log at key points in project
 - end stage reviews
 - key milestones.

- Write lessons learned report
 - formal report at closure of project
 - bring all the lessons together in a lessons learned report
 - purpose is to identify those lessons that could be applied to other projects in the future to improve the project management process
 - it is important to identify successes and not just concentrate on failings and weaknesses.

- Share lessons and good practice
 - dissemination
 - evaluation
 - ‘how’ almost more important than ‘what’
 - beware the blandness of an organisational overview
 - file report with project documentation
 - copy to central programme/project office or repository if there is one
 - celebrate success, present to other project teams
 - write case studies
 - capture experiences of individuals
 - intranet, websites, newsletters.

Lessons learned log

| Date | Description | Recommendation |
|------|--|---|
| | <p>Descriptions could include:</p> <ul style="list-style-type: none"> • what management and quality processes went well; went badly; were lacking • any abnormal events causing deviations • notes on the performance of specialist methods and tools used • useful measurements on how much effort was required to create the various products • notes on effective and ineffective quality reviews and other tests, including the reasons for them working well or badly. | <p>Include guidance on scope of each recommendation, for example, Quality Manual enhancement, modification of project management method, introduction/use/change/discontinuance of techniques or tools.</p> |

Activity 19



List the communities of practice (CoP) to which you belong. For each one, describe the knowledge, ideas and experiences that you share with colleagues.

How are lessons learned from previous and current projects in your organisation shared and disseminated? Is this well done? What additional methods might be used to improve the sharing of good practice and avoiding of past mistakes?

Notes on Activity 19

Some tips on sharing lessons and good practice:

- disseminate
- evaluate
- ‘how’ almost more important than ‘what’
- beware the blandness of an organisational overview
- file lessons learned report with project documentation
- copy to central programme/project office or repository if there is one

- celebrate success, present to other project teams
- write case studies
- capture experiences of individuals
- use intranet, websites, newsletters.

Section 5: Study notes for Outcome 4

Purpose of this section

This section provides study notes and activities to support Outcome 4: Manage risks and issues. These notes and activities will help you to cover the following knowledge and/or skills required for this Outcome:

- Project risk log
- Risk reporting
- Danger signals or project failure signs
- Changes and issues.

To achieve this Outcome you must provide evidence of all the above knowledge and/or skills by producing project documentation to manage risks, issues and changes — including supporting logs and monitoring reports for a fixed period of the project.

In providing this evidence, you should:

- create a project risk log, including:
 - description of project risks
 - allocation of risk owners
 - assessment of probability and impact of risks
 - actions to minimise likelihood of risks or to contain the impact of risks
- create logs to record, monitor and respond to changes and issues in a consistent manner
- provide updated logs and status reports on risks, changes and issues over two reporting periods.

The notes in this section — alongside tutor input and other reading on the topics — should enable you to produce project documentation to manage risks, issues and changes (including supporting logs and monitoring reports) for a fixed period of the project. These notes cover the following topics:

- Risk management
- Issue management
- Change control
- Danger signals.

Risk management

Even in the best-planned projects, unexpected events can always occur. Project staff might leave unexpectedly, the budget might suddenly be cut or a fire or theft might affect the project progress. The majority of risks are related to the fact that project plans are based on estimates. Risk management is a mechanism to help predict and deal with events that might prevent project outcomes being delivered on time. For complex or high risk projects, risk management is a major aspect of project management.

Risk management action plans allow us to:

- allocate resources for risk management
- allocate responsibilities for the management of risks.
- determine responses to risks.

Identifying risks

The following questions are usually asked in an initial risk assessment at the start-up of a project:

- What could possibly go wrong?
- What is the likelihood of this happening?
- How will it affect the project?
- What can we do about it?

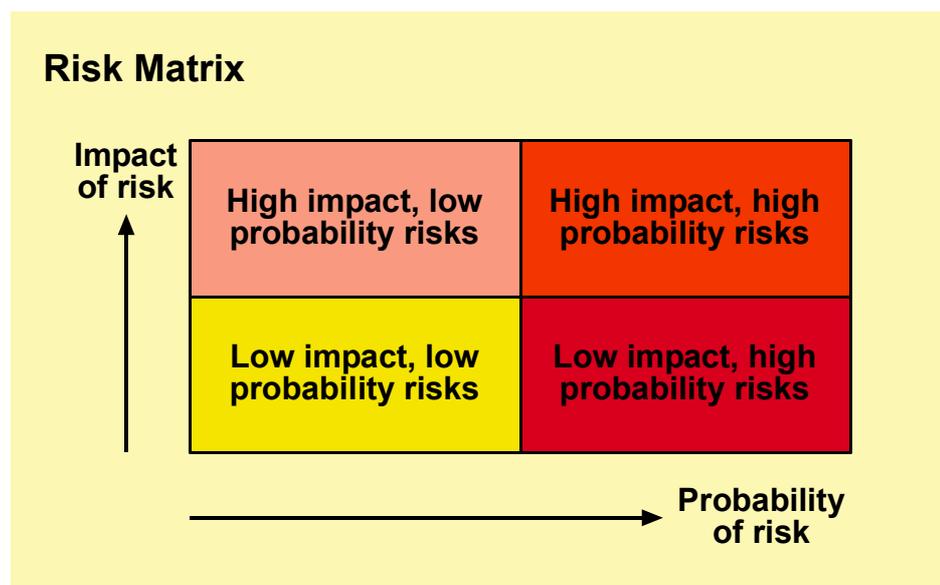
The sorts of areas to be examined for associated risks are:

- the activities along the timeline, and any threats to completion and to timescales
- the project components: people, equipment, infrastructure requirements, other resources
- dealings with contractors and suppliers
- other projects that might have an impact
- organisational changes that might take place during the project
- outside influences that might affect the project, such as changes in funding, government policy or the requirements of a funding body.

The greatest risk often occurs where there is an interface — for example, between systems, departments, processes or organisations.

Project stakeholders and others consulted during the risk analysis process can bring their knowledge and experience to assess the likelihood of the risk occurring, and the potential impact if it does occur.

Risks can be considered in terms of a matrix.



The emphasis should be on addressing the risks most likely to occur, and on the risks that would have the biggest impact if they did occur.

Risk assessment

The decision to proceed with a particular course of action is not made purely on the outcome of the options appraisal scoring process. A high scoring option may also be the one with the highest risks and the greatest uncertainties.

During the initial project appraisal process, the options appraisal outcomes can help identify the key reputational, financial and operational risks to the project.

Begin by looking at the weighted criteria: the highest weights represent the most critical areas of the project. If these criteria are not fully delivered, then the effectiveness of the whole project is likely to be affected.

For these criteria, ask,

- What could go wrong?
- How serious would it be if it did? (Impact)
- How likely is it that it will go wrong? (Probability)

This information can then be used to form a probability/impact risk profile.

| | | | | | | |
|-------------|-----------|----------|-----|--------|------|-----------|
| Probability | Very High | | | | | |
| | High | | | | | |
| | Medium | | | | | |
| | Low | | | | | |
| | Very Low | | | | | |
| | | Very Low | Low | Medium | High | Very High |
| | | Impact | | | | |

Any issues that are in the high impact/high probability zones should be identified, and mechanisms to manage these should be part of the project plan.

The strongest option(s) may also be built on some assumptions and uncertainties:

Assumptions

Any underlying assumptions that have been made to get this far should be clearly understood and aired at this stage. Examples might be:

- it is assumed that enough existing staff time will be made available
- it is assumed that there will be no significant changes to legislative requirements within the timescale of the project.

Recording risks

A risk log or register should be kept. This should record:

- a description of the risk
- the likelihood of the risk occurring
- the potential impact of the risk
- the risk owner
- details of mitigating actions to be taken
- identification of any early warning signs that indicate the risk is about to occur
- details of any contingency plans where applicable.

The potential risks involved in undertaking a project can be presented in table format as in the example given below. Some examples are given, but each project needs to define the risk elements that are appropriate in its own context. Other risk headings may include: hardware, software, network, data conversion, integration/interfacing and user acceptance.

| Risk | Likelihood | Impact | Risk management/ mitigating actions | Early warning signs |
|--|------------|--------|--|--|
| Skills | | | | |
| Inability to recruit suitably qualified staff. | Low | High | <ul style="list-style-type: none"> • Ensure remuneration is appropriate to skill level. | <ul style="list-style-type: none"> • Low numbers and poorly qualified applicants. |
| Inability to retain staff. | Med | Med | <ul style="list-style-type: none"> • Motivation via contractual terms, good job design, good working environment and personal development. • Consider retention clauses in contract for key staff. | <ul style="list-style-type: none"> • Low morale. • High turnover. |

| Risk | Likelihood | Impact | Risk management/ mitigating actions | Early warning signs |
|--|------------|--------|---|--|
| Management | | | | |
| Failure to get all parties to share same understanding of purpose. | Low | High | <ul style="list-style-type: none"> • Definition of stakeholder needs and clear plan with well defined deliverables. • Use of sound project management methodology. | <ul style="list-style-type: none"> • Differing views on forward plan. • Confused messages in draft publications. |
| Necessary facilities not available. | Med | High | <ul style="list-style-type: none"> • Accommodation available for project is currently limited. • Implications for future of project if additional functionality required and appropriate accommodation not available to support it. | <ul style="list-style-type: none"> • Delay to work plans caused by lack of facilities. |

Managing risks

To manage risk effectively, you need to allocate each risk to an identified owner. This should be someone within the project team whose responsibility it is to monitor the situation, and ensure that the necessary corrective actions are carried out. Responses to the initial risk assessment may include:

- transfer the risk — move the risk to someone more able to deal with it — for example, contract out the supply and support of the hardware infrastructure; take out insurance
- treat the risk — either reduce the probability of the risk occurring or lessen the impact — for example, increase staffing resource on the project. Internal controls should be exercised when treating risks (see below)
- tolerate the risk — sometimes there is not much else to be done other than to accept the risk, continue to monitor it and ensure that contingency plans are in place
- terminate the risk — eliminate the possibility of the risk occurring — for example, use alternative resources, technologies or ways of working.

Additionally, the risk may be deferred by altering the plan and moving some activities to a later date when the risk might be reduced.

Managing risk is a continuous process. The nature of the risks will change as the project progresses. For example, staff recruitment might be a big issue at the start of a project, while staff retention could be the issue towards the end. At the bare minimum, the risk assessment and management plan should be reviewed at each phase boundary before moving into a new phase of the project.

Internal controls

It is essential that any controls are proportional to the risk they are related to. Controls should give reasonable assurance of confining likely loss within a range the organisation is able to tolerate. Every control action has an associated cost, and so has to offer value for money in relation to the risk it is controlling.

There are four main categories of internal controls for risk:

| | |
|---------------------|--|
| Preventative | <p>Preventative controls limit the possibility of a risk being fully realised. Examples are:</p> <ul style="list-style-type: none"> • obtaining sufficient specialist advice in advance • recruiting sufficient financial experience • separating duties to prevent fraud. The greater the risk, the more important prevention becomes. |
| Directive | <p>These controls are vital when a project has to conform to regulations. Examples are:</p> <ul style="list-style-type: none"> • compliance with legislation • no payments in advance of need • only trained staff can participate • wearing of protective clothing. |
| Detective | <p>If loss or damage has occurred, there must be controls or systems in place ready to investigate what happened and to detect the lessons to be learned. Examples are:</p> <ul style="list-style-type: none"> • reviews of management accounts • undertake aftercare/monitoring visits • stock checks. |
| Corrective | <p>These controls are the mechanisms by which, once loss or damage has occurred something can be recovered. Examples are:</p> <ul style="list-style-type: none"> • penalty clauses in contracts or controls to recover overpayments • insurance. |

Reference

For more detail on how to manage risk:

JISC Infokit devoted to the subject of Risk Management



<http://www.jiscinfonet.ac.uk/InfoKits/risk-management>

JISC infoNet also offers a tool for recording and managing risk



<http://www.jiscinfonet.ac.uk/InfoKits/project-management/pm-controlling-the-project-1.4>

OGC guide on Managing Risk and other related links



<http://www.ogc.gov.uk/sdtoolkit/deliveryteam/risk/index.html>

Activity 20



- 1 Identify and describe four major risks from one of your projects.
- 2 Create risk register entries for each of these risks.
- 3 Explain the reasons for your choice of risk owner in each case.

Issue management

An issue is anything that might affect the project meeting its goals. The difference between a risk and an issue is that a risk is a potential occurrence, whereas an issue is something that has already occurred. Good risk management prevents many risks from turning into issues.

Risks are not the only things that can become issues. Seemingly straightforward questions can also become issues. For example, a stakeholder might ask the project manager, 'How are you involving sales staff in implementing the new Customer Relationship Management (CRM) system?' when what they are really saying is, 'I don't think sales staff have an adequate involvement in the implementation of the new CRM system.'

It is worthwhile recording questions and ensuring they are answered, to prevent them turning into issues. A question usually has a straightforward factual answer that can resolve the matter — for example, 'There is a focus group for sales staff who want to be involved in the project.'

An issue is something that cannot easily be resolved with a factual response — for example, a member of staff leaves unexpectedly, or a key supplier goes into receivership.

Issues can present opportunities as well as threats. An issue could, for example, contain a suggestion and result in a proposed change to the project. This may affect the scope of the project but the change may be for the better.

Some issues might have been anticipated in the initial risk assessment whereas others arise unexpectedly. Mechanisms to record and deal with unanticipated issues include:

- maintaining an issues log
- ensuring that progress, steering board and other meetings make time for discussion of issues
- convening short-life working groups or focus groups if a large number of stakeholders are affected.

The concept of an issue having an owner is crucial to effective issue management. The owner is someone within the project team who is responsible for ensuring that the issue is resolved. All members of the team should be encouraged to log issues as soon as they arise (this often occurs first in the course of informal discussions) and an appropriate owner should be agreed.

Ownership should be at the lowest level at which the issue could possibly be resolved. The sooner an issue is logged and addressed, the more likely it can be resolved without having a major impact on the project. However, an escalation procedure should be determined in the event that a solution cannot be found by the initial owner. Normally the issue is escalated through the line management framework of the project up to the project manager and, ultimately, the project sponsor.

Reference

The JISC infoNet Project Controls Database includes an Issues Log that records details of the issue, its owner and progress up to final resolution:



<http://www.jiscinfonet.ac.uk/InfoKits/project-management/pm-controlling-the-project-1.4>

Activity 21



- 1 What is the difference between an issue and a risk? Describe at least one example of each to support your explanation.
- 2 Identify two recent project issues. For each describe the circumstances of the issue arising and the steps taken to resolve it.
- 3 Create issue log entries for each of these issues.

Change control

There are likely to be changes to the original plan during the life of any project. The changes could arise due to the:

- business case altering
- need to find a way round a problem
- identification of a better way to meet objectives
- scope of the project altering.

A change control mechanism is necessary to ensure that such changes are handled in a managed and controlled way. Without formal procedures in place, the project runs the risk of scope creep.

Scope creep is a particular issue in software development projects where there is considerable temptation to add extra changes as benefits become clear during the progress of the project. It can often prove quite difficult to keep within scope, given that additional suggestions can be closely linked to the original initiative.

Changing the scope of the project frequently poses risks in terms of keeping to budget and deadlines, but it is important to realise that scope change can also offer opportunities to derive previously unforeseen benefits. Conversely, it might be necessary to descope items from time to time, to keep within project tolerance limits.

Any proposed change to the agreed deliverables of the project should be subject to an impact analysis. Central to any approach is a consideration of the impact in terms of:

- time
- cost
- quality.

By this stage in the project a plan, deliverables and an agreed budget should already be agreed. By considering the proposed change under the above headings it should be possible to establish whether the change is within acceptable tolerance limits, or whether it has a significant impact on any of these areas.

The definition of 'within tolerance limits' is usually that the change can be implemented:

- without affecting achievement of major milestones in the plan and
- within the existing budget.

Generally, a project manager can approve changes that are within tolerance but will refer to a higher authority such as a project steering board where the proposal amounts to a significant scope change. In these instances, the board should be presented with a business case if it is being asked to approve a change. Here's an example.

A system selection project in a college has decided to purchase a course timetabling system, but has excluded examination timetabling. Ideally, the project should have consulted all relevant stakeholders about the scope before getting the project underway, but in this scenario the Registrar suddenly thinks it would be a good idea to include exam timetabling.

If the project team make this change, it will set the deadlines back because they will need to define requirements in this area, and it is likely to result in additional cost. The team must make a business case for why the change (in this case presumably an improvement in quality) is worth doing.

Change controls are particularly important where a contractual relationship exists. When working with a third party supplier or consultants, you should be particularly careful about defining the original scope correctly and managing changes effectively, or costs could spiral out of control.

Good project management is a careful balancing act, and handling change is a key element of that act. It isn't good practice either to freeze a specification and plan on day one of the project and stick rigidly to it, or to change the plan so often that the project never comes to an end.

Change control mechanisms usually involve some type of change request form that records:

- details of the proposed change
- analysis of the likely impact
- agreed actions.

Reference

Use the following link to view an example of a change request form:



<http://www.jiscinfonet.ac.uk/InfoKits/infokit-related-files/change-request-template>

Activity 22



Produce a diagrammatic representation of the procedures that you would recommend to manage and control change requests in projects in your organisation.

Danger signals

Activity 23



Create a list of potential danger signals or project failure signs that you would want a project manager to be aware of.

Hint: re-read paragraphs:

Section 1

- Project success
- Why do projects fail?
- Lessons learned from previous projects

Section 2

- Building the project team
- Staff development
- Stakeholder analysis
- Effective communications

Section 3

- Monitoring, updating and reporting

Section 4

- All!

Section 5

- All!

The answers are not explicit in the text, but there are many clues. Remember to include the people and interpersonal skill aspects of project interaction as well as that which is monitored, measured and reported.

Section 6: Study notes for Outcome 5

Purpose of this section

This section provides study notes and activities to support Outcome 5: Evaluate and close a project. The notes and activities will help you to cover the following knowledge and/or skills required for this Outcome:

- Project evaluation
- Delivery and acceptance of project products (see User acceptance testing in Section 5)
- Identification and distribution of lessons learned
- Follow-on actions and recommendations for further development
- Post project review
- Storage of project records.

To achieve this Outcome you must provide evidence of all the above knowledge and/or skills by producing project documentation that demonstrates effective evaluation and the controlled and formal closure of a project.

In providing this evidence, you should:

- explain how it will be ensured that all products from a project have been delivered and accepted
- identify lessons learned from a project and describe the means by which they are distributed for the benefit of others
- create an end-of-project evaluation report that details how well the project has performed against its original and revised business cases and plans
- describe and justify any follow-on actions and recommendations for further development
- provide a plan for a post project review
- create a list of all records of a project and recommend suitable methods of storage and retrieval.

The notes in this section — alongside tutor input and other reading on the topics — should enable you to produce project documentation that demonstrates effective evaluation and the controlled and formal closure of a project. These notes cover the following topics:

- Project closure
- Evaluation
- Follow-on actions and recommendations for further development
- Lessons learned report
- Post project review
- Storage of project records.

Project closure

A project has a beginning (project start-up) a middle (the loop of planning, managing, controlling, reporting and re-planning) and an end (project closure). The process of project closure ensures a clear end to the project, whether that is successful completion or early termination (see below).

The project should be formally closed to ensure that:

- customers have formally accepted all outcomes
- operational procedures are in place
- handover to operational staff has been completed
- documentation and reference material is in place
- any further actions and recommendations are documented and disseminated
- results are disseminated to relevant people
- there are no loose ends.

Project closure can be a hectic time when reporting is on a daily (or even more frequent) basis and the manager is working at a much lower level of detail than before (probably with itemised check-lists) to ensure that all loose ends are tied up. However, planning for this phase must commence much earlier on.

It can be a time of mixed feelings for the project team. Hopefully they will feel satisfaction at a job well done, but they might be worried about what the future will hold, or be so eager to get on with the next project that they leave some things unfinished.

The exit strategy for project staff must be clear, so that they feel adequately supported whether they are going on to new projects, returning to routine jobs or leaving the organisation. The end of the project is also the start of routine use of the outcomes. The handover to staff who will carry out normal operations must also be planned so that they feel they have ownership of the project outcomes and are ready to champion them.

It can be tempting to skimp on final documentation — particularly if the project is already late or overspent. However, projects that are late or overspent are prime examples of situations where exactly what did happen needs to be recorded to inform the planning of future projects. Planning in time for proper recording and evaluation also helps the project team to feel that their efforts are of lasting value.

Once documentation and reference material is up-to-date, arrangements need to be made for archiving, so that at any later audit, retrieval can be done quickly and conveniently.

Early termination

Projects often continue to run even when they are heading for failure because it can be simpler to let them keep going. Calling a halt to a project requires bold decision-making from senior management. A project should be stopped if:

- there is no chance of success
- saving it would be at a disproportionate or intolerable cost
- the cost of saving it is greater than the benefit of continuing it
- the risks of continuing are too great
- continuing will mean writing off even more investment
- circumstances have changed and the project is no longer necessary
- it is on the wrong track and will be of little benefit anyway.

If the decision is made to stop the project then it must go through a formal closure process which will include:

- reporting the situation
- describing the causes
- describing the consequences for the project and the organisation
- describing possible options if any and the effect of each option
- making a recommendation
- producing a termination action plan
- reviewing and evaluating the project thus far
- gathering the lessons learned.

Evaluation

Thinking about evaluation must start early in the project, and should be incorporated in the planning and monitoring processes. Success measures — both hard and soft — will have been determined at the start of the project, and measuring and monitoring mechanisms to track these throughout the life of the project will have been established. This means capturing what actually happens in the project — including unplanned and incidental outcomes.

There are two stages of evaluation in a project.

- Formative — during the project
 - gathering and monitoring quantitative and qualitative data
 - recording lessons learned
 - using above evidence to inform the ongoing direction of the project.
- Summative — at the end of the project.

During the process of project closure the project manager should prepare an end of project report. This should comprehensively evaluate the actual project results against what was proposed at the outset and detailed in the project initiation document. The report should draw from data, logs and reports generated throughout the project. It should provide both quantitative and qualitative analyses of the extent of achievement of the objectives of the project.

For some projects it might also be necessary to commission an external evaluation. This could be required by the standards or regulations of the organisation, partnership or funding body. Experienced evaluators should be contracted to meet the requirements of formative and/or summative evaluation as specified in the evaluation brief. If evaluators are engaged in the early stages of project development they may additionally provide valuable advice and guidance.

The benefits of effective evaluation are:

- improved decision making
- better resource allocation
- enhanced accountability
- organisational learning.

Activity 24



Compile a checklist for the contents of an end of project report.

Follow-on actions and recommendations

This might form a part of the end of project report or evaluation report, or it could be a separate document in its own right. The purpose of these recommendations is to pass on details of any unfinished work, ongoing risks or potential product modifications to the people responsible for the future support of the final products in their operational life.

A recommendation for follow on work might be based on:

- requests for change which were not carried out during the project
- development of missing products or products that did not meet original specifications
- risks identified during the project that may affect a product in its operational life
- any handover or training needs
- any other activities needed to take a product to the next stage in its life.

Lessons learned report

At the start of the project advice and guidance will have been sought from communities of practice. Relevant lessons from previous projects will also have been reviewed. During the subsequent course of the project its own lessons learned log will have been compiled and reviewed at key points, such as stage completion. At the close of the project this should be written up formally in a lessons learned report.

To be useful to other project managers, project teams and others, the writing of the report should take into account questions such as:

- Who will read it?
- How will that audience be reached?
- Who will contribute?
- What will the content consist of?
- What format will it be in?

There are many different ways in which the lessons learned can be disseminated.

- Journal articles
- Newsletters
- Report
- Workshops, seminars
- Presentations at conferences
- Intranet
- Websites

A lessons learned report should answer the following questions:

- What in the management of the project went well?
 - what would you want to make sure you would do again next time?
- What went less well and why?
 - what would you do differently next time?

- Was there a clear definition of success?
 - was it achieved?
 - what is the customer's view?
- How well were risks and issues managed?
 - was the project impacted by unforeseen problems and how well were they handled?
- Has there been any deviation from the original project brief/ project initiation document?
 - how did this arise and how was it managed?
- Did the project team have the right skills in place?

The report should also contain recommendations for future enhancement or modification of the project management method.

Activity 25



Complete a lessons learned report for a project of your choice.

Post project review

In many cases the benefits (or unexpected problems) of a project can't be assessed until the change has been in place for some time. The review process is therefore incomplete without a post project review and evaluation. This is required to check whether:

- outcomes are those expected
- projected benefits have occurred
- operational working is as planned
- costs are as expected.

The project sponsor has overall responsibility for ensuring that the desired business benefits are achieved, and it could be the sponsor who leads the review, particularly if the project manager has gone on to other duties.

The review should also highlight any unanticipated issues and highlight any changes required.

Reference

An example of a post project review form can be found using the following link



<http://www.jiscinfonet.ac.uk/InfoKits/infokit-related-files/post-project-review-template>

Activity 26



Who should be invited to a post project review and why?
Create a generic agenda for a post project review meeting.

Storage of project records

The project manager should ensure that all project documentation is up-to-date prior to arranging for secure and orderly archiving. This may involve project support and assurance staff in weeding out those records that will not be useful for future reference. All documents and records that may be required for future audit and post project reviews must be stored for subsequent retrieval and in accordance with any legislative, funding or organisational time-based retention periods.

Section 7: Project management resources

Project management guidance websites

- **Project management guidance from the UK Government's Department for Education and Skills (DfES):**



<http://www.dfes.gov.uk/ppm/index.cfm?fuseaction=content.view&SiteID=2>

Straightforward and user-friendly project management guidance covering the life-cycle of a project from start-up to closure.

- **Project management guidance from JISC infoNet:**



<http://www.jiscinfonet.ac.uk/InfoKits/project-management>

Straightforward and user-friendly project management guidance. The guidance has been written specifically for projects in colleges and universities. The examples are related to the education sector. Despite this, there is much useful information that can be applied to any project.

- **For clear, jargon-free guidelines on general project management principles, see the website of the Office of Government Commerce:**



<http://www.ogc.gov.uk>.

- **Project management guidance from the Successful Delivery Toolkit provided by the UK Government's Office of Government Commerce (OGC):**



www.ogc.gov.uk/sdtoolkit/deliveryteam/projects/index.html

Comprehensive coverage of all aspects of project management with many links to other documentation and related topics. The approach is more formal and contains more detail than DfES and JISC infoNet.

- **The APM Group provides many resources for project, programme and risk management on their website:**



<http://www.apmgroup.co.uk/web/site/home/home.asp>

- **The Association for Project Management (APM) has materials available on their website:**



<http://www.apm.org.uk>

- **Many tools for project management and controls specifically for information systems projects can be found at:**



http://www.iturls.com/English/SoftwareEngineering/SE_2.asp

- **The University of Glamorgan provides a list of project management links at:**



<http://www.comp.glam.ac.uk/pages/staff/dwfarthi/projman.htm#general>

- **A number of resources are available at the website of the Programme and Project Management Resource Centre. In particular, they highlight some common problems with project management and ways to address them. The site is at:**



<http://www.projectsart.co.uk/index.html>

Project resources and other useful tools

- **Project management templates**



www.prince2.org.uk/Web/Site/PRINCE2Resources/PRINCE2-Templates.asp

Contains a set of PRINCE2 project management document templates. The templates can be altered to suit individual needs.

- **Tools for project management and control**



<http://www.ittoolkit.com/qtools.htm>

Easy-to-use worksheets, checklists and templates, specifically designed to help complete individual planning tasks and project management objectives.

Case studies

- **PRINCE2**



<http://www.prince2.org.uk/Web/Site/PRINCE2Resources/Case-Studies.asp>

Contains a number of PRINCE2 case studies. These were written in response to requests from organisations considering using the method. They focus on the business case for using PRINCE2, how PRINCE2 was implemented, lessons learned and benefits. Those interested in the implementation of PRINCE2 within a local authority should download the report on Reading Borough Council.

- **Local Government International Bureau**



www.lgib.gov.uk/case_studies/index.html

Case studies from local government. It describes projects run by UK local authorities with EU funding, and how councils in other countries are tackling common problems. For example, there is a case study on community regeneration in Bristol. This describes Bristol City Council's involvement in an EU programme, which gets young people involved in regenerating their own communities.

Books



- **The Project Shop**



<http://www.theprojectshop.co.uk/acatalog/index.html>

The Project Shop is an online bookshop for books on management. The listings include a summary of each book.

Click on the following link to go to the catalogue on General Project Management:



http://www.theprojectshop.co.uk/acatalog/Online_Catalogue_General_Project_Management_1.html

PRINCE2 books can be found at:



http://www.theprojectshop.co.uk/acatalog/PRINCE2_.html

- **Amazon**



<http://www.amazon.com>

Thousands of books on project management.

- **Amazon's UK website:**



<http://www.amazon.co.uk>

Section 8: Glossary of project management terms

| Term | Description |
|-----------------------------------|---|
| Acceptance criteria | A prioritised list of criteria that the final deliverables must meet before the customer will accept them. |
| Assumption | A statement that is taken as being true for planning a project, but which could change later. |
| Audit | The examination of the activities, deliverables and finances of the project to determine the extent to which they conform to accepted criteria. |
| Benefits | The positive outcomes that a project is being undertaken to deliver, and which justify the investment. |
| Budget and actual variance record | Monitors the receipts and expenditure against amounts planned. It shows the variation between actual and budgeted expenditure. |
| Budget plan | A tool for planning expenditure over time. It provides information on project expenditure and includes information on the funding sources and conditions of funding. |
| Business case | Information that describes the justification for setting up and continuing a project. |
| Change control | A procedure to ensure that the processing of all project issues and change requests are controlled, including the submission, analysis and decision making. |
| Change control form | A form to request a change to the project. It is used to help the project manager and project board to determine the potential impact and cost of changes to the agreed project plan. |
| Communications plan | Describes how the project's stakeholders and interested parties will be kept informed during the project. |

| Term | Description |
|--------------------------|---|
| Constraint | Something that is unavoidable or that could prevent the project manager from delivering the project in the most appropriate way. |
| Contingency plan | A plan that provides an outline of decisions and measures to be taken if circumstances (such as a risk) occur outside the control of a project. |
| Critical path | The minimum time required to complete the project, taking into account dependencies between activities. If any task on the critical path is delayed, then the project will finish late. |
| Critical path analysis | Analysing the critical path allows critical tasks to be prioritised when planning, and can help identify key slippages. The reliability of the critical path depends on accurate estimates of time and of resources required. |
| Customer acceptance form | Confirms that the deliverables have been measured against their acceptance criteria, and have been accepted on behalf of the customer. |
| Deliverable | An item that a project has to create as part of its requirements. Another name for a deliverable is 'product'. |
| Document template | A suggested format for a document, with headings under which the user can enter their own text. |
| End-of-project report | Produced at the end of the project. It provides the project board with a review of the overall project, and an assessment of how successfully the project has met its objectives. |
| Exception | A situation where it is identified that the project will exceed tolerance levels agreed between two parties, such as project manager and project board. |

| Term | Description |
|----------------------------|---|
| Exception report | A report — describing an exception — that is presented to the project board by the project manager. This provides an analysis and options for the way forward, and identifies a recommended option. |
| External evaluation | An externally commissioned evaluation of the project. May be a formative and/or summative evaluation of the processes and the deliverables. |
| Gantt chart | A bar chart which can help visualise the project schedule. It is drawn with dates as the 'x' axis and the project tasks as the 'y' axis. |
| Highlight report | A progress report produced at a specified frequency. |
| Inter-dependent activities | Activities or tasks where one or more activity cannot commence until another has completed. |
| Issue | Something that has happened and which is affecting the project and needs to be resolved. For example, it can be a problem, query or request for change. |
| Issue log | A log of all project issues (including requests for change raised during the project) showing details of each issue, its evaluation, what decisions have been made about it and its current status. |
| Lessons learned log | Used during the lifetime of the project to record lessons learned as they occur. Used to produce a lessons learned report. |
| Lessons learned report | A report that describes the lessons learned in undertaking the project. The lessons should be distributed and the report held centrally for the benefit of future projects. |
| Management by exception | A management technique whereby a higher level of management does not intervene at a lower level unless there is a deviation from the agreed levels of tolerance. |
| Milestone | A point at which progress can be measured on the way to achieving an objective. |
| Outcome | Describes what a project is set up to deliver. |

| Term | Description |
|-----------------------------------|--|
| Partnership agreement | A written agreement that outlines the jobs, responsibilities and contributions of all project partners. |
| Post project review | One or more reviews held after project closure to see if the expected benefits have been obtained. |
| Post project review form | A form summarising progress on post-project benefits. Used to record status at the time of the post project review. |
| Post project review plan | The plan, including schedule, for the reviews to be conducted after project closure. |
| Product | An item that is created by the project. Sometimes known as a 'deliverable'. |
| Project | A set of coordinated activities, with clear starting and finishing points, undertaken to meet objectives within defined time, cost and performance targets. |
| Project board | Managers representing the business, users and suppliers of the project. It provides overall direction and management of the project and is accountable for the project's success. |
| Project brief | A description of what the project is to do. This is used to develop the project initiation document. |
| Project initiation document (PID) | Brings together the main information needed to start the project and to convey that information to all concerned with the project. |
| Project infrastructure checklist | A checklist to help identify the resource needs of a project (such as accommodation, equipment, hardware, software and user access accounts). |
| Project life-cycle | The duration of the project from start-up to closure. |
| Project management | The planning, monitoring and control of all aspects of a project, and the motivation of those involved in it, with the aim of achieving objectives on time and to the specified cost, quality and performance. |

| Term | Description |
|--------------------------------|--|
| Project management methodology | A structured set of guidance and processes that provide a method to manage a project. This includes a set of pre-defined tools and techniques which can be followed as part of a standard management process. |
| Project management tools | Checklists, templates, software packages and other aids to help you manage a project. |
| Project manager | The person given the authority and responsibility to manage the project on a day-to-day basis, to deliver the outcomes within the constraints agreed with the project board. |
| Project objective | To be achieved in order to meet an aim. Objectives should be Specific, Measurable, Achievable, Relevant and Time-bound (SMART). |
| Project plan | A high-level plan showing the main deliverables, when they will be delivered and their cost. An initial project plan is presented as part of the project initiation document. This is revised as information on actual progress appears. It is a major control document for the project board to assess progress against expectations. |
| Project resources | The resources of a project include all the finances, budgets, staff, buildings, equipment, systems, services and technology required by the project. |
| Project sponsor | The person who is accountable for the successful delivery of a project. The project sponsor usually has control over the resources allocated to it. The project manager reports progress to the project sponsor. |
| Project team | Those involved in the management and delivery of the project and its deliverables. |
| Quality | The features of a deliverable or service that define its ability to satisfy the needs of the customer who commissioned it. |

| Term | Description |
|---------------------------|---|
| Quality assurance | Describes the process by which quality outcomes and project management can be demonstrated. |
| Quality control | The procedures and techniques to control the quality of project management and of deliverables being produced. Quality control is about the processes to be put in place to achieve that quality. |
| Quality management system | The complete set of quality standards, procedures and responsibilities for a site or organisation. |
| Quality plan | A plan defining the main quality criteria, quality control and audit processes to be applied to project management and specialist work in the project. |
| Risk | Something which might happen in the future. It requires positive management to reduce the likelihood of it happening and to lessen its potential impact. |
| Risk log | A document recording identified project risks. It includes impact evaluation and counter-measures for all risks. It should be created during the start-up of the project and developed during the life of the project. |
| Risk management | The task of minimising the project's vulnerability to risk. |
| Scope | The limits within which a project is planned and managed. When defining the scope of a project it is as important to consider what is outside the project's scope as it is to define what is within it. |
| Scope creep | Changes to the process by which the set of deliverables is produced — usually in an uncontrolled fashion and without a corresponding change in resources or a review of the deliverability of the project. Scope creep is one of the most common causes of project failure. |
| Stakeholder analysis | An analysis of stakeholders to reach an understanding of their requirements. Used to determine appropriate communications. |

| Term | Description |
|-------------------------------|--|
| Stakeholder | Any person or group with an interest in, or impacted upon by the project. |
| Status report | Shows outstanding project tasks, tasks completed since the last status report and tasks due for completion before the next report. |
| Strategic plan | The strategic level business plan of an organisation. |
| Tolerance | Acceptable deviation in planned time and cost. Separate tolerance figures should be given for time and cost. There could also be tolerance levels for quality, scope, benefit and risk. |
| User acceptance testing (UAT) | The means by which it is ensured that a new system, process or deliverable meets essential user requirements. Each component to be implemented should be subject to one or more user acceptance tests (UAT) before being 'signed off'. |

