Chapter 8

Methodologies and Standards

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Chapter 8

Methodologies and Standards

8.1 Learning Objectives for this Chapter

Having completed this chapter you will be able to:

- Appreciate the need for a project management methodology
- Understand the advantages of using a methodology
- Name and describe some common project management methodologies & standards
- Understand the purpose and structure of the Project Management Body of Knowledge (PMBOK)
- Understand the additions included in the PMBOK Construction Industry Extension
- Be able to relate some of the topics covered in this course to the PMBOK

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8.2 Introduction

Every project manager is required to have many different types of knowledge and to display a number of types of competencies e.g. management, interpersonal, financial etc. She will also need to be aware of (and proficient in) a range of tools & techniques. Some specialist knowledge and techniques will also be required for projects in particular industries.

At this point you should appreciate the wide range of skills and knowledge areas that make up project management…there is a lot to take in! It can be very useful to have some framework to organise all this knowledge and to co-ordinate and structure all your project management tasks and associated tools & techniques. It would also be very useful if everyone else you work with were to organise and structure their management of projects in the same way as you do!

In this chapter we will review some common frameworks, standards and methodologies and examine one in particular – the Project Management Body of Knowledge from the Project Management Institute.

This chapter will attempt to answer the question: "There seems to be so much to think about - How can we make it all fit together?"

8.3 Methodologies and Standards

*A **Methodology** is set of methods, rules and guidelines than can be used repeatedly to gain consistent results.*

A methodology provides a roadmap to help achieve a certain objective (such as the delivery of a successful project)

The benefits from adopting a methodology include:

- Easier communication (because of common and familiar documents and terminology)
- Increased productivity due to standardised processes (sometimes supported by systems & software)
- Higher predictability of success because the approach is tested and proven in the organisation

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8.3.1 Components of a methodology

This is what you should expect to see in a methodology for your organisation:

- Defined roles and organisation structures
- Standardised definition of a lifecycle
- Standardised Processes with:
    - Defined process templates
    - Defined start and end points for processes
- Guidelines
- Selected Techniques
- Appropriate Tools
- Templates

8.3.2 Selecting a methodology

The Project Management Office is frequently tasked with selecting an appropriate methodology for managing projects across an organisation. An organisation wishing to implement a methodology has three choices:

a. Design a bespoke one

*b. Ad**o**pt a published methodology in total*

*c. Adopt and Ad**a**pt a published methodology*

There are likely to be several published methodologies which could be applied within your industry, therefore designing a bespoke methodology from scratch (option a) is usually unnecessary (and possible foolhardy). On the other hand, many methodologies are designed to be generic and to cover as broad a range of disciplines as possible –therefore it is unlikely that any one approach will fit the needs of the organisation exactly. So you must research carefully before you decide on option b).

In most cases it is perfectly acceptable to select a proven methodology that is applicable to your industry and adapt it to suit your needs, concentrating on those parts that will add most value for your organisation.

Note 1: Adoption of a methodology can never guarantee the success of a project - however a sound methodology can increase your chance of success.

Note 2: All projects require some level of structured projected management - however the need for a robust methodology will increase as project size and complexity increases and as multiple projects are undertaken simultaneously within an organisation.

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8.4 Examples of Methodologies (and non-methodologies)

The following are the most frequently quoted "methodologies" related to projects :

1) PRINCE2
2) Project Management Body of Knowledge (PMBOK)
3) Association for Project Management (APM) Body of Knowledge
4) International Association of Project Managers (IPMA) Body of Knowledge
5) System Development Life Cycle (SDLC)
6) Rational Unified Process (RUP)
7) Agile

There are also a large number of proprietary frameworks and methodologies on offer from commercial organisations, many of them based on the methodologies or standards listed above.

We will briefly describe each of these seven and see that not all are designed to be used as generic project management methodologies.

8.4.1 Projects in Controlled Environments (PRINCE2)

"PRojects In Controlled Environments" (PRINCE2) is a generic project management methodology developed and owned by the U.K.'s Office of Government Commerce (OGC).

It provides a method for managing projects within a clearly defined framework and describes detailed procedures for many project activities. Each process has clearly defined inputs and outputs. Project roles and responsibilities are also defined and project logs and documentation are standardised

PRINCE espouses 7 principles of Project Management which must be applied in all "PRINCE2" projects

1. Continued business justification
2. Learn from Experience
3. Defined Roles and Responsibilities
4. Manage by Stages
5. Management by Exception
6. Focus on products
7. Tailor to suit the project environment.

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In terms of practical application it defines 7 Processes:

1. Starting up a project
2. Initiating a project
3. Controlling a stage
4. Managing Product delivery
5. Managing Stage boundaries
6. Closing a project
7. Directing a project

PRINCE2 also identifies 7 project management themes which cut across all of these processes:

1. Business Case
2. Organization
3. Quality
4. Plans
5. Risk
6. Change
7. Progress

Product Based Planning is a key feature of PRINCE. In PRINCE the "product" of the project can be sometime tangible like a building at something less so – like delivery of a training programme. The Product concept is embedded in the planning process – and uses documents such as Product Breakdown structure, Product Descriptions and Product Flow Diagrams.

PRINCE2 also recognises four levels of Project "Management":

Managing the Corporate programme
Directing the project
Managing the Project
Managing Product Delivery

8.4.2 Project Management Body of Knowledge (PMBOK)

The PMBOK is published by the Project Management Institute (based in the USA) and identifies what is generally recognised to be "good practice" in project management. It identifies a very broad range of process areas, skills and techniques.

Unlike PRINCE2 it does not specify detailed procedures or documentation. In that regard it is perhaps more accurate to describe the PMBOK as a "standard" rather than a methodology. It is widely used and supported, particularly in the U.S, from

where it originates. We will explore the construction of this standard in a later section.

8.4.3 Association for Project Management (APM) Body of Knowledge

The APM is a UK based professional organisation and has published the 6th edition of its Body of Knowledge in 2012. Its standard is similar to the PMI's PMBOK.

8.4.4 International Association of Project Managers (IPMA) Body of Knowledge

The IPMA is focused primarily on European project managers and published Competence standards for project managers (and at organisational level)

IPMA's approach to project management is broken down into 46 competence elements, covering the technical competence for project management (20 elements), the professional behaviour of project management personnel (15 elements) and the relations with the context of the projects, programmes and portfolios (11 elements).

The IMPA and APM standards/competency baselines are popular in Europe but are not as widespread globally as the PMBOK.

8.4.5 Systems Development Life Cycle (SDLC)

Systems Development Life Cycle (SDLC) is primarily a software development process although it is maintained by some that it can be used as distinct process independent of the IT industry.

The objective of SDLC is to ensure development of a high quality system. It is a systematic approach composed of several phases.

8.4.6 Rational Unified Process (RUP)

The Rational Unified Process (RUP) was developed by IBM as a process framework to support software development projects. It is designed to be tailored to the needs of the organisation adopting it, selecting only those elements that match their needs.

8.4.7 Agile Software development

One of the advantages of a defined methodology is that it brings structure and discipline to the management of a project. It is argued that such discipline breeds consistent success. However the counterpart of discipline is agility, flexibility and responsiveness. The Agile movement aims to use less "structured" approaches to the development of software.

Although some Agile implementations are represented as being "Project Management Approaches" they do not necessarily cover the entire Project Lifecycle and do not constitute a general project management methodology.

For more information start here: http://www.agilealliance.org

8.4.8 In Summary

PRINCE2 and the various BOK's are arguably the only publications which can be applied to all projects, regardless of size, complexity or industry. PRINCE2 is an important and widely recognised methodology which includes many of the practical components of a working methodology. However we will concentrate now on a further examination of the PMBOK as a means to organise and standardise our management of projects.

8.5 The Project Management Body of Knowledge

The PMBOK Guide – Fifth Edition is an internationally recognized standard. It describes itself as "the sum of knowledge within the profession of project management" It provides a broad framework of knowledge and practices from which the project manager must determine what is appropriate for his own application.

There are two main sections to the guide:

1) The Standard and

2) The Project Management Knowledge Areas

The Standard

This section specifies all the processes that are used to manage a project and groups them into 5 process groups as below:

- Initiating : Those processes performed to define a new project or a new phase of an existing project by obtaining authorization to start the project or phase.
- Planning : Those processes required to establish the scope of the project, refine the objectives, and define the course of action required to attain the objectives that the project was undertaken to achieve.
- Executing : Those processes performed to complete the work defined in the project management plan to satisfy the project specifications
- Monitoring and Controlling : Those processes required to track, review, and regulate the progress and performance of the project; identify any areas in which changes to the plan are required; and initiate the corresponding changes.
- Closing : Those processes performed to finalize all activities across all Process Groups to formally close the project or phase.

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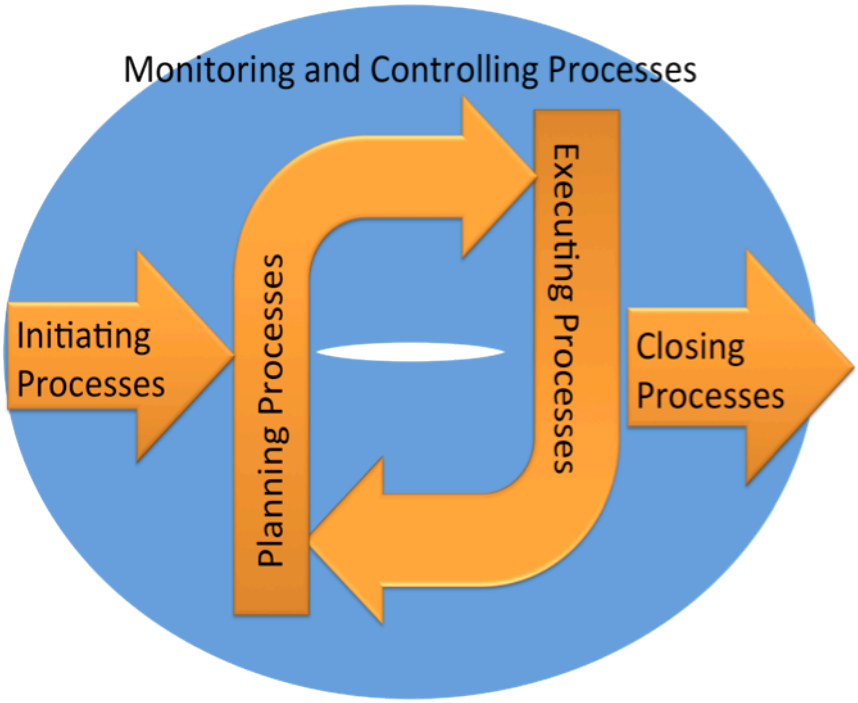

Figure 1 - PMBOK Process Groups

It should be noted that these processes can overlap and interact throughout a project or its various phases. Processes are further described in the PMBOK in terms of their:

- Inputs (primarily documents.)
- Tools and Techniques
- Outputs (primarily documents.)

The Project Management Knowledge Areas

This section organises project knowledge into ten knowledge areas that are typical of almost all projects:

- Project Scope Management - The processes to ensure that the project includes all the work required and only the work required to complete the project successfully.
- Project Time Management - The processes required to ensure timely completion of the project.
- Project Cost Management - The processes involved in planning, estimating, budgeting and controlling costs so that the project can be completed within the approved budget.

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- Project Quality Management - The processes and activities that determine quality policies, objectives, and responsibilities so that the project will satisfy the needs for which it was undertaken.
- Project Human Resource Management - The processes that organise and manage the project team
- Project Communications Management - The processes required to ensure timely and appropriate generation, collection, distribution, storage, retrieval and ultimate disposition of project information.
- Project Risk Management -The processes concerned with conducting risk management planning, identification, analysis, responses and monitoring and control on a project.
- Project Procurement Management - The processes to purchase or acquire the products services or results needed from outside the project team to perform the work.
- Project Stakeholder Management - the processes required to identify all people or organizations impacted by the project, analyzing stakeholder expectations and impact on the project, and developing appropriate management strategies for effectively engaging stakeholders in project decisions and execution.
- Project Integration Management - The processes and activities needed to identify, define, combine, unify and co-ordinate the various other processes and project management activities within the other Process groups.

Each of the ten knowledge areas contains the processes that need to be accomplished within its discipline in order to achieve an effective project management program. Each of these processes also falls into one of the five basic process groups, creating a matrix structure such that every process can be related to one knowledge area and one process group.

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8.6 Mapping to the PMBOK

The following diagram shows the PMBOK Process areas (across the top) mapped to the Knowledge areas (the left most column). Any project Management activity can be categorized both within a PMBOK Process area and within a PMBOK Knowledge area. I have demonstrated this by including some of the activities dealt with on this course.

Figure 2 - Matrix of Project management Processes and Knowledge Areas

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Exercise 1

Q: Using the matrix above, place the following activities in the appropriate boxes:

1) Completing a Progress Report
2) Creating a cost Baseline
3) Resolving stakeholders issues
4) Updating the contract
5) Developing the project charter
6) Earned Value technique
7) Bringing your team to the pub for lunch

8.7 The PMBOK Construction Extension

The PMBOK in its basic form will cater for application of projects in many areas such as Business programmes, Manufacturing, Services, and Information Technology etc. In order to cater for some specific additional factors that are present in particular industries occasional extensions are published. For example for Construction projects (particularly major projects) an extension to the PMBOK has been published.

Four specific Knowledge areas are included in this extension:

1) Safety Management – the Processes required to ensure that the construction project is executed with appropriate care in order to prevent accidents that cause or have the potential to cause personal injury or property damage
2) Environmental Management - the processes required to ensure that the impact of the project execution to the surrounding environment will remain within the limits stated in legal permits
3) Financial Management - the processes required to acquire and manage the financial resources needed for the project. It is focused on revenue source and net cash flows rather than on cost control.
4) Claims Management – the processes required to eliminate or prevent construction claims from arising and for the handling of such claims if they do.

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Student Notes

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