

# 1

# Introduction to Project Management

*Amos Haniff and Mohamed Salama*

## Learning objectives

By the time you have completed this chapter you should be able to:

- Identify the essential characteristics of a project
- Draw a distinction between projects and routine operations
- Describe the four phases of the project life cycle
- Evaluate the time, cost and quality constraints on the project.
- Evaluate the project success criteria
- Understand how the discipline of project management has evolved
- Summarise the project manager's knowledge areas

## 1.1 Introduction

Over the past thirty years, projects have changed the way we live and work. Through technology and new product development projects, we have seen changes in the way we communicate, the way we exchange knowledge and even how we spend our leisure time. Through capital projects, we have witnessed significant regeneration of major cities, faster transportation routes and new public spaces. Through drug development projects, we have witnessed mass immunisation, new medical treatments and an extension in the average life expectancy. Furthermore, through events projects we have been able to enjoy major, international sporting occasions, such as the Olympic Games, the FIFA World Cup and the American Super Bowl.

Within the world of business, organisations recognise that to remain competitive they need to develop project management methodologies. As a result of the World Wide Web, development in new technologies and globalisation, there are now fewer barriers to trade. With this increase in competition, powerful corporations are being threatened by small home businesses, across the globe. Changes in lifestyle have also led to a more demanding customer who wants new products and new technologies quicker and more advanced than before.

Through project management, organisations are able to bypass the traditional bureaucracies, inherent in large firms, and deliver products and services to customers faster and more efficiently. The project management methodology enables organisations to reduce costs, make better use of resources and improve quality. Significantly, the adoption of project management leads to a reduction in risk, which means fewer errors and improved success rates. This enables customer focus, improved customer service and increased customer satisfaction. It should, therefore, be of little surprise to find that 80% of global executives believe that having project management as a core competency within the organisation is critical to remaining competitive (Economist, 2009). It is for this reason that building a strong project management capability is a top priority for many firms as they plan for the future (PMI, 2010).

## 1.2 A brief history of project management

Before we begin to explore what a project is and how projects plans are developed and executed, it is worth considering how the discipline of project management has evolved over the past 50 years.

There has been the suggestion, within many project management textbooks, that that projects have been around since the pyramids of Giza. However, typical historical feats of engineering were not 'project managed' as we understand the term. In the first instance the architect or engineer responsible for the delivery of the 'project' did not have the same resource constraints as project managers do today. Rather, most ancient landmarks were built using slave labour, and failure to deliver often resulted in public execution of the project manager. Second, our ancestral 'project managers' did not plan within budget and deadline constraints. In fact, the majority of famous buildings were constructed at great costs, over many decades. The Great Wall of China took eleven centuries to complete, St. Peters Basilica in Rome took 120 years to build, and Antoni Gaudi's Sagrada Familia, has been in construction since 1882.

Morris (1997) provides the most respected history of project management in which he makes the argument that *modern* project management did not emerge

until the 1950s. This is when project management techniques started to be used in an organised process. At this time, the primary focus was on mathematical planning and control techniques to aid the management of large complex projects. These efforts resulted in the creation of two of the most important project management, planning tools. Firstly, in 1958 the US Department of Defence (DoD) developed Programme Evaluation and Review Technique (PERT) as a tool to support the POLARIS submarine and missile programme. Meanwhile in 1959, E.I du Pont de Nemours Company developed the Critical Path Method (CPM), to schedule the construction of major chemical plants in the US. As a result of the success of these planning methods, project management became very well publicised and other quantitative tools were developed. These included work breakdown structures (Chapter 6), earned value analysis (Chapter 11) and project crashing (Chapter 9).

Despite early success of project management, during the 1960s it was recognised that managing projects requires more than a toolbox of planning and control techniques to be successful (Avots, 1962). Researchers, therefore, began to consider the human dimension of projects. Subsequently projects became concerned with organisational structures (Chapter 2), team development (Chapter 5) and project leadership (Chapter 4). However, the most significant impact to the recognition of project management as a distinct management discipline was in 1969, when the first project management professional body, the Project Management Institute (PMI), was formed.

The 1970s was a time of refinement of project management tools. This included attention to matrix organisational structures (Chapter 2), the introduction of responsibility assignment matrices (Chapter 5), risk management (Chapter 7) and the development of project teams (Chapter 5). During this decade there was also advancement in information technology and computing that led to the development of highly sophisticated project management software. Project managers were gaining access to software that would allow the creation of Gantt charts, PERT diagrams, control resource usage and manage costs. Indeed, the developments in project management techniques and the benefits of adoption saw the discipline move outside its traditional heartlands of construction and engineering into mainstream management. PMI also reacted to the unprecedented growth in project management and introduced the first edition of the *Project Management Body of Knowledge* (PMBOK) in 1987, which has underpinned project management professionalism and education for the past three decades.

As a result of developments, by the 1990s project management was no longer confined to the creation of products and services, but were being used as a tool for business transformation, continuous improvement, organisational change, value