



Project Services Pty Ltd

A BRIEF HISTORY OF PROJECT MANAGEMENT.

Is our profession 50 or 5000 years old?

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A Brief History of Project Management.

Introduction

Projects in one form or another have been undertaken for millennia, but it was only in the latter part of the 20th century people started talking about 'project management'. Earlier endeavours were seen as acts of worship, engineering or nation building. And the people controlling the endeavours saw themselves as members of groups focused on specific callings such as generals, priests and architects.

There is an important distinction to be drawn here between projects: '*a unique transient endeavour undertaken to achieve a desired outcome*' and the profession of project management; or at least 'modern project management'. For a discipline to be considered a profession a number of attributes are generally considered necessary; these are:

- practitioners are required to meet formal educational and entry requirements,
- autonomy over the terms and conditions of practice,
- a code of ethics,
- a commitment to service ideals,
- a monopoly over a discrete body of knowledge and related skills.

Within this context, project management is best considered an 'emerging profession' that has developed during the last 30 to 40 years. Over this period project management associations around the world have developed a generally consistent view of the processes involved in 'project management', encoded these views into 'Bodies of Knowledge' (BoKs), described competent behaviours and are now certifying knowledgeable and/or competent 'Project Managers'. Some associations require formal educational and entry requirements and most have a commitment to service ideals. Certainly, if 'modern project management' does not qualify as a fully fledged profession at this point in time, it will evolve into one fairly quickly.

From a historical perspective this raises two questions, where did the ideas embedded in the BoKs come from and what gave rise to the formation of the project management associations that are creating our profession?

The evolution of Project Management Theory

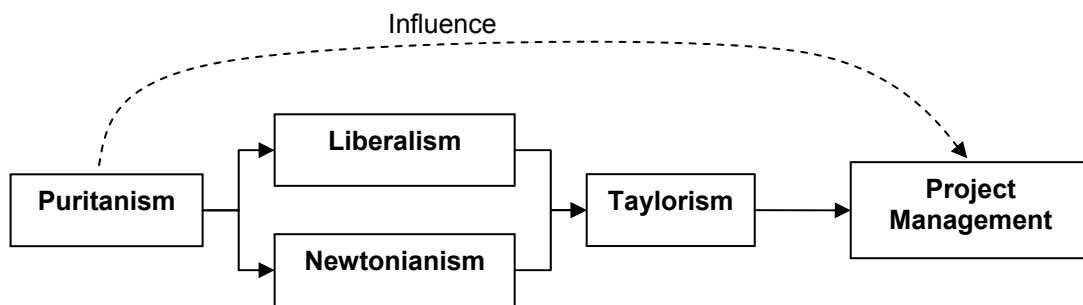
The genesis of the ideas that led to the development of modern project management can arguably be traced back to the protestant reformation of the 15th century. The Protestants and later the Puritans introduced a number of ideas including 'reductionism', 'individualism' and the 'protestant work ethic' (PWE) that resonate strongly in the spirit of modern project management.

Reductionism focuses on removing unnecessary elements of a process or 'ceremony' and then breaking the process down into its smallest task or unit to 'understand' how it works. Individualism assumes we are active, independent agents who can manage risks and create ideas. These ideas are made into 'real things' by social actions contingent upon the availability of a language to describe them. PWE focuses on the intrinsic value of work. Prior to the protestant reformation most people saw work either as a necessary evil, or as a means to an end. For Protestants, serving God included participating in and working hard at worldly activities as this was part of God's purpose for each individual. From the perspective of the evolution of modern project management, these ideas were incorporated into two key philosophies, Liberalism and Newtonianism.

Liberalism included the ideas of capitalism (Adam Smith), the division of labour, and that an industrious lifestyle would lead to wealthy societies.

Newtonianism marks the era of scientific enquiry. Newton saw the world as a harmonious mechanism controlled by a 'universal law'. Applying scientific observations to parts of the whole would allow understanding and insights to occur and eventually a complete understanding.

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For a full discussion of this diagram see 'The impact of Puritan ideology on aspects of project management'. International Journal of Project Management 25 (2007) 10-20

Figure 1

Both of these philosophies influenced the scientific management theories of Taylor. Taylor was undoubtedly influenced by his Quaker roots (Puritanism), worked in an intensely capitalistic society (Liberalism) and used the scientific approach of Newtonianism in his work developing the 'Classical School' of scientific management. Henry Gantt, the inventor of the now ubiquitous Gantt chart (bar chart) belonged to this school.

The branch of management that gave rise to the development of the Critical Path Method (CPM) of scheduling was Operational Research (OR). Whilst not strictly a 'management theory', OR supports management decision making. It is an interdisciplinary science which uses methods such as mathematical modelling and statistics to assist decision making in complex real-world situations. It is distinguished by its ability to look at and improve an entire system, rather than concentrating on specific processes which was the focus of Taylor's 'scientific management'. The growth of OR was facilitated by the increasing availability and power of computers which were needed to carry out the large numbers of calculations typically required to analyse a system.

The Operational Research Section in the UK CEBG were significant early developers of CPM and the purchase of a book on 'Operation Research' in 1958 triggered the ground breaking work by H.B. Zachry Company (Texas) that led to IBM developing its 'Project Control System' software. Critically, OR was also an area of interest to Jim Kelley. Kelley was scheduled to give a paper to the Case Institute operations research conference in January 1957 when he was seconded to the du Pont team being assembled by Morgan Walker that lead to the development of CPM. To close this loop, there would also appear to be a strong link between the work at the Case Institute and the development of CPM at the H.B. Zachry Co.

The development of general management theory through to the 1960s, and the emergence of CPM from OR were the critical underpinnings for the creation of 'modern project management'. However, on their own they would not have been sufficient to create the emerging profession of 'modern project management'. This required the formation of the project management associations.

Formation of a profession

The central theme running through the various project management BoKs is that project management is an integrative process that has at its core, the balancing of the 'iron triangle' of time, cost and output. All three facets must be present for a management process to be considered project management.

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The evolution of cost and scope control into relatively precise processes occurred during the 14th and 18th Centuries respectively. Time management lacked effective measurement and control until much later.

The first 'project' to add science to the process of time control was undertaken by Kelley and Walker to develop the Critical Path Method (CPM) for E.I. du Pont de Nemours. In 1956/57 Kelly and Walker started developing the algorithms that became CPM. The program they developed was trialled on plant shutdowns in 1957 and the first paper on critical path scheduling was published in 1958. The critical meeting to approve this project was held on the 7th May 1957 in Newark, Delaware, where DuPont and Remington Rand jointly committed US\$226,400 to fund the project. The foundations of modern project management were laid in 1957; but it took another 12 years before Dr Martin Barnes first described the 'iron triangle' of time, cost and output in a course he developed in 1969 called 'Time and Money in Contract Control'.

In the meantime, the catalyst for the spread of discussions on project management and the formation of associations to support these new ideas was the spread of scheduling, and more importantly professional schedulers during the 1960s. Arguably, the evolution of modern project management is a direct consequence of the schedulers need for a forum to discuss and develop their new discipline. These needs led directly to the formation of the various project management associations. Certainly well over 50% of the people that founded INTERNET in Europe (the forerunner of IPMA and the APM) and the PMI in America were schedulers. Recollections of early conferences and publications from these associations strongly suggest that in the 1960s their focus was almost exclusively on project controls and 'scheduling'.

Once founded, it was (and still is) the various project management associations that led the development of a defined and documented 'project management body of knowledge'. Only after this body of knowledge was formulated did it become possible to define project management competencies, formally examine project management knowledge and start the process of creating the profession of 'modern project management'.

Assuming the central hypothesis in this paper holds true, that: *the genesis of 'modern project management' was the spread of scheduling*; then the start of the processes that created our profession is the 7th May 1957. Given the central role CPM played in the start of our profession, this date seems the most appropriate 'start point' for a development that borrowed from previous management theories and continues to develop and evolve. As a profession, we are nearer to 50 than 5000!

This article is a synthesis of two conference papers prepared by the author, for additional information, references and acknowledgements see:

'The origins of modern project management' at www.mosaicprojects.com.au/Resources_Papers_050.html
'A brief history of scheduling' at www.mosaicprojects.com.au/Resources_Papers_042.html

Contribute to ongoing research; the author would appreciate any information on the development of CPM by the CEGB Operations Research Unit and the development of MPM in France. Email address for correspondence patw@mosaicprojects.com.au

For information on the **Association for Project Management** visit <http://www.apm.org.uk>

The full version of this article will be presented at the PMOZ Conference, August 2007.