#NOPROJECTS

AN INTRODUCTION TO A NEW WAY OF THINKING ABOUT WORK

BY EVAN LEYBOURN AND SHANE HASTIE

CHAPTER 1: THE ORIGIN OF PROJECTS

When I started researching for this book I was surprised to discover that, while the abstract concept of a "project" is as old as humanity itself, the modern definition of a project, and the associated domain of project management, is surprisingly young - only a little over 60 years old. The history of which is the Sisyphean effort to create predictability in an unpredictable environment with ever increasing spending and ever increasing risk.

Prior to the 1950's, countries, militaries and companies didn't create "projects" as we understand them, but rather acts of nation-building, war or engineering. These weren't led by project managers, but rather by engineers, architects, generals and craftsmen[1]. While the history of project management isn't a straight line, it is generally accepted that it was during the 1950's that the convergence of practice, process and management theory turned project management from a craft to a profession.

Today, we can define project management as "an advanced, specialised, branch of management"[2] or more specifically, a project as "a temporary endeavor undertaken to create a unique product, service or result."[3] Remember that definition - we'll come back to it shortly.

But let's go back a bit.

In 1697, Daniel Defoe (of Robinson Crusoe fame) wrote a series of essays on the topic of projects[4]. This is a truly fascinating read, and provides great insights into how these grand projects (be they nation-building or war machines) were funded. Defoe was highly critical of the "projectors" - what we would call investors - but recognised that many projects had left a positive legacy on the world.

"Invention of arts, with engines and handicraft instruments for their improvement, requires a chronology as far back as the eldest son of Adam, and has to this day afforded some new discovery in every age.

…

I shall trace the original of the projecting humour that now reigns no farther back than the year 1680, dating its birth as a monster then, though by times it had indeed something of life in the time of the late civil war. I allow, no age has been altogether without something of this nature, and some very happy projects are left to us as a taste of their success; as the water-houses for supplying of the city of London with water, and, since that, the New River — both very considerable undertakings, and perfect projects, adventured on the risk of success.

In the reign of King Charles I. infinite projects were set on foot for raising money without a Parliament: oppressing by monopolies and privy seals; but these are excluded our scheme as

---

[1] Patrick Weaver, PMP, FAICD, FCIOB, "The Origins of Modern Project Management," proceedings of Fourth Annual PMI College of Scheduling Conference, Marriott Pinnacle Downtown, Vancouver (2007), , http://www.mosaicprojects.com.au/PDF_Papers/P050_Origins_of_Modern_PM.pdf.

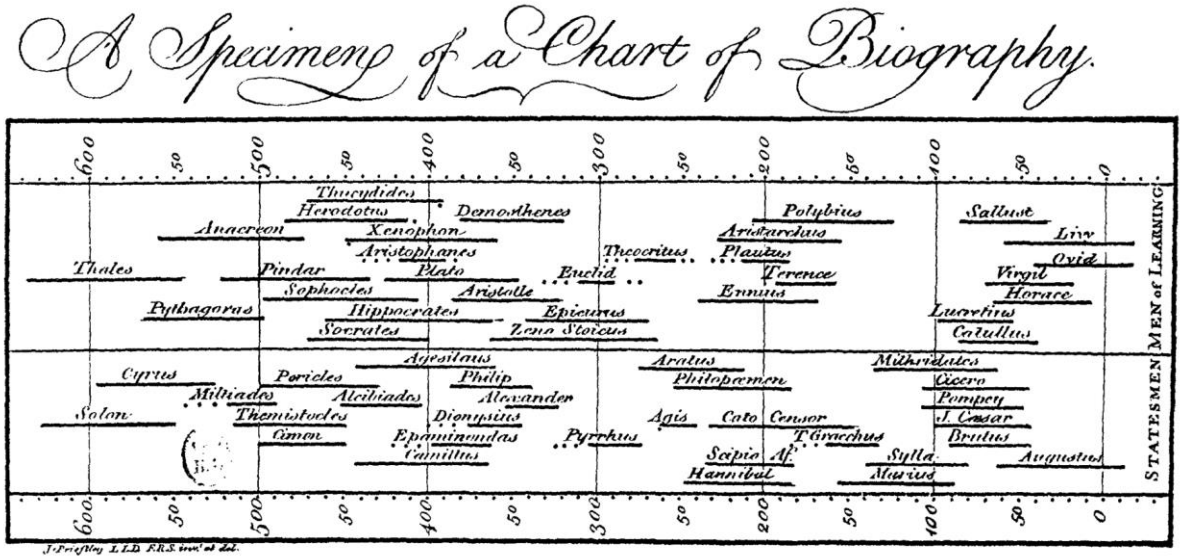
[2] Frederick L. Harrison and Dennis Lock, Advanced Project Management: A Structured Approach (Aldershot, England: Gower, 2004).

[3] "What Is Project Management?," PMI | Project Management Institute, accessed July 18, 2016, http://www.pmi.org/about/learn-about-pmi/what-is-project-management.

[4] Daniel Defoe, An Essay upon Projects (London: Printed for Thomas Ballard, 1698).

irregularities, for thus the French are as fruitful in projects as we; and these are rather stratagems than projects. After the Fire of London the contrivance of an engine to quench fires was a project the author was said to get well by, and we have found to be very useful. But about the year 1680 began the art and mystery of projecting to creep into the world."

Even many project management tools and visualisations trace their origins back centuries. The bar chart can be traced back to 1765 in Joseph Priestley's "Chart of Biography"[5].



A Redacted Version of Priestley's Chart of Biography (1765)

This chart was designed by Priestley as part of his book, Lectures on History and General Policy[6], so that students could "trace out distinctly the dependence of events to distribute them into such periods and divisions as shall lay the whole claim of past transactions in a just and orderly manner." I don't know about you, but that sounds a lot like a Gantt chart to me.

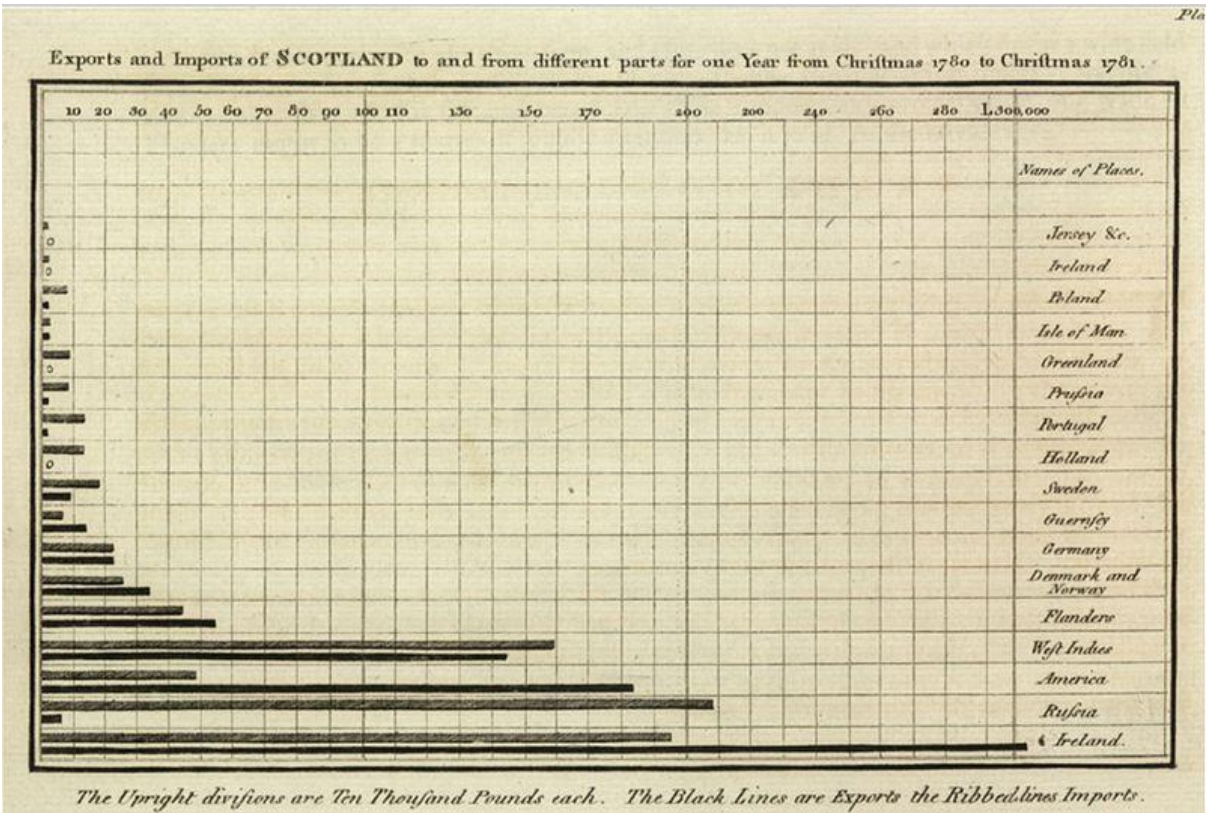
Priestly subsequently inspired William Playfair to develop the bar chart as we know it today in his book from 1786, "The Commercial and Political Atlas"[7]. Playfair is also generally credited with inventing the line, bar, area, and pie charts.

---

[5] Joseph Priestley, "A Redacted Version of Priestley's Chart of Biography (1765)," digital image, Wikipedia, accessed July 18, 2016, https://en.wikipedia.org/wiki/A_Chart_of_Biography#/media/File:PriestleyChart.gif.

[6] Joseph Priestley, Lectures on History and General Policy: To Which Is Prefixed, An Essay on a Course of Liberal Education for Civil and Active Life (London: Printed for J. Johnson ..., 1793).

[7] William Playfair, The Commercial and Political Atlas Representing, by Means of Stained Copper-plate Charts, the Progress of the Commerce, Revenues, Expenditure, and Debts of England, during the Whole of the Eighteenth Century (London: Printed by T. Burton, for J. Wallis, 1801).



The first bar chart - from Playfair's "Commercial and Political Atlas" (1786)

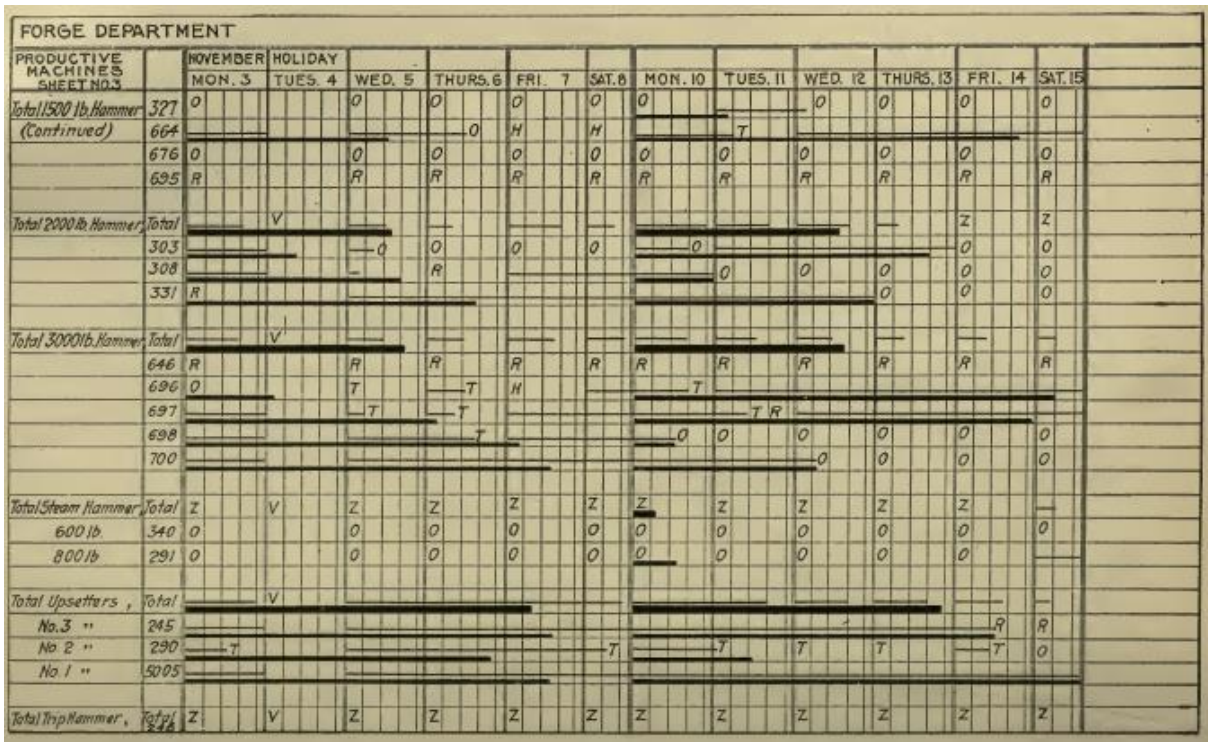
This all began to converge between the 1750's and 1850's as the industrial revolution completely transformed how we worked. Nowhere is this more evident than my favourite quote from Adam Smith from the "Wealth of Nations"[8]. Smith drew a comparison from the craft of pin making and the role of the talented pin-maker who *"…could not make twenty [pins in a day]. But in the way in which this business is now carried on … I have seen a small manufactory where ten men only were employed. Those ten persons could make among them upwards of forty-eight thousand pins in a day."* And he was right - easily mechanised and repeatable tasks could produce goods faster and of higher quality (or at least more consistent quality) than anything that came before.

Everywhere you look, you can see the legacy of the industrial revolution, both positive and negative. This industrial mentality has shaped the way we worked for centuries and continues to do so today. Our modern project management plan and work breakdown structure has more in common with the predictable segmentation of work in our pin making factory than we give credit for. Understanding this relationship is actually a key premise behind #noprojects and demonstrates some of the issues with project management as it is currently defined. Much of the work that we do today, especially knowledge work, is unique and innovative and has more in common with the talented pin maker than it does a pin-making factory. It is for this reason that, in my experience, creating accurate and useful work breakdown structures and project management plans is impossible in any meaningful way.

As industry and products became more complex, so did our tools and visualisations. In 1896, Karol Adamiecki created the harmonogram - a floating bar chart to show tasks or resources over time. A

[8] Adam Smith, An Inquiry into the Nature and Causes of the Wealth of Nations (London, 1776).

little while later, Henry Gantt independently developed the Gantt chart[9] (amongst others) as a visualisation tool which was used to help improve the manufacture of munitions and naval aircraft during WW1. These charts were designed to compare expected production with actual output so that variance could be easily identified. The modern Gantt chart's pervasiveness is evidence of how drastically it impacted how we measure and track production to this day.



An early production Gantt Chart

But it was only during the 1900's to 1950's that the origins of what we now call Project Management emerged[10]. The immediate precursor would have to be Taylorism and Scientific Management. Published in 1911, Frederick Winslow Taylor's "Principles of Scientific Management"[11] outlined ways in which worker productivity could be increased. Taylor studied labour intensive and repetitive activities in detail, for example loading iron from steel mills into a rail car, identifying where each individual action could be optimised to improve productivity and reduce error. Considered progressive for its time, even fatigue was an attribute to be analysed in order to improve productivity - in this case by recommending rest breaks for labourers to recover. Though don't assume that this means that that Taylor was a champion of workers rights, rather workers were "resources" to the utilised as efficiently as possible. Compared to previous ways of working, Scientific Management was seen to be highly effective even though it required a higher manager to worker ratio and, by today's standards, would be considered micro-management.

And that was one of the greatest criticisms of Scientific Management - the disenfranchisement of individual workers who were reduced to being highly focused "automen" without connection to the

---

[9] Wallace Clark, The Gantt Chart; a Working Tool of Management (New York: Ronald Press Company, 1923), , https://ia802604.us.archive.org/26/items/ganttchartworkin00claruoft/ganttchartworkin00claruoft.pdf.

[10] Elias G. Carayannis, Young-Hoon Kwak, and Frank T. Anbari, The Story of Managing Projects: An Interdisciplinary Approach (Westport, CT: Praeger Publishers, 2005).

[11] (New York: Harper & Brothers, 1911).

total production. This, and other reductionist approaches, worked well in simple domains but, before long, were replaced by system-wide approaches. Although you can still see this reductionist model used in modern project management in the form of the "Work Breakdown Structure" (WBS).

Even though Scientific Management is largely obsolete today, we owe a debt to Taylor for introducing the scientific method and empiricism into management models. Taylor rejected the idea that trades were "craft" and believed that they could be studied, improved, and mechanised. Many of Taylor's observations on motivation and productivity continue to inform modern management; including #noprojects. In many ways Scientific Management was the culmination of the industrial revolution's "factory" management model.

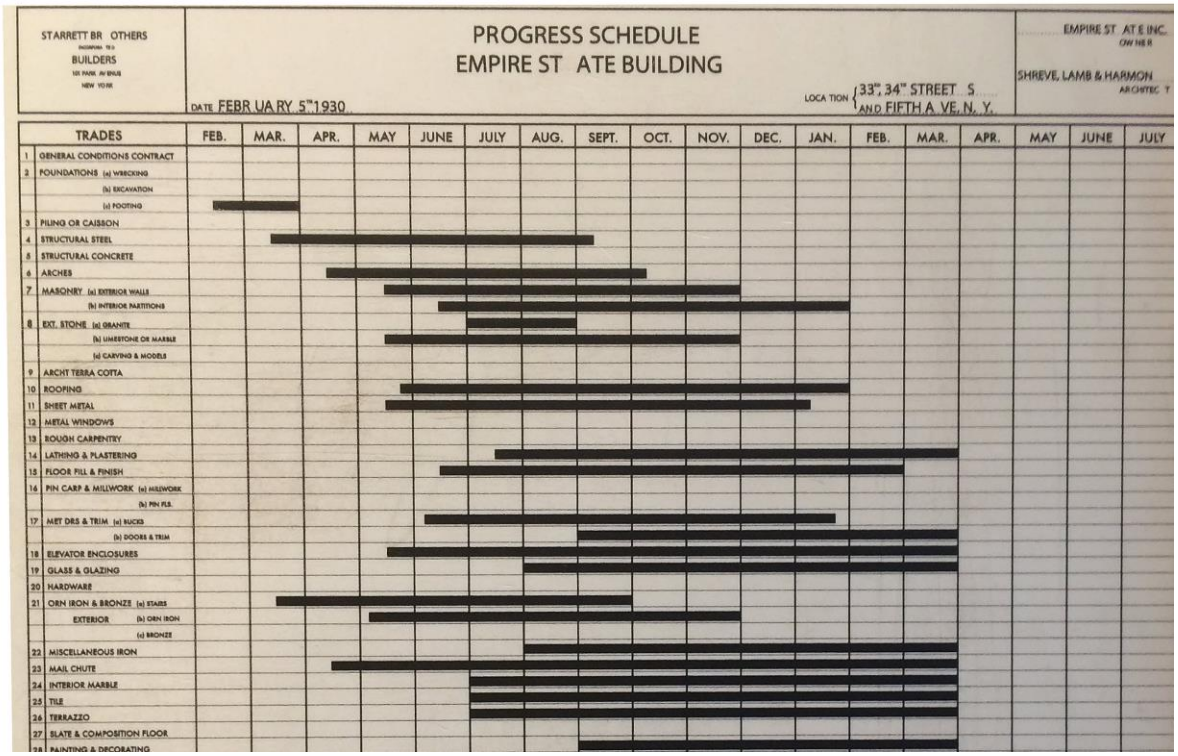
As a discrete concept, project management started to emerge in the 1920's and 30's. The earliest formal usage I can find is from the US Bureau of Reclamations which created a "project office" with a "project engineer" leading a project[12]. The role of "project coordinator" emerged at roughly the same time in the US aircraft industry.

Coming into the 1930's we start to see massive construction endeavours being "project managed". In 1931 the Empire State Building was delivered ahead of time and under budget - attributed to the use of Location Based Scheduling methods (specifically Flow-Line Scheduling). The effectiveness of Flow-Line Scheduling and other types of Location Based Scheduling methods, such as the US Navy's Line of Balance (LOB) technique[13], were indisputable and effectively used for scheduling repetitive projects such as pipeline, railway or high-rise projects. I will admit to being a little surprised to learn that not all construction projects used these methods. For example, in 1936, the Hoover Dam in the US was successfully completed under budget and ahead of schedule using the good old Gantt Chart.

And of course, no history of projects would be complete without at least mentioning the Manhattan Project (1942 – 1945); probably one of the most famous (or should that be infamous) projects of the era.

[12] Patrick Weaver, PMP, FAICD, FCIOB, "The Origins of Modern Project Management," proceedings of Fourth Annual PMI College of Scheduling Conference, Marriott Pinnacle Downtown, Vancouver (2007), , http://www.mosaicprojects.com.au/PDF_Papers/P050_Origins_of_Modern_PM.pdf.

[13] Russell Kenley and Olli Seppänen, Location-based Management for Construction: Planning, Scheduling and Control (London: Routledge, 2006).



Progress Schedule for the Empire State Building (1930)

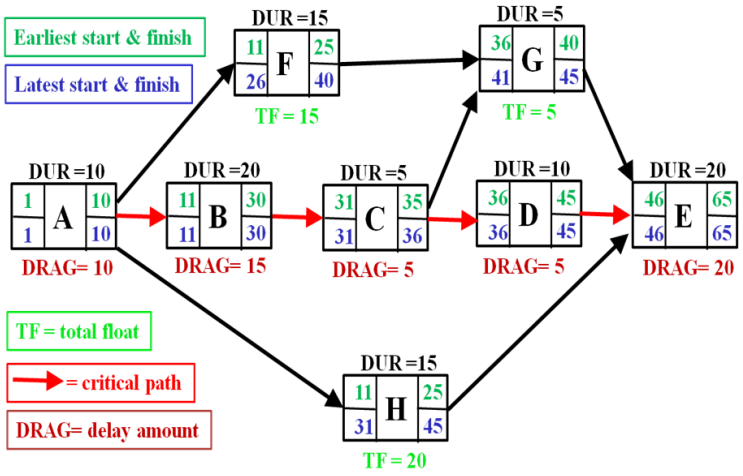
As far as I can discover in my research, the first use of the title "project manager" seems to be around 1953 in the aerospace industry; specifically the Martin Company (which would become Lockheed Martin) and the McDonnell Aircraft company[14]. That being said, these early roles don't have many of the same responsibilities that we would attribute to a modern project manager.

The first "project", in the modern sense of the word, would probably be from DuPont in 1957. James Kelley of DuPont and Morgan Walker of Remington Rand[15] developed a series of mathematical algorithms to track the relationships between individual activities, effort and time that would later become the Critical Path Method (CPM). CPM[16] constructs a model of a project that defines all the required activities and the dependencies between them. Using an estimated duration of each activity, CPM calculates the longest path of sequential activities which together meet the project goal and the earliest and latest that any activity can start and finish without making the project longer.

[14] Stephen B. Johnson, The Secret of Apollo: Systems Management in American and European Space Programs (Baltimore, MD: Johns Hopkins University Press, 2006).

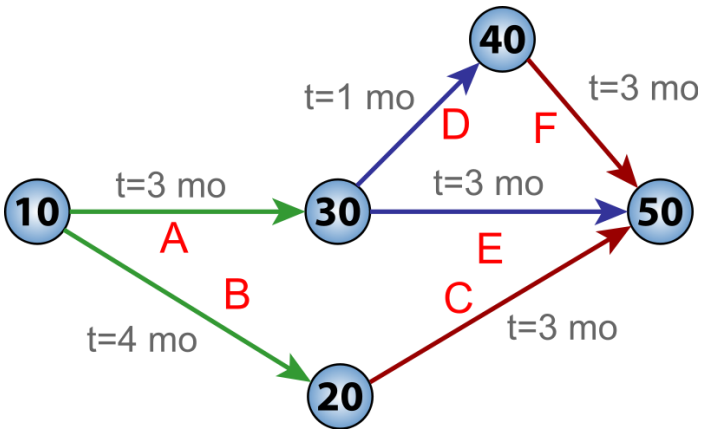
[15] Patrick Weaver, PMP, FAICD, FCIOB, "The Origins of Modern Project Management," proceedings of Fourth Annual PMI College of Scheduling Conference, Marriott Pinnacle Downtown, Vancouver (2007), , http://www.mosaicprojects.com.au/PDF_Papers/P050_Origins_of_Modern_PM.pdf.

[16] "Critical Path Method," Wikipedia, , accessed July 18, 2016, https://en.wikipedia.org/wiki/Critical_path_method.



Activity-on-node diagram showing critical path schedule, along with total float and critical path drag computations[17]

At about the same time, Booz Allen Hamilton and the US Navy developed the Program Evaluation and Review Technique (PERT)[18] for the Polaris submarine missile program. Conceptually similar to CPM, PERT is a statistical tool to analyse and represent the tasks involved in a project and determine the minimum time needed to complete the total project. These methods allowed the creation of projects on a scale never seen before. The most impressive adoption would have to be NASA using PERT to maintain and schedule the Apollo missions, including the 6 successful moon landings.



PERT network chart for a seven-month project with five milestones (10 through 50) and six activities (A through F).

It would be remiss of me not to mention programme management at this point (or program management for the Americans). As a model of encapsulating multiple initiatives (such as projects), formal programme management probably predates formal project management. Going back to our NASA example, Apollo was actually a programme of work managed though the Apollo programme

---

[17] "Simple Activity-on-node Logic Diagram with Total Float and Drag Computed," digital image, Wikipedia, June 6, 2011, accessed July 18, 2016, https://commons.wikimedia.org/wiki/File:SimpleAONwDrag3.png.

[18] "What Is PERT Chart (Program Evaluation Review Technique)?" TechTarget, May 2007, , accessed July 18, 2016, http://searchsoftwarequality.techtarget.com/definition/PERT-chart.

office. As well as managing each of the projects, the Apollo programme office was also responsible for managing procurement, contracts and overall performance.

Beyond CPM and PERT, the 1960's saw an explosion of project management tools and techniques. Just to name a few;

- PERT/Cost[19] - which introduced the Work Breakdown Structure (WBS),
- RAMPS (Resource Allocation & Multi-Project Scheduling),
- Cost/Schedule Control Systems Criteria (C/SCSC)[20],
- Earned Value Management[21] - which improved a project's ability to budget and subsequently manage its financial performance, and
- Configuration Management.

It didn't take long for these tools and techniques to be rationalised, but we can safely say that modern project management was well underway. In fact, with the exception of risk management[22], modern project management hasn't substantially changed since the 1960's.

And now we come to software engineering. Nearly 50 years ago, in 1968, the NATO Conference on Software Engineering was created to bring the theoretical foundations and practical disciplines from traditional engineering domains into the software world as a way of solving the, so-called, software crisis. The software crisis was a perception at the time (which continues today) of the increasing inability of the software development process to deliver high-quality products in a timely manner - in general attributed to the exponential rise in computing power[23]. Even today, there continues to be debate as to whether there was (or is) a software crisis at all, the participants at the conference concluded that there was definitely an identity crisis[24].

In my opinion, this identity crisis was partly a "me too" attitude that came out of early software development - that software developers should have the same respect and reputation as engineers and other "professions". This expressed itself in the idea that writing software should be predictable and mathematically provable like traditional engineering - akin to building a bridge. And so in order to emulate "our betters", software was wrapped up in projects with detailed requirements, specifications and plans like any other engineering endeavour. Or that was the assumption - there

---

[19] DOD and NASA Guide: PERT COST Systems Design (Washington, 1962).

[20] Erik G. Cummings, B.A. Captain, USAF and Kirk A. Schneider, B.S. Captain, USAF, "COST/SCHEDULE CONTROL SYSTEMS CRITERIA: A REFERENCE GUIDE TO C/SCSC INFORMATION" (Master's thesis, Faculty of the School of Systems and Logistics of the Air Force Institute of Technology, 1992), , accessed July 18, 2016, http://www.dtic.mil/dtic/tr/fulltext/u2/a258445.pdf.

[21] Wayne F. Abba, "How Earned Value Got to Prime Time: A Short Look Back and Glance Ahead," PMI | Project Management Institute, , accessed July 18, 2016, http://www.evmlibrary.org/library/EVLook Back-Glance Ahead.abba.pdf.

[22] Patrick Weaver, PMP, FAICD, FCIOB, "The Origins of Modern Project Management," proceedings of Fourth Annual PMI College of Scheduling Conference, Marriott Pinnacle Downtown, Vancouver (2007), , http://www.mosaicprojects.com.au/PDF_Papers/P050_Origins_of_Modern_PM.pdf.

[23] Edsger W. Dijkstra, "The Humble Programmer," Communications of the ACM Commun. ACM 15, no. 10 (1972): , doi:10.1145/355604.361591.

[24] Andreas Brennecke and Reinhard Keil-Slawik, Position Papers for Dagstuhl Seminar 9635 on History of Software Engineering, report, Leibniz Center for Informatics, Schloss Dagstuhl, , accessed July 18, 2016, https://www.dagstuhl.de/Reports/96/9635.pdf.

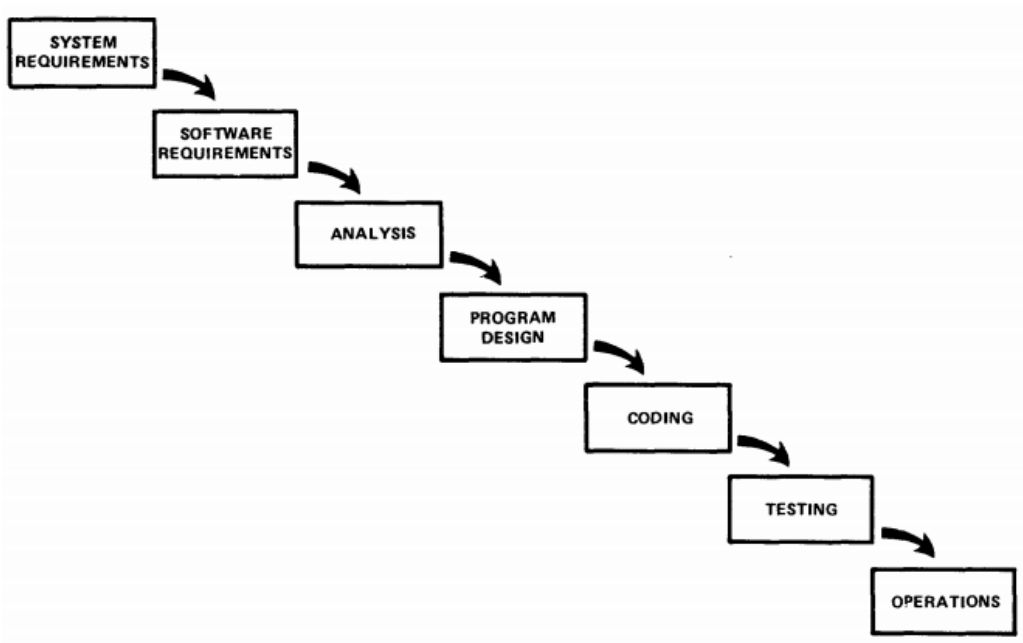
was an idolised view of engineering disciplines amongst the NATO conference delegates which influenced many of the findings and recommendations.

But it did help. In many cases this approach was able to bring discipline to large software projects and allow them to scale - but there was a high cost which we will discuss in the next chapter.

With project management becoming a profession, industry certification bodies began to emerge - the most famous and relevant today would be the Project Management Institute (PMI) in 1969[25]. Coincidently, 1969 was also when the famous "Iron Triangle" metaphor for time, cost and output emerged. This was created by Dr. Martin Barnes in his "Time and Money in Contract Control"[26] course.

It's around this time (August 1970) that Winston Royce first coined the term "waterfall"[27] in relation to projects where each phase must be completed before the next starts. What is most interesting about this is that in that same paper, Royce acknowledged the significant risks with this approach.

"I believe in this concept, but the implementation described above is risky and invites failure. … The testing phase which occurs at the end of the development cycle is the first event for which timing, storage, input/output transfers, etc., are experienced as distinguished from analyzed. These phenomena are not precisely analyzable."



An idealised "waterfall" software project

Throughout the 1970's and 80's, project management continued to consolidate its reputation as a profession and position itself as a critical business process. The core responsibilities (and associated

[25] Frederick L. Harrison and Dennis Lock, Advanced Project Management: A Structured Approach (Aldershot, England: Gower, 2004).

[26] Patrick Weaver, PMP, FAICD, FCIOB, "The Origins of Modern Project Management," proceedings of Fourth Annual PMI College of Scheduling Conference, Marriott Pinnacle Downtown, Vancouver (2007), , http://www.mosaicprojects.com.au/PDF_Papers/P050_Origins_of_Modern_PM.pdf.

[27] Winston W. Royce (1970). "Managing the Development of Large Software Systems" in: In: Technical Papers of Western Electronic Show and Convention (WesCon) August 25–28, 1970, Los Angeles, USA.

processes and tools) expanded from simply managing time, cost, and scope to include risk management, stakeholder management and quality management. Common project management methods and frameworks were created and shared between companies - others, like PROMPT (which would later become PRINCE2), were commercialised.

Business models began to directly incorporate project management. The Capability Maturity Model (CMM), and later CMMI, would begin to audit organisations on their project management maturity as part of their general process maturity. Software development began to be seen, incorrectly, as predictable and repeatable - a seemingly common, yet dangerous, confusion between engineering and manufacturing. Watts Humphrey wrote in 1989, *"Dr. W. E. Deming, in his work with the Japanese after World War II, applied the concepts of statistical process control to many of their industries. While there are important differences, these concepts are just as applicable to software as they are to producing consumer goods like cameras, television sets, or automobiles."*[28]

As microcomputers became widely available to businesses, project management software started to become more accessible[29]. The ease with which projects could be scheduled greatly simplified the job of schedulers and project managers. This opened up project management to millions of smaller businesses but, on the downside, also gave the impression that anyone could run a project just by entering a list of tasks into a program. I personally think Microsoft Project is singlehandedly responsible for the ruination of many projects and will probably be responsible for whatever project leads to the downfall of humanity[30].

The last 20 years has seen two major shifts in project management. A consolidation of frameworks and methods and a rise in agile project management. The consolidation has been driven very strongly by PMI and the Project Management Body of Knowledge (PMBoK). If we look at the market share of different (non-agile) project management frameworks, the only real alternative to the PMBoK is PRINCE2 (PRojects IN a Controlled Environment) released by the UK Government with 11% market share compared to PMI's 27%[31]. The vast majority continues to be made up of ad-hoc and custom project management processes.

Agile project management emerged in the 80's, although didn't gain widespread market awareness until after the Agile Software Development Manifesto[32] was written in 2001. Agile itself isn't a framework or method, but rather a value system to deliver products in a highly flexible, customer focused and incremental manner. There are hundreds of different agile frameworks, the most famous being Scrum[33], Extreme Programming (XP)[34], Test-Driven Development (TDD)[35], and

---

[28] Watts S. Humphrey, Managing the Software Process (Reading, MA: Addison-Wesley, 1989).

[29] Elias G. Carayannis, Young-Hoon Kwak, and Frank T. Anbari, The Story of Managing Projects: An Interdisciplinary Approach (Westport, CT: Praeger Publishers, 2005).

[30] Although Microsoft PowerPoint will come a close second.

[31] Insights and Trends: Current Programme and Project Management Practices, report, 2007, , accessed July 18, 2016, http://www.pwc.com/us/en/people-management/assets/programme_project_management_survey.pdf.

[32] "Manifesto for Agile Software Development," 2001, , accessed July 18, 2016, http://agilemanifesto.org/.

[33] "Scrum," , accessed July 18, 2016, https://www.scrum.org/.

[34] Kent Beck, Extreme Programming EXplained: Embrace Change (Reading, MA: Addison-Wesley, 2000).

[35] Kent Beck, Test-driven Development: By Example (Boston: Addison-Wesley, 2003).

Kanban[36]. I assume that most readers have a passing familiarity with agile and we won't go into detail.

One interesting anecdote however. The initial idea for Scrum was triggered by a HBR article from 1986 titled "The New New Product Development Game"[37]. Note the term product, not project. In fact, nothing in Scrum is designed for managing projects, rather it is a product development framework.

SIDEBAR - THE AGILE MANIFESTO

Written in 2001, The Agile Software Development Manifesto[38] describes what it means to "be" agile. And I quote;

We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

- *Individuals and interactions over processes and tools*
- *Working software over comprehensive documentation*
- *Customer collaboration over contract negotiation*
- *Responding to change over following a plan*

That is, while there is value in the items on the right, we value the items on the left more.

What do each of these values mean?

1. *We value individuals and interactions over processes and tools.* That is, while processes and tools can help sustain a consistent level of output, motivated individuals and teams collaborating and working together, are more creative, and can produce higher quality work.
2. *We value working software over comprehensive documentation.* This means that, while processes that support delivery are important, the team's focus should be on delivering to the customer's needs.
3. *We value customer collaboration over contract negotiation.* Written contracts are still important. However, you should be treating your customer as a partner, not as an opponent. The goal of an agile contract is to facilitate rather than protect, though it can do that as well.

[36] David J. Anderson, Kanban: Successful Evolutionary Change for Your Technology Business (Sequim, WA: Blue Hole Press, 2010).

[37] Hirotaka Takeuchi and Ikujiro Nonaka, "The New New Product Development Game," Harvard Business Review January 1986, , accessed July 18, 2016, https://hbr.org/1986/01/the-new-new-product-development-game.

[38] "Manifesto for Agile Software Development," 2001, , accessed July 18, 2016, http://agilemanifesto.org/.

4. *We value responding to change over following a plan.* Under agile, plans are useful as a guide, but adapting to your customer's changing requirements brings greater business value, for both you and your customer.

The values on the right (processes, documentation, contracts and plans) are still important; however, to be adaptable and agile, you need a greater appreciation of the values on the left (individuals, working software, customer collaboration, and responding to change).

Supporting the four core values, are the 12 principles of the agile manifesto that define the agile mindset. These are the key attributes that are most important to agile practitioners. Keep in mind that, although originally written in the context of software engineering, the same mindset applies across almost any industry or domain.

1. *Our highest priority is to satisfy the customer through early and continuous delivery of valuable software*
2. *Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.*
3. *Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter time-scale.*
4. *Business people and developers must work together daily.*
5. *Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.*
6. *The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.*
7. *Working software is the primary measure of progress.*
8. *Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.*
9. *Continuous attention to technical excellence and good design enhances agility.*
10. *Simplicity, the art of maximising the amount of work not done, is essential.*
11. *The best architectures, requirements, and designs emerge from self-organising teams.*
12. *At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behaviour accordingly.*

Which brings us to today. Project management is still evolving and can be best described as an "emerging profession"[39]. It has brought significant standardisation to work models across the

[39] Patrick Weaver, PMP, FAICD, FCIOB, "The Origins of Modern Project Management," proceedings of Fourth Annual PMI College of Scheduling Conference, Marriott Pinnacle Downtown, Vancouver (2007), , http://www.mosaicprojects.com.au/PDF_Papers/P050_Origins_of_Modern_PM.pdf.

world[40]. That is to say; you're likely to run projects the same way whether you are in Australia, the US, China, Japan or Russia.

But we have a problem. The project way of working, as it's been evolving over the last few centuries, isn't keeping up with the needs of the modern economy - especially those businesses in the digital economy. But most organisations don't know anything else. Managers generally like projects because it gives them an answer to "when will it be done" - or more accurately, the perception of "when will it be done". The finance division also likes projects because they can encapsulate work in a neat little package simplifying budgeting, forecasting and financial management.

However a lot of work in the modern economy is fundamentally ambiguous, unpredictable and sometimes even chaotic. Projects nearly always go over time or over budget and someone is usually unhappy with any project that we run. Either the money runs out or the product is delivered with fewer features & capability than the customer wants or the money continues and finance is unhappy because we're blowing their neat little 18 month forecast out of the water.

This is compounded by the fact that the development lifecycle of most products is much greater than that of the project (or "temporary endeavour") that initiated it. We're not talking about a construction project, like a bridge, where, when the bridge is built, the bridge is built. There's no new customer value to be gained by continuing to work - you can't keep adding features to a bridge. We're talking about knowledge work (such as software) where there is always more value to be created and where the maintenance cost is likely to be between two[41] and ten[42] times greater than the initial cost of bringing it to market. Even the fact that we are talking about total *cost* of ownership and not total *value* generated is indicative of the problem.

So where have projects gone wrong?

---

[40] Seweryn Spaleka, The Influence of Country of Origin on Project Management: An International Empirical Study, proceedings of 19th International Scientific Conference; Economics and Management 2014, Riga, Latvia.

[41] Barry W. Boehm, Software Engineering Economics (Englewood Cliffs, NJ: Prentice-Hall, 1981).

[42] Jussi Koskinen, Software Maintenance Costs, working paper, Department of Computer Science and Information Systems, University of Jyväskylä, September 10, 2010, , accessed July 18, 2016, https://web.archive.org/web/20120313070806/http://users.jyu.fi/~koskinen/smcosts.htm.