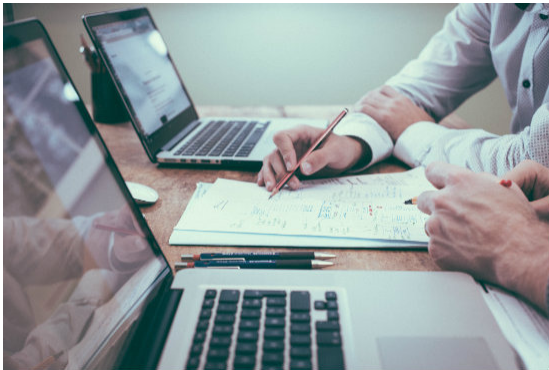


Processes in Project Management

The next generation of project management standards to be released by both ISO and PMI in 2020 will look radically different to their predecessors. Project management evolving beyond the concept of *'generally accepted good practices'*, defined by 40 or 50 processes. Both ISO 21502 and the *PMBOK® Guide 7th Edition* are set to drop the concept! The purpose of this article is to outline the reasons why.

The traditional 'process based' approach



The concept of describing the precise processes needed to accomplish a task was honed by Taylor as part of the development of scientific management in the early days of the 20th century. Scientific study and careful analysis defined the 'one best way' of doing the work and the time it needed. Some 10 years later the Gilbreths advanced this concept with the caveat that the current 'best method' may be improved by applying learned experience¹.

By the 1950s the concept of a 'process' with defined inputs, transformed by the application of defined tools and techniques to produce outputs was firmly established in quality control and management. Process improvement, statistical control and other concepts linked to the application of processes in business were central to the rapid development of post-war industry. *'Processes are the structure by which an organization does what is necessary to produce value for its customers.'*²

During the development of the 1996 version of the *PMBOK® Guide*, PMI adopted processes as the best way to organise and explain the complex flow of information through the life of a typical project. The *PMBOK® Guide* came to embody *'generally accepted good practices that apply to most projects, most of the time'*. Over the years, the 37 processes in the 1996 version of the *PMBOK® Guide* have slowly expanded to 49 in the 6th Edition. Through the editions, PMI have also progressively increased the emphasis placed on the need to customise and tailor processes to meet the needs of each individual project, but is this enough?

The questions I want to answer in this article are:

- First can a practice that is as diverse as project management still be adequately described in some 50 processes? – Probably **NO!**
- If not how can a guide to the project management body of knowledge be structured in the future?
- Is a four yearly cycle appropriate or given the rate of change in the profession should 'the guide' be updated more frequently?

¹ For more on *the evolution of project management and processes* see: https://mosaicprojects.com.au/PDF_Papers/P050_Origins_of_Modern_PM.pdf (page 8)

² Thomas Davenport (1993). *Process Innovation: Reengineering work through information technology*. Harvard Business School Press, Boston

Manufacturing processes were developed around the concept of taking specific inputs that were to be processed in a defined way to create consistent outputs. Business processes define how the work is done within an organisation, to meet the needs of its customers³. PMI's approach was to generalising processes across a management discipline adapted from this basic concept.

The idea was powerfully successful when most projects, most of the time, had very similar characteristics. They were approved, planned, built and closed. The same approach was used in construction, engineering, and most other industries that 'did projects' in the 1990s and the concept remained largely true for the next 20 years or so.

In the current era, some projects still follow the traditional approach defined in 1996 PMBOK (eg, construction/engineering), many others used various iterative approaches, any others take a fully adaptive and agile approach to achieving a successful outcome, my feeling is at the current time, probably 2/3rds of the projects globally (counted by number, not value) cannot apply 'standard processes' because they are using a delivery strategy that was not common in 1996 when the original structure of the PMBOK was defined! Some projects still follow the traditional approach (eg, construction/ engineering), others used various iterative approaches, many others take a fully adaptive and agile approach to achieving a successful outcome.

There appears to be some core objectives that are consistent across all of these approaches, for example they all use some form of schedule management to get the *right people* into the *right place* at the *right time* adequately resourced to do the *right work*. However, the processes applied to create and manage the information needed to accomplish this objective have very little in common. There is an array of techniques that can be used to 'manage the schedule'; some of the options include:

- Traditional critical path (CPM) scheduling, critical chain, and/or bar charts
- Chainage charts, location-based scheduling and/or 'line-of-balance' for repetitive projects such as pipelines.
- Various forms of backlog, burndown chart, and/or Kanban used to understand what is left to do in agile projects.

Resources are allocated to logically constrained activities in traditional CPM scheduling, resources choose which activities to include in their next 'sprint' in an agile project, the rate of progress of resources dictate the arrangements in linear projects. Similar challenges exist across most, if not all, of the knowledge areas which makes creating processes that can work across all of the different delivery strategies virtually impossible.

A paradigm shift is occurring

Project management standards are shifting towards defining a management outcome, not the work to achieve the outcome. The developers of standards have at last recognized that the processes needed to manager a \$20 billion oil refinery project are totally different to the processes needed to manager a \$20k agile software project. Consequently, international / global standards cannot be applicable to both if they are written around 'processes'. The standards need to be principle/outcome focused (what is needed). For

³ Processes are still an important element in designing and implementing an effective system to manage a project (even in an 'Agile' environment), the key difference is the processes need to be specific to the project delivery methodology and the organization. For more on processes see:

https://www.mosaicprojects.com.au/WhitePapers/WP1046_Process_Improvement.pdf



example, the new BS 6079:2019⁴ – “Project management – Principles and guidance for the management of projects”, in Chapter 5 “Principles of Project Management” defines eight principles of project management:

1. Be driven by needs and benefits
2. Engage stakeholders throughout the project
3. Having a single point of accountability is critical throughout the project
4. Promote collaborative working
5. Governance and management should be appropriate and proportionate
6. Experience and lessons should be captured, shared and applied
7. Define working methods for specialist deliverables and outputs
8. Take a gated approach to projects

The standard goes on to describe *what* is needed to deliver these principles and *why* they are important.

The next level down, is where an organization sets the strategy and methodology for delivering a project in conformance with the overarching standard. This level must have appropriate processes (that define *how* this will be achieved). BUT there will be two very different sets of processes based on the two projects mentioned above.

For example, scheduling still matters (my view is it is a fundamental requirement) but standards need to define why it is important! A section on scheduling that canvasses all of the different methodologies should look something like:

1. Choose and employ an appropriate scheduling methodology that is suited to the nature of the project work and the intended strategy for accomplishing that work
2. Develop a realistic and achievable schedule that defines the work needed to complete the project at an appropriate level of detail.
3. Maintain the schedule by regularly statusing the progress of work and updating the schedule with any new information
4. The schedule should be capable of providing management with a clear picture of the work accomplished to date, the work remaining to complete the project, and a realistic assessment of the time and resources needed to accomplish the remaining work.

This management frame works as effectively with a ‘burn-down chart’, a traditional CPM schedule and/or a chainage chart (or any one of the dozen or more other approaches to scheduling such as ‘critical chain’). And, if management has the information in point 4 the project is running a good scheduling system (management making use of the information is of course a different issue....).

However, to achieve this, every sentence and paragraph in the new standards will need to be tested against both the needs of a multi-\$billion engineering project and simultaneously against the needs of a small adaptive agile project to create a ‘standard requirement’.

⁴ Note: BS 6079 has never used processes to define project management.



Supporting the new Standards in your organisation

The shift in style of the new project management standards opens up a range of opportunities and challenges. The fundamental purpose of a standard is to provide standardized guidance that organizations can rely on. Standards are frequently referenced in contracts, other formal documentation and form the basis for certifications, stability is essential. Globally standards are reviewed and updated every 4 to 5 years to balance the need for currency against the need for consistency and it helps if the underlying principles remain steady for longer periods. However, the *standard* is only part of the overall knowledge framework. 'Guidance' on implementing the standards in your organisation, on your type of project (or projects) is also required and is the larger part of the knowledge needed by an organisation and also in my opinion, the most useful.

The Knowledge Management component

The 'guidance element' element is a knowledge repository and knowledge management (KM) systems should seek to be as up to date as possible. To achieve this, most KM systems are web based and assume that once information is printed it is no longer current. Managing a KM system needs skill and knowledge but should be a real time, full time function⁵. The knowledge element builds onto the standard as a 'cloud' based resource that is the subject of continual improvement and updating. Achieved by allowing staff members to contribute their knowledge on a continuous basis, subject to review and edit to grow and adapt as the project management functions grow and adapt.

A careful design of the knowledge structure based on either the *PMBOK® Guide*, or ISO 21502, augmented with information from the other standards, and enhanced with current developments from industry would create a very useful and dynamic source of knowledge.

This concept is not new – Wikipedia provides an excellent prototype. Mosaic has been working along these lines for a while now, our Project Management Knowledge Index (PMKI) provides a framework of information structured around the knowledge areas in the *PMBOK® Guide* and other key standards. Access to this resource from the links below is free and open to everyone.

The Role of Processes

Processes (and/or standard operating procedures)⁶ remain a critically important part of every well-defined methodology⁷. They define the way the methodology will be implemented to achieve the project objectives. They should be simple, tailored, and effective focused on consistency and embedding learned experience. Every 'Agile' project has its 5-minute stand-up meetings..... The procedure should define what is the best way to conduct this meeting based on the culture of the organization.

⁵ For more on *knowledge management* see: <https://mosaicprojects.com.au/PMKI-PBK-010.php#Process3>

⁶ For more on *Standard Operating Procedures* see:
https://mosaicprojects.com.au/WhitePapers/WP1086_Standard_Operating_Procedures.pdf

⁷ For more on *methodologies* see: https://mosaicprojects.com.au/WhitePapers/WP1045_Methodologies.pdf



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