

The Yin and Yang of Project Management: Comparing PMBoK and PRINCE2 (again)

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Abstract

This paper reports on a detailed comparison of PMBoK Version 3 [1] and PRINCE2 Release 4 [2], which compares the two methods in a number of ways: the major features of each method; the impact of each method on various stakeholders; and the approaches of each method to a selection of issues of importance to project managers. The number of similarities seems to have increased since the previous versions were released. However, several critical differences remain. Firstly, in the externalities of projects, namely governance, project context and benefits, PRINCE2 is seen to provide guidance and effective controls to those who are responsible for governing projects, about which the PMBoK is silent. The PRINCE2 requirement for a single point of accountability, the supporting roles of Senior User and Senior Supplier, and the concepts of planning horizons, stages and tolerance around estimates, and Work Packages are clearly valuable. Secondly, with respect to the project manager's role, the PMBoK is seen as being more expansive in certain knowledge areas and more prescriptive in terms of activities to be undertaken. The PMBoK provides greater guidance and support for project managers in their day-to-day roles.

Keywords: PMBoK, PRINCE2, organisational project management, project management methods.

Introduction

The US-based Project Management Institute's Project Management Body of Knowledge (PMBoK) [1] is the most widely acknowledged assembly of the underlying principles of good project management in the world. The current third version of the PMBoK was released in 2004, and the number of people who have achieved the associated Project Management Professional (PMP) accreditation worldwide is approaching 250,000. The PMBoK presents a significant collection of project management knowledge in an accessible package. It is clearly an important element of a professional Project Manager's toolkit.

The UK-based Office of Government Commerce's PRINCE2 method [2] is the mandated or de facto standard project management method in the UK, many parts of Europe and increasingly in Australia. The current fourth edition was released in 2005. The number of people acquiring PRINCE2 qualifications continues to increase exponentially. The take-up of PRINCE2 in the USA, India and China has begun, with significant growth rates already in each country. PRINCE2 supports organisational needs for effective governance of projects.

The remaining differences between the PMBoK and PRINCE2 perhaps reflect their differing origins. The PMBoK was compiled at a time when project failure rates were much higher than today, and it may have been felt that a 'project manager' problem needed to be addressed. PRINCE2 arose somewhat later in a public sector environment probably having project managers with PMPs or at least knowledge of the PMBoK, but still experiencing significant project failures. Here it was felt that a 'governance' problem needed to be addressed.

There is a distinct polarisation of views in the project management profession as to which is the true way, PMBoK or PRINCE2, as though these methods are mutually exclusive. Some organisations require their senior project managers to be PMP qualified; others mandate PRINCE2 Practitioner status. Most organisational project management methods are currently based on either the PMBoK or on PRINCE2. With the recent release of new versions of each method, there is an opportunity to compare them again, and reflect on their usefulness in the broader context in which project management occurs.

Method of Comparison

This paper compares the two methods in three ways:

1. A direct comparison of the major features of each method, where possible:
 - Enterprise environmental factors
 - Organisational process assets
 - Knowledge areas
 - Process groups
 - Roles and responsibilities
 - Key project management products
2. A comparison of the impact of each method on various stakeholders:
 - those governing projects
 - those managing projects
 - those working in project teams
 - those monitoring projects in PMOs
3. A comparison of the approaches each method takes to:
 - the authority of the project manager
 - planning
 - breaking the project into smaller, more manageable phases
 - review and update of key project management documents over the life of a project
 - scaling to method to suit the needs of different projects

A worksheet containing the detailed side by side comparison of the two methods is available for download from www.goalgroup.com.au.

Comparison of Features

Enterprise environmental factors

Both methods identify organisational culture, and the portfolio context in which a particular project is to be commissioned, as critical factors to be examined and understood. PMBoK identifies that knowledge of the available human resources pool and individual's availabilities will be important. PRINCE2 considers these factors within its process model, when the project management team is being designed, and when resources need to be assigned to specific tasks during detailed planning.

Organisational process assets

Both methods identify a range of organisational process assets that can be used by the project manager, including corporate processes and lessons learned from previous projects. PMBoK generally regards procurement and contract administration as being aspects of project management, so corporate procedures regarding these processes are highlighted here. PRINCE2 regards these activities as specialist rather than project management activities, and so doesn't provide any guidance in these areas. In reality, most large organisations, particularly in the public sector, have standard procurement processes which would have priority over anything PMBoK may provide. So the PRINCE2 approach simply reflects its origin in the public sector.

Knowledge areas

The PMBoK provides nine 'knowledge areas'; PRINCE2 provides eight 'components'. These features provide the knowledge that is to be applied during all or most of each method's process models. There are major overlaps, and several differences. Both methods recognise risk and quality as major knowledge areas. PMBoK provides more support in the area of risk, but in Australia most organisations will conform to AS4360 in any case. In PMBoK, certain quality aspects such as acceptance criteria appear in the Project Scope Statement, whereas in PRINCE2 they appear in a Project Quality Plan.

Both methods recognise that scope, schedule, cost and quality are related, and can be traded off against each other if needed, but they approach this in different ways. These aspects are all recognised as knowledge areas by PMBoK, whereas PRINCE2 deals with scope-schedule-cost-quality issues as integral aspects of planning and change control.

The PMBoK knowledge area on integration management deals with integration of all aspects of project management. In PRINCE2, this aspect of integration is covered somewhat by the workflow through the Start-up, Initiation and Planning processes, and by the change control technique, although it could receive greater emphasis.

PMBoK has a knowledge area focussed on the human resource aspects of project management, and another knowledge area dealing with project communications. PRINCE2 has a single component called 'Organisation and Leadership' that addresses both these aspects, although PRINCE2's coverage of stakeholder engagement including communications is at a very high level.

PMBoK has a knowledge area on procurement, which has no equivalent in PRINCE2.

PRINCE2 recognises the Business Case as a component. In the PRINCE2 approach, the Business Case provides the primary control mechanism available to those governing the project, and is to be updated with actual costs to date and better forward estimates of future costs and

benefits at the end of each management stage, just as both methods say that the Project Management Plan or PID should be similarly updated.

PRINCE2 also recognises Configuration Management as a component. This may be historical; perhaps the public sector organisations that were its first clients didn't have corporate configuration management procedures, and the PRINCE2 authors thought that they needed one.

Finally, PRINCE2 has a component called Controls. These are predominantly controls that those governing the project can utilise. Almost every artefact in the PRINCE2 approach can be thought of as a control, such as team reports to the project manager and project reports from the project manager to the 'sponsor' or program management. The novel control features of PRINCE2 include the Project Board, with defined roles and responsibilities for each of its types of member, other controls to support management by exception by the Project Board such as the concept of tolerance around budgets for schedule, cost, risk, quality and so on, and an exception process to deal with breaches of tolerance. Other control features embedded in the PRINCE2 approach are the linked concepts of management stages, planning horizons and stepwise refinement through an hierarchy of plans.

Process groups

PMBoK identifies five process groups; PRINCE2 has eight main processes.

Both methods say that there may be natural phases associated with specific types of projects such as IT or building construction, and that the handoff between phases is at the discretion of the project manager. Both recognise that phases may overlap.

Both methods say that their processes may be invoked at lower levels of detail, say within specific phases.

Both methods say that the 'sponsor' may need to make a management decision as part of the transition between certain phases. In PRINCE2, these management decisions are formally recognised as constituting a boundary marking the end of one 'management stage' and the beginning of the next. Management stages may not overlap, although specialist phases may span stage boundaries.

Techniques

PRINCE2 supplies three techniques for use in organisations which don't have equivalent processes defined: product-based planning, change control, and quality review. In PMBoK, there is no equivalent to the first technique, and the other two techniques are embedded in the Knowledge Areas.

Roles and Responsibilities

PMBoK identifies three main roles: the project manager, the sponsor and the PMO. The project manager's role is specified in great detail in the knowledge areas and in the process model, the PMO's in an abbreviated manner and the sponsor's only in a cursory manner.

PRINCE2 identifies five main roles, and several optional roles. The main roles are the Project Executive supported by Senior User(s) and Senior Supplier(s), the project manager and project support. The responsibilities of these main roles are specified in detailed role descriptions, and

are clearly identified at relevant points in the process model. Optional roles include assurance roles supporting the Project Board, team managers, a configuration manager, and a risk manager.

Key project management products

PMBoK recognises three major project management products:

- the Charter, which includes a summary business case
- the Project Scope Statement
- the Project Management Plan.

In PRINCE2, the major equivalent products are:

- the Project Mandate (although this is not a mandatory document)
- the Project Brief
- the Project Initiation Document, or PID

but PRINCE2 recognises one more major standalone product:

- the Business Case.

The three corresponding pairs of documents appear remarkably similar in intent and content. PMBoK states that the Project Charter formally authorises the project manager to expend organisational resources, and may be developed external to the project by corporate or program management. In PRINCE2, the approved Project Brief authorises the project manager to commence planning, and the approved PID authorises the project manager to commence executing the first stage plan. The Project Mandate and Project Brief may contain outline Business Cases, which will be fleshed out as part of the PID.

It is the Business Case that is the major differentiator between the methods, and it arises because of PRINCE2's support of project governance. In PMBoK, the only reference to the Business Case is an element of the Project Charter. In PRINCE2, the Business Case, updated at the end of each management stage with actuals to date and better estimates to the end of the project, and better estimates of benefits expected, provides the Project Board with the information it requires to agree to start the project and later to permit the project to continue past each stage boundary. The updated Business Case supports a decision by a functioning Project Board to terminate as early as possible a troubled project that is unsalvageable, in order to conserve organisational resources for more productive uses.

Impact on stakeholders

Project Governance Support

The PMBoK defines a 'sponsor' as the person providing the project's funding. Other roles include specification of acceptance criteria and formal acceptance of deliverables. The sponsor may specify the frequency of project review meetings. Otherwise, PMBoK appears silent in the area of governance, which reflects its historical background. For the same reason, PRINCE2 is much more prescriptive about project governance.

As might be expected, since the 'C' in PRINCE2 stands for 'Controlled', the method provides a wide range of controls to those tasked with governing projects.

In PRINCE2, a Project Board consists of a Project Executive representing the interests of the business funding the project, one or more Senior Suppliers representing the interests of those who will be creating the project's specialist products, and one or more Senior Users representing the interests of those who must take the products delivered by the suppliers and deliver benefits to the organisation. The roles and responsibilities of each well specified. The Project Board's authority derives from corporate or program management, and terminates when the Project Board agrees that the project has been completed or is no longer viable. There is only one Project Board meeting formally mandated in PRINCE2, to approve the Project Initiation Document and the first Stage Plan. Every other Project Board decision can be reached using an informal process at the discretion of the Project Board.

PRINCE2 also identifies an optional Project Assurance function, to support the Project Board and provide advice independent of the project manager. In practice, a Project Board asked to make a particularly complex decision would engage one or more people through the Project Assurance function to deal with the detail and provide a brief to the Project Board. This would occur in most organisations; it's simply formalised in the PRINCE2 method.

Other controls available to the Project Board include:

- the ability to provide the project manager with ad hoc advice and direction
- setting of stage boundaries, which establish fire-breaks for reassessment of the project's ongoing viability and terminate runaway projects
- End Stage reviews, where progress to date and projects to the end of the project can be reviewed to ensure the ongoing viability of the project
- End Project reviews, after which the Project Board may decide to close the project, if they are convinced that the project's work has been satisfactorily completed. The project manager cannot summarily close a project
- at the end of the project, any open issues and risks, outstanding activities, product defects and any other follow-on actions are passed from the project manager to relevant operational managers
- setting of tolerances, giving the project manager some freedom to move around schedule or budget, while ensuring the Project Board remains in control through mandatory notification of the Project Board if a tolerance is breached
- the ability to request that the Project Assurance function investigates, reviews or audits the project
- the content and frequency of status reports, and whether a formal Project Board meeting is needed to review each status report.

Most PRINCE2 training organisations provide training in the method itself to project managers, to whom the governance aspects may appear as a burden. Most training organisations also provide briefings on the governance aspects of the method to senior executives. The full benefit of PRINCE2 to organisations cannot be realised if their Project Board members do not act like board members, or cannot operate effectively within the method.

Project Manager Support

The purpose of the PMBoK is to support project managers. The knowledge areas provide much more detail in this area than is generally provided by PRINCE2. Nevertheless, PRINCE2 provides several novel mechanisms that support the project manager, including:

- The approach to step-wise refinement of plans means that a project manager does not need to create detailed plans too far into the future, with the real prospect that they will have to be rewritten closer to the time they will be needed. A Project Plan represents a high-level overview, a Stage Plan provides whatever level of detail the project manager or project board is comfortable with before work on that Stage commences
- The product-based planning technique, which provides a principled front-end to WBS-based planning, particularly useful in novel domains and which supports a number of product-based controls, which make PRINCE2 very easily integrated into an earned-value management regime
- The 'golden thread' supporting quality represented by the Acceptance Criteria, the Project Quality Plan, Product Descriptions and Work Packages, the Quality Review Technique and the quality-related aspects of the issue management procedure, and final Customer Acceptance of deliverables
- The Work Package concept, which essentially becomes a formal contract or tasking mechanism between the project manager and those who will be developing the specialist products identified in the Work Package, and places the onus on project team leaders to obtain client acceptance of products delivered
- Project status reports, which provide a mechanism for project managers to formally escalate risks and issues to the Project Board
- Team checkpoint reports, product checklists and quality logs which enable the project manager to keep project teams under control

Project Team Support

The PMBoK is silent about the needs of project team members. Its focus is on how a project manager can manage a project team.

In PRINCE2, Work Packages must be negotiated between project managers and project team leaders or the person who will be doing the work, before the work starts. The method if applied therefore prevents situations arising where teams must deliver products within unachievable timeframes or budgets. If their Work Packages are large enough, the project team may need to develop a Team Plan to increase certainty around estimates and risks, and provide role clarity. Checkpoint reports provide mechanisms for project teams to formally escalate unresolved issues to the project manager.

For organisations without a formal quality review procedure, the PRINCE2 Quality Review Technique provides guidance to project team members on how to perform quality control activities, and how to document the results of such reviews.

Project Support

Both PMBoK and PRINCE2 recognise the value of an external support function. PMBoK refers to this as a PMO, which may also be called a 'project office'. PRINCE2 uses the term Project Office, or Project Support Office. Both methods provide a description of the role of this function in a project environment.

Other aspects

Project Manager's authority

In PMBoK, the Project Charter provides the project manager with authority to expend organisational resources. While PMBoK recognises that a project may be prematurely terminated, it is silent on the way in which this can formally occur.

In PRINCE2, the project manager's authority derives from the Project Executive. The project board delegates to the project manager the authority to execute a Stage Plan. This authority expires in two ways: normally and abnormally. The project manager's authority to execute a project expires normally at a management stage boundary; this authority must be formally renewed. The project manager's authority to continue executing the project expires abnormally whenever a project or stage breaches its allocated tolerances. In both of these cases, the project manager must convince the project board that the project remains on track, or can be brought back on track, before further work is performed. The project manager acts on behalf of the project board; the Project Board is ultimately accountable for the project's success or failure.

Planning

PRINCE2 uses an output-based or product-based approach to planning. Planning starts by specifying the major deliverables required, then identifying other products that will have to be developed on the way. Once this process has finished, the activities required to develop those products are identified and formalised as a Work Breakdown Structure. Thereafter, the formal approach is essentially identical to that prescribed by the PMBoK. Of course, the PMBoK provides much more detail.

PRINCE2 also recognises a hierarchy of plans, providing increasing levels of detail. The Project Plan will be at a high level. A Stage Plan perhaps supported by one or more Team Plans will be at whatever level of granularity is required for effective control of that stage.

Planning Horizons

In PMBoK, a WBS is created to cover the entire project. As the project progresses, the WBS will be reviewed and revised as necessary.

In PRINCE2, there is a concept of a planning horizon, usually set at around three months or so, beyond which the uncertainty of the future means that the value of detailed planning decreases below the cost of developing the plan.

Phasing

The PMBoK concept of 'phase' and the PRINCE2 concept of 'management stage' are not equivalent concepts. The former relates to project management control by the project manager. The latter relates to governance control by the Project Board.

Under PMBoK, a project is decomposed into phases to provide better management control of the project. A phase is not synonymous with any of the process groups. All process groups may be applied in each phase. Initiating processes are carried out at the start of subsequent phases to validate decisions made during the original Project Charter and Scope processes. A 'phase end review' can be held. Phases may overlap, as part of a schedule compression technique.

In PRINCE2, a management stage represents a body of work large enough to be meaningful yet small enough that the Project Board remains in control. The Project Board reviews the project at the end of each stage, and makes a conscious decision to continue the project. The work within the stage may be decomposed into phases, at the discretion of the project manager, to support better management control. Progression from one phase to the next is at the discretion of the project manager, and the phases may overlap. The stage concept can then be seen as a governance control superimposed on top of what are essentially identical to the phases referred to in PMBoK.

Volatility of key project management documents

The PMBoK states that several of the Process Groups (Planning, Executing, and Monitoring and Control) may update the Project Management Plan as the project progresses. The Project Charter, which includes the Business Case, may be reviewed and updated at the end of each phase.

PRINCE2 states that the PID and the Business Case must be updated minimally at the end of each management stage with actual costs to date, and better estimates for future costs and benefits, and will also be updated at the end of the project with actual costs and better estimates of benefits, and will also be updated with the value of benefits realised by the time of a post-project review. Why? Because corporate or program management will hold the Project Board members accountable for delivery of the commitments outlined in the Business Case, both costs incurred and benefits realised.

Scaling up and down

Both methods state that the method should be scaled to suit the needs of the particular project. In addition, PRINCE2 offers specific advice in many areas on scaling, such as Project Board structure, staging and planning.

Yin and Yang

PMBoK identifies a number of Organisational Process Assets that may be available to the project manager, one of which is an organisational project management method (PMM). One of the facets of an organisational PMM is a specification of the governance controls that the organisation expects to be utilised for projects. In many organisations, these governance controls

are custom-built in-house. However, as the 'C' in PRINCE2 stands for 'Controlled', it begs the question: what if the governance controls in the organisational PMM were derived from PRINCE2, and mandated such things as a Project Board with defined roles and responsibilities rather than a loosely-defined 'sponsor', management by exception supported by tolerances and a formal exception process rather than weekly meetings, update and review of the Business Case at the end of each phase, Product Based Planning as a front-end to the usual activity-based planning, the use of Work Packages to control the work of project team members, and the use of the PRINCE2 process model including mandatory Project Board approval before progression to the next management stage. Could a PMP-qualified Project Manager cope? Clearly, the answer is 'very well', given the significant overlaps we've already discussed.

If an enterprise portfolio or program management function, such as a PMO, commissioned a project and wished to hand it off to a professional project manager to execute, part of the selection process in many organisations is a matching between the nature and demands of the proposed project and the competency and experience of the various candidates. For example, the Defence Materiel Organisation (DMO) introduced its Acquisition Category framework in 2004 to relate the characteristics of projects to the competency of project managers thought able to manage such projects.

Other organisations use other means to size projects and identify suitably qualified or competent project managers. A small, low risk project might be handed to someone who's been on a PMBoK-based course or read the PRINCE2 manual. A larger, riskier project might need someone with more tools in their kit bag, as demonstrated by their having a PMP or a PRINCE2 Practitioner qualification. An even larger, very risky project might need someone with one or both of those qualifications, as well as demonstrated competency in project management. This thought process is the basis of DMO's Project Management Certification Framework introduced in 2006, which requires its project managers to gain formal accreditations (Certificates, Diplomas and Advanced Diplomas), which in Australia are based on the PMBoK and require proof of the candidate's ability to apply their knowledge. And for a highly complex, extremely risky project? The DMO obviously feels that even more is required, hence the development and release of its Competency Standard for Complex Project Managers [4], which identifies further knowledge areas beyond the PMBoK. The MSP program management method is also emerging as a critical tool in managing complex portfolios of related projects.

In Australia, many public sector organisations at Federal and State Government level, and the Australian branches of many European multi-nationals, utilise organisational project management methods based on PRINCE2. In their advertisements for project managers, if a requirement for formal accreditation is stated, it seems to be about equally balanced between PRINCE2 and PMBoK.

Many organisations see value in both methods, and reasons to extend both. In fact, the author last year qualified for an Advanced Diploma, using as evidence a range of projects run under the PRINCE2 method but which provided proof of his competence in applying the PMBoK knowledge areas. A competent project manager should be at least aware of the PMBoK knowledge areas and be able to apply them well in a PRINCE2 management framework.

So how would an organisation go about combining the two methods? This question can be approached by considering the needs of the four groups of stakeholders previously identified as

project size or complexity increases. This diagram should be viewed in conjunction with the discussion that follows.

	Simple / Small	Average / Medium	Complex / Large	Very Complex / Huge
Governors	PRINCE2 Controls scaled	PRINCE2 Controls	PRINCE2 Controls (incl Assurance)	PRINCE2 Controls (incl extensive Assurance)
Project Managers	PMBoK or PRINCE2 – both scaled	P2 Process Model + PMBoK KAs	P2 Process Model + PMBoK KAs	P2 Process Model + PMBoK KAs + Complex BoK
Team Members	PRINCE2 Controls scaled	PRINCE2 Controls	PRINCE2 Controls	PRINCE2 Controls
PMO	PRINCE2 or PMBoK	PRINCE2 or PMBoK	PRINCE2 or PMBoK plus EVM	PRINCE2 or PMBoK plus EVM

For all types of projects, in order to provide those responsible for governing projects with the controls they need, adoption of the PRINCE2 process model and the Project Board controls that it provides would seem to be a useful step. Organisations using PMBoK would otherwise have to create these controls, in order to be seen to exercising effective organisational governance of their investments in project work.

Experience shows that for projects at the smaller, less complex end of the spectrum, either method will support project managers. As the size and complexity of the project increases, the project manager will need more and more tools to get ahead of the issues and cope with whatever emerges; PRINCE2 components will eventually not be enough. At the extreme end, not even PMBoK is enough – hence the emergence last year of the College of Complex Project Management, and the additional guidance that has been generated, as well as the growing swell of interest in MSP.

For project team members, various PRINCE2 artefacts – Product Description, Work Packages, Team Plans, Checkpoint Reports and associated processes for managing allocated work, help the team to plan and carry out their work, as well as providing the project manager with a standardised process for controlling the team’s work.

For project support, both methods provide guidance, but at the complex end of the project spectrum, other controls and tools such as EVM will need to be introduced, and the project office is best displaced by a program management office.

Conclusion

The differences between the PMBoK and PRINCE2 methods appear to have narrowed since the last release of each method. The differences that remain reflect the origins of each method. The

PMBoK focuses on the needs of individual project managers. PRINCE2 provides a wide range of features to facilitate better organisational control of projects.

The PMBoK and PRINCE2 methods are better regarded as the yin and yang of project management, different but complementary, and not incompatible. Their remaining differences make each attractive to different stakeholder groups. The best approach? In the Taoist philosophy, yin and yang are complementary aspects of the same whole. So, why choose just one, when you actually need both, and sometimes more.

There is no reason why an organisational project management method based on PRINCE2 and hence mandating a range of formal controls under which all projects must operate, could not be used as the foundation for a project run by a PMP-certified project manager rigorously utilising the knowledge areas of the PMBoK. Such an approach would address both 'project manager' and 'governance' problem areas, if well implemented and enforced. Which then leads to the need to better align projects with organisational strategy, which is addressed by the emerging area of strategic program management supported by the MSP method.

References

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Presenter Bio

Geoff Rankins has been a practicing project manager for almost 30 years. He is convinced of the importance of well-formed and well-governed projects and programs to organisational success. As well as his ongoing contribution to real-world projects, he now offers organisations the benefit of his experience at all levels as a consultant, coach, trainer and presenter.

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