

Principles AND Processes

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Introduction

This article has been triggered by the decision by the Project Management Institute (PMI®) to move two of its foundational standards away from their historical approach based on knowledge areas and processes (see also Piney 2018) towards what they describe as a “principle-based approach”. My feeling is that the choice between principles and processes is not a binary one and that the two approaches can – and should – complement each other. These two approaches should therefore be combined in each of the three standards: projects, programs, and portfolios.

Basic Concepts

To avoid misunderstandings, it is always useful to clarify the meaning applied to key terms.

Principles

There are two main meanings of principles in common use:

- Rules of behaviour based on a particular view of reality or on a strongly-held belief. I call these “behavioural principles”;
- Assumptions raised to the level of fundamental truths (e.g., conservation of energy). I call these “conceptual principles”

It is instructive to see, as explained below, that PMI uses the first definition for the *Standard for Portfolio Management– Fourth Edition* (PMI 2017c), and the second one for *Standard for Program Management – Fourth Edition* (PMI 2017d).

To paraphrase the description in section 7.1 of the *Standard for Portfolio Management– Fourth Edition*, “the purpose of principles is to provide guidance for practitioners in carrying out all of the steps required for managing portfolios in their organization”.

Section 1.1 of the *Standard for Program Management – Fourth Edition* adopts the second meaning by explaining that principles of program management are assumptions that are held to be true and should be applied in the management of programs.

So, one standard uses principles for behaviour, and the other uses them as a system of belief. Examples from the corresponding standards are provided later in this paper. But, first, where do processes come in?

Processes

The definition of a process, from the *Guide to the Project Management Body of Knowledge – Sixth Edition (PMBOK® Guide)* (PMI 2017a) is: “A systematic series of activities directed

towards causing an end result such that one or more inputs will be acted upon to create one or more outputs.” These outputs can be used as inputs by other processes. In this way, a set of processes can be developed to form a system to provide predetermined services. Because of the interactions and feedback loops between processes, the system of processes can display complex characteristics.

Knowledge Areas

A knowledge area is a consistent set of practices within a domain. It calls on a set of specific skills and competencies

Why Abandon a Process Model?

I have heard three different explanations:

- a number of practitioners and candidates for certification disliked the requirement to learn all of the inputs, tools and techniques, and outputs (ITTOs) involved in each process.
- the wish to avoid being prescriptive, and
- the natural complexity of the program and portfolio environments which, apparently, could be better described by a principle-based description.

Each of these objections to processes is analyzed in turn.

ITTO Aversion

It is perfectly true that a full description of a process requires a detailed list of all of the finer points of the work to be done. However, from the practical point of view, to apply any of the PMI standards effectively, it is quite sufficient to know the domain of applicability of each process and each tool, be able to apply them, and to know where to find the corresponding detailed instructions to ensure that nothing has been overlooked. Certification should test this knowledge and understanding, whereas the PMI standards are designed to provide the complete detail.

The solution, therefore, to this ITTO aversion is to remove the need for rote learning of all of the input/output details from the certification exam, and to focus, instead, on checking the in-depth understanding of when, where and how to apply the relevant set of processes along with the relevant tools and techniques.

Abandoning the process model in order to avoid the need to learn lists of parameters is an unfortunate example of throwing the baby out with the bathwater.

Processes and Prescriptiveness

For some reason, the process-based model seems to be equivalenced in the latest editions of the standards for program and portfolio management with a prescriptive approach. This is stated for example in the *Standard for Portfolio Management*, section 8.3: “Even within an active process of continuous risk identification, risk management at the program, project, and operations areas are traditionally approached from a prescriptive, process-based perspective.”

Principles are quite as prescriptive as processes, if not more so. Take for example one of the principles provided in the *Standard for Portfolio Management*: “foster a culture that embraces

change and risk”. This is stated as an absolute rule, whereas the process-based approach describes the processes in detail, but nothing forces you to invoke them (remember the concept of “tailoring” from earlier editions?) By definition, principles are not open to tailoring or compromise.

In previous versions of the Standards, guidance was provided as to the “good practice” set of applicable processes. They were never “prescriptive”. On the contrary, these earlier versions provided options and explanations based on what worked in most environments most of the time.

Processes in a Complex World

I have heard that a number of people involved in the PMI Standards effort had argued that, although processes might be applicable for modelling project environments, the domains of programs and portfolios were too complex for this to be the case. The proposed solution was to provide a framework of principles within which the work should be carried out. This is an invalid argument because, as explained next, processes are ideally suited for modelling complex situations.

The first step is to understand that “complexity” in a technical context is not a synonym for “complication” or even for multiplicity of components.

Key Definitions

Complexity is the property of a system in which:

- behaviours are not fully explicable by independent analysis of component parts
- the results of changes – however minor – to an input parameter can have unpredictable – potentially major – effects on one or more of the outputs.

It should be noted that each of these definitions contains the word “system”, so this term needs to be defined as well. These definitions come from the Merriam-Webster dictionary:

- a set of things working together as parts of a mechanism or an interconnecting network; a complex whole
- a set of principles or procedures according to which something is done; an organized scheme or method.

These definitions can be applied in the field of portfolio management.

Complexity and Portfolio Management

Appendix X3.1 of the *Standard for Portfolio Management* states: “Portfolio management practitioners work in a complex environment with overlapping and often conflicting interests. [...] To comprehend such an environment and be in a position to anticipate behavior, it is necessary to study the portfolio system as a whole. This involves the application of a systems thinking approach in parallel to the prevailing linear thinking.” This raises the question of whether a principle-based approach is sufficient on its own to address complexity in the program and portfolio management domains.

Interconnectedness is a key contributor to complexity due to feedback effects. It is not clear how a set of principles could explain this type of behaviour. In my opinion, a principle-based description does not solve the problem of dealing with the inherent complexity – it merely avoids it by providing a non-complex system of principles instead of modelling reality by use of interconnected processes. The principle-based approach is an example of trying to explain a complex environment by independent examination of its component parts. By definition, this approach is bound to fail. On the other hand, processes do provide a valid basis for modelling complex environments.

What and Why of Processes

The Value of Processes

The “Good Regulator” theorem (Conant 1970) states that effective control of a system or organism needs a controlling mechanism that embodies a valid model of the system to be managed (“every good regulator of a system must be a model of that system”). The process approach provides this model of the project management environment. It was used in previous editions of the PMI Standards for program and for portfolio management and is still used for the *PMBOK® Guide*, for projects. As already stated, it has been dropped in the latest editions of the standards for program and portfolio management. However, these two domains exhibit quite as much complexity as the project one. In fact, Appendix X3 in the standard for Portfolio Management is devoted to analyzing complexity in and to explaining the importance of a systems view. The Good Regulator theorem states that effective control of such an environment requires a valid model, and this valid model is missing from these two standards because of replacement of processes by principles. A simple example of the need for a process model approach is explained next.

The “body of knowledge” metaphor for the human body can be extended to explain what is needed in order to provide understanding and management. Management of the human body, whether in medicine or in other health disciplines requires an in-depth understanding of anatomy and physiology. The same holds for our body (of knowledge); in our case, the knowledge areas provide the basic anatomy, while the processes, with their tools and process parameters represent the physiology.

Medical *principles*, on the other hand, would be more aligned to treating the patient as a person and defining the overarching rules of medicine. This aspect should certainly never be overlooked, but it should not be expected to replace the established practice of physical medicine. Comfort without cure is the province of medical charlatans, and principles without a means of applying them is the closer to wishful thinking than to technical expertise.

Processes without a Process Model

Although the *Standard for Portfolio Management – Fourth Edition* states that it no longer supports the process model, it relies extremely heavily on the concept of processes. It uses the word “process” over 200 times, and the importance of processes is mentioned at numerous points in the document, as, for example:

- in Table 1, it is stated that, for portfolio planning “Portfolio managers create and maintain necessary processes and communication relative to the aggregate portfolio.”

- in section 1.8.2, we find that “Once a portfolio component is authorized, the program or project manager assumes direct management control of the portfolio component and applies management processes to enable the work to be done.”
- also in section 1.8.2: “Through open and transparent governance, including processes for categorizing, prioritizing, selecting, and approving portfolio components, key stakeholders are more likely to accept the decisions and agree with the process, even when they may not fully endorse the decisions made”.

Unfortunately, none of these necessary processes is defined in detail within the Standard. Without processes, all that is left for program or portfolio managers is a set of principles to rely on. This situation is analyzed next.

Applying Principles

Portfolio Management Principles

The *Standard for Portfolio Management – Fourth Edition* lists eight behavioural principles (section 3.2):

1. Strive to achieve excellence in strategic execution;
2. Enhance transparency, responsibility, accountability, sustainability, and fairness;
3. Balance portfolio value against overall risks;
4. Ensure that investments in portfolio components are aligned with the organization’s strategy;
5. Obtain and maintain the sponsorship and engagement of senior management and [other] key stakeholders;
6. Exercise active and decisive leadership for the optimization of resource utilization;
7. Foster a culture that embraces change and risk; and
8. Navigate complexity to enable successful outcomes.

The relevant principles are then listed in each domain but not called-out explicitly to explain what they entail in practice.

Principles in the Life Cycle Domain

It is stated that all of the principles apply, but the actual relationship between the concepts that are presented and specific principles is not explained.

Principles in the Strategic Management Domain

The following principles are listed. Note that one is stated differently from the initial list, and one extra principle has been added:

- Achieve excellence in strategic execution.
- Ensure that investments in portfolio components are aligned with the organization’s strategy and governance practices.
- Balance portfolio value against overall risks.
- Foster a culture that embraces change and risk.
- Navigate complexity to enable successful outcomes.

and the extra one that is not mentioned again anywhere in the standard – it may, however, be a restatement of principle number 6:

- Continuously acquire talent and implement professional talent management.

Program Management Principles

The Standard for Program Management makes it clear that the principles on which the Standard relies are what I called “conceptual principles”: the introduction (section 1.1) states that “Principles of program management are tenets that are held to be true and important for the effective management of programs.”

In contrast with PMI’s Standard for Portfolio Management, the Standard for Program Management, does not itemize these principles anywhere in the document so it is unclear on what the “principle-based” claim is based for this standard. It would be better described as adopting a “narrative-style”.

Given the synergy between program and portfolio management concepts, and the generality of the list of portfolio management behavioural principles, a very similar list can easily be developed for program management. For interest, and as I believe that a set of principles can be a useful addition to the process-based model, I have attempted to adapt the behavioural principles from the portfolio standard as follows (note: the only changes are indicated in italics):

1. Strive to achieve excellence in strategic execution;
2. Enhance transparency, responsibility, accountability, sustainability, and fairness;
3. Balance *program benefits* against overall risks;
4. Ensure that investments in *program* components are aligned with the organization’s strategy;
5. Obtain and maintain the sponsorship and engagement of senior management and [other] key stakeholders;
6. Exercise active and decisive leadership for the optimization of resource utilization;
7. Foster a culture that embraces change and risk; and
8. Navigate complexity to enable successful outcomes.

However, this does not resolve that problem that the Standard for Program Management claims to be based on a set of (conceptual) principles which are not defined anywhere.

Mapping the Principles

As was pointed out above, even when they list the principles, the Standards do not explain how these are applied. This shortcoming could be overcome by the addition of an annex to each standard, similar to Annex A2 in the *Agile Practice Guide* (PMI 2017b). This annex would contain a table to provide the mapping between each principle and the relevant sections in the Standard. This table would not only assist in understanding but would also contribute to the quality of the Standard by ensuring that it describes the explicit use of every stated principle.

Because behaviours and concepts are related to knowledge, the most logical place to describe the application of principles would be within the knowledge areas. The issue of knowledge areas is examined next.

All the World's an Activity

Changes of Terminology

Both the *Standard for Program Management – Fourth Edition* and the *Standard for Portfolio Management – Fourth Edition* have abandoned the term “knowledge area” and replaced the concept by “supporting activity”.

The *Standard for Program Management* came to this change in two steps. The Third Edition adopted a “domain-oriented presentation” and, at the same time, replaced the term “Knowledge Area” with “Supporting Process”, and “process” with “activity”. The Fourth Edition has abandoned the term “supporting process” and this has also become known as an “activity” albeit a “supporting activity”. The *Standard for Portfolio Management* made the transition to an all-activity terminology in a single step between the Third and the Fourth Edition (although the term “supporting process” does appear once in the text, but this is probably an editorial oversight).

The reason that I have been given for replacing the term “Knowledge Area” is that there was felt to be a need to distance all of the language from the terminology used in the process-based approach, and was, apparently, done with the objective of “avoiding confusion”.

However, this change carries much more potential for confusion than the situation it was designed to avoid.

Confusing Activities

This term “activity” does not capture the original concepts of skills, competencies and results that are present in the terms “Knowledge Area” and “process”. In addition, “supporting activities” are then broken down into smaller elements. These smaller elements are referred to as “activities”. Although the “supporting activities” reflect, to a large extent the knowledge areas in the *PMBOK® Guide*, if this already confusing terminology were to be used in the *PMBOK® Guide*, the confusion would become even greater: the “Project Schedule Management” supporting *activity* would comprise *activities* called “Define *Activities*”, “Sequence *Activities*”, and “Estimate *Activity* Durations”. This “hyperactivity disorder” could be cured very simply by maintaining or reverting to the terminology used in the *PMBOK® Guide* and in previous versions of the other two Standards. The conclusion below provides a principle-based approach for developing each of the three foundational standards.

Recommendations and Conclusion

This section will present my views on behavioural principles that should apply to the development of each of PMI's foundational standards to improve ease of comprehension, coherence, and technical completeness. They are:

- the principle of good terminology, and
- the principle of good modelling.

Terminology

The Principle of Good Terminology

“Ensure consistency and clarity in all related standards documents. Continuity rather than uncoordinated changes”.

Project, program and portfolio management are the building blocks of effective organizational project management. As such, they need to fit together in an effective and complementary manner. This complementarity is emphasized in the introduction of each of PMI’s foundational standards. Although the scope and environment of each of the standards is different, wherever possible, they should use identical terminology for identical concepts. Where concepts differ, each term should have its own, unique area of application and be comprehensible independently of the context within the standard.

Applying the Principle of Good Terminology

The compatibility between all three standards and the avoidance of confusion around use of the same term in different contexts would be avoided by re-establishing the use of the terms “Knowledge Area” and “process” as subdivisions of good practice delivery techniques within the domain of applicability of each standard. It should be noted that the use of the term “process” does not necessarily compel the document to adopt the full ITTO formalism used in the *PMBOK® Guide* – or, at least, not to require it in the certification exams.

Another area of confusion at present between the way that the Standard for Program Management and the Standard for Portfolio Management apply the term “principle”. This confusion needs to be sorted out. Because of the objective of PMI’s standards, the “behavioural” application of the term “principle” as used in the Standard for Portfolio Management would seem to be the most appropriate.

The Process Model

The Principle of Good Modelling

“Provide a coherent model of the environment to be managed. Formalism rather than narrative”.

As required by the “good regulator” theorem, effective control of a system needs a controlling mechanism to embody a valid model of the system to be managed. PMI’s standards therefore need to provide the basis for a model compatible with the environment to be managed.

Applying the Principle of Good Modelling

Because of their interactions both internally and with the external environment, every domain of project management has to deal with complexity. Because of the multiple interactions and feedback effects in the program space, this level of complexity becomes greater for than project management. Strategic considerations increase this complexity still further in the domain of portfolio management.

The Knowledge-Area plus process-based descriptions included in the *PMBOK® Guide* provide a systems model that corresponds to the types of interactions and feedback effects that lead to complexity in that domain. This model therefore satisfies the requirements of a “good regulator” and can deliver the required level of control.

Knowledge areas are fully compatible with the performance domains defined in the program and portfolio standards. This is clear, since they fulfil the same role as the “supporting activities”. The change to re-establish the term Knowledge Area would therefore only entail some trivial editorial work. The set of processes for each or the knowledge areas should be added back into the corresponding sections. If this knowledge model were developed taking into account to recommendations in Piney 2018, it would also satisfy the principle of good terminology

These changes should ensure that the information in the standards provides practitioners with a model that allows them to navigate the complexity of the various environments and remain in control of their area of responsibility (as required by principles 1 and 8 from the *Standard for Program Management – Fourth Edition*).

As mentioned earlier, the corresponding certification exams should check for understanding and not for rote-learning of process parameters.

Conclusion

Processes are not the enemy and principles are not the whole of the story.

Each edition of the Standards for Program and for Portfolio management has contained valuable concepts and information. If the next edition of each of these standards were integrate the strong points of all of the earlier editions, this would ensure that all of the lessons and feedback from earlier versions were captured and available in a single location.

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About the Author



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After many years managing international IT projects within large corporations, **Crispin (“Kik”) Piney**, B.Sc., PgMP is now a freelance project management consultant based in the South of France. At present, his main areas of focus are risk management, integrated Portfolio, Program and Project management, scope management and organizational maturity, as well as time and cost control. He has developed advanced training courses on these topics, which he delivers in English and in French to international audiences from various industries. In the consultancy area, he has developed and delivered a practical project management maturity analysis and action-planning consultancy package.

Kik has carried out work for PMI on the first Edition of the Organizational Project Management Maturity Model (*OPM3™*) as well as participating actively in fourth edition of the *Guide to the Project Management Body of Knowledge* and was also vice-chairman of the Translation Verification Committee for the Third Edition. He was a significant contributor to the second edition of both PMI’s Standard for Program Management as well as the Standard for Portfolio Management. In 2008, he was the first person in France to receive PMI’s PgMP® credential; he was also the first recipient in France of the PfMP® credential. He is co-author of PMI’s *Practice Standard for Risk Management*. He collaborates with David Hillson (the “Risk Doctor”) by translating his monthly risk briefings into French. He has presented at a number of recent PMI conferences and published formal papers.

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