Policies, Principles, Practices, Procedures and Core Concepts
Clarify the meaning and application of related words in project management
(And a lot of commentary for good measure)
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Foreword

For over two decades, experts in the practice of project management from around the world have been trying to reach some agreement on the essentials of project management practices that are prerequisites to a successful outcome. That is, those things that should be in place from the beginning of a project if abject failure is to be avoided. While their presence does not necessarily guarantee success, their absence is unlikely to allow for delivery of the desired results.

In the era of hashtags and internet searches, many of these essential concepts have become key words that keep showing in articles, books and project documents. However, it appears that a major barrier to agreement is the fact that several of these key words are commonly used by different people to mean different things in different contexts. They really should know better.

Consequently, some readers may not agree with definitions provided here, especially if they differ from the common parlance that they are used to. Nevertheless, readers are requested to pay close attention to the definitions provided here, as well as the way the words are used, to give this paper some order and structure.

This paper was instigated at the suggestion of my good friend George Jucan, PMP,[1] who has also reviewed several drafts and making suggestions that added immeasurably to this paper's contents.

Introduction

Projects and project management, like general management itself, are constructs of man. These things do not appear spontaneously in the physical universe. You will not find them in the great outdoors of nature, in the forests or in the wilderness for example. You will, however, find the results of these constructs in the townships, in the built environment, and the burgeoning electronics industries for example and to which we have all become accustomed. That's because of man's desire to create and, in doing so, always to do more with less.

If all of that is true, then what we are looking for is the best possible recipe to meet these human aspirations. To find that, we need some basic principles to work on and, here, we are reminded of Henri Fayol's famous words of caution:

> *"Principles that are established should be viewed as flexible, capable of adaptation to every need. It is the manager's job to know how to make use of them, which is a difficult art requiring intelligence, experience, decisiveness and, most important, a sense of proportion."*

> Henri Fayol, General & Industrial Management[2]

Figure 1 displays a colorful graphic in an attempt to conjure up the environment of a significant project, typically under some form of contract, usually written but also generally understood between the parties.
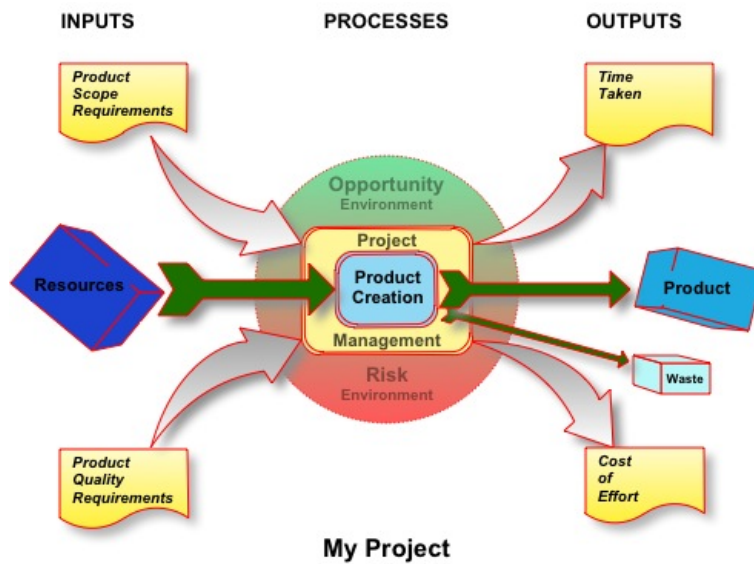
Figure 1: Relationship between project management and product creation[3]

However, the first point of departure is to distinguish between managing a project, aka single project management, and general management, aka business-as-usual. Here are a few key differences:

	General Management	Project Management
1	Process without an evident ending	Process complete when outcome is delivered
2	Generally steady state	Successive phases are quite different
3	More efficient production is the objective	Predetermined objectives that when met signal the end of the project.
4	Limited emphasis on planning	Continuous striving towards more and better planning.
5	Heavy reliance on equipment	Heavy reliance on people performance
6	Repetitive and non-unique activities	Generally non-repetitive and unique activities
7	Generally established team work	Intensive team building
8	Manager's position is typically long-term	Manager's role is temporary
9	Reducing staffing is generally considered good business practice	Creating an added contingency reserve is essential for dealing with unexpected risks
10	Self discipline is implied	Self management has to be encouraged

Terms and definitions relating to project management in this paper

Core Concepts: Immutable conditions that must exist in a project's environment to enable a higher chance of a successful outcome.[4]

Policies: Constraints on the range of an organization's activities and procedures.[5]

Practices: A mode of behaving or doing something established by custom.[6]

Principles: A comprehensive and fundamental law, doctrine, or assumption. A rule or code of conduct.[7]

Procedures: A particular way of accomplishing something. A series of steps followed in a regular and definite order. A traditional or established way of doing things.[8]

Project: A temporary endeavor, undertaken in phases to achieve a defined objective. An objective might be defined in terms of outputs, outcomes and/or benefits, depending on the project context. A project objective should be focused on contributing to outcomes that realize benefits for the organization that is undertaking the project. Outcomes require the provision of final outputs, which should meet defined needs or requirements. A project can be subject to multiple constraints.[9]

Project Management: A set of coordinated activities to direct and control the accomplishment of a project's agreed scope. Project management integrates the project management practices to plan, direct, monitor and control all aspects of a project and the motivation of those involved in order to achieve the project's objectives.[10]

The Essence of Core Concepts of project management

To identify a set of *project management postulates,* we must set criteria for their inclusion or exclusion. The following criteria are proposed.

A *Core Concept of project management* must:
1. Express a general and apparent fundamental truth, an idea that is applicable to most projects most of the time.
2. Make for a high probability of project/product success in terms of acceptability of the product or outcome. The corollary is that the absence of the condition will render project success as highly improbable.
3. Provide the basis for establishing logical processes and supporting practices that can be proven through research, analysis and practical testing.

In addition and ideally, a *Core Concept* should:
1. Be universal to all areas of project management application.
2. Be capable of straightforward expression in one or two sentences.
3. Be self-evident to experienced project management personnel, and
4. Carry a concise label reflecting its content.

If these criteria are not met, then the postulate should not be included in the list of Core Concepts.

Proposed Core Concepts of project management – Part 1

1. The Cultural Environment
Management must provide an informed and supportive cultural environment that is suited to project-type work to ensure that the project delivery team are able to work to the maximum of their capacity.

Explanation: The ability of a project delivery team to produce results both effectively and efficiently is highly dependent upon the cultural environment. This cultural environment encompasses both internal and external project relations and values. Internally, the management style of the team leader must be suited to the type of project and its phase in the project life span. Externally, the management of the organization in which the project takes place must be supportive, the project sufficiently resourced, and the environment must be free of obstacles such as corporate edicts that are not supportive of project management.

Hence, the resulting ambience is one that encourages and sustains teamwork and honesty and

demonstrates that:

a) Everyone is clear on the project's ultimate goals and is working towards those same goals, whatever those might be.
b) Everyone is clear and agrees on who the customer is.
c) Appropriate levels of skill or experience are available as needed, and
d) Everyone wants the project to be a success.

2. The Project System

A well-managed project is a complex system in which the management processes proceed through a sequence that relies heavily on doing the right thing in the right way and at the right time.

Explanation: A well-managed project is one that is optimized for effectiveness in its planning phases but emphasizes efficiency in its implementation phases. Implementation includes the transfer of the product to the care, custody and control of the customer. In reality, the complex system referred to consists of an intricate collection of interacting balancing and non-balancing mental feedback processes, each with their own cause, effect and side effect patterns. This complicated, often random, arrangement is enough to defeat many minds. In other words, "an inability to see the forest for the trees" is a problem for many individuals. But for the project manager, "an ability to see the forest as well as the trees" is an imperative for running a successful project.

Thus, project management is dominated by high levels of decision-making activities that absorb a considerable amount of effort since decisions on one part of the system can have significant repercussions on other parts of the system. This is why establishing and maintaining a robust and up-to-date Business Case is an essential prerequisite for "doing the right thing in the right way and at the right time".

3. The Project Strategy

A strategy focused on planning before doing, encompassing a pre-determined set of sequential and progressive phases, must be in place.

Explanation: The genesis of the project life cycle, in its most basic form, is to be found in the very term "project management" itself. A project has, by definition, a start and a finish with some activity in the middle. The essence of management is to "plan before doing". Hence the most fundamental project life cycle process consists of four sequential periods of Start, Plan, Do and Finish. Of course these four periods can be expanded into separate phases each with their own interim deliverables and Executive Control Points (or Gates) that can also be viewed as Emergency Exit Ramps. These can be designed to suit the control requirements of every type of project in every area of project management application and are particularly important from the perspective of project portfolio management. Indeed, this sequence is, in effect, equally applicable at every level and branch of the project's work breakdown structure. It is also just as relevant where a fast-track strategy or an iterative approach is adopted.

The importance of this life cycle process and its influence on the management of the project cannot be over emphasized. This relatively short-term life-to-death environment, and the consequences that flow, is probably the one thing that uniquely distinguishes projects from non-projects.

4. Project Success

The measures of project success, in terms of process, product, and stakeholders' satisfaction, must be defined at the beginning of the project as a basis for project management decision-making and post-

project evaluation.

Explanation: It is axiomatic that the goal of project management is to deliver a successful product, otherwise the incurring of this management overhead is a wasted effort. First and foremost, the project's proponents must define project success in terms of the acceptability of the project's deliverables, e.g. scope, quality, relevance to client needs, effectiveness, profitability, general benefits to the organization and so on.

Secondly, success should be defined in terms of the project's internal processes, e.g. time, cost, execution efficiency, etc. The timing of the measurement of success itself may also need specifying. Moreover, the proponents must be in general agreement on the definition of these success criteria, for without agreement, it will not be possible to evaluate the success of the project overall upon its conclusion.

It goes without saying that these measures of project success should be verified and reinforced throughout the project life cycle. As a corollary, if the success measures are no longer in alignment with the organization's business goals at any point, it should be perfectly acceptable to abort the project or at least halt it pending re-evaluation. (See also Discussion: Project Success, below.)

Proposed Core Concepts of project management – Part 2

The following core concepts may be somewhat more controversial, but nonetheless essential.

5. *Project Commitment*
An equitable commitment between the provider of resources and the project delivery team must exist before a viable and potentially successful project exists.

Explanation: The provider of resources (money, and/or goods and services, and general direction) is typically called the project's owner or sponsor. The project delivery team is responsible for developing appropriate tactics, plans and controls for applying the necessary skills and work to convert those resources into the required deliverables or product. An equitable commitment means that both parties are sufficiently knowledgeable of the undertaking, i.e. the overall objectives, the technology, the processes involved and their associated risks, and that both parties willingly undertake the challenge.

The attributes of both parties should encompass relevant skills, including those of the technology involved, experience, dedication, commitment, tenacity and authority to ensure the project's success. The owner of the project must understand that even with appropriate management controls in place, there must be a sharing of the risks involved. (See also Discussion: Project Commitment below.)

6. *Project Management*
Policies and procedures that are effective and efficient must be in place for the proper conduct and control of the project work to deliver the agreed commitment.

Explanation: This core concept is an extension of the strategy concept. The Strategy concept determines what is going to be done and when. The Project Management concept establishes how it is going to be done and by whom. The attributes of this management control encompass the project's assumptions, its justification and a reference baseline in each of the core variables as a basis for progress measurement, comparison and course adjustment. The attributes of good management encompass clear roles and

responsibilities, delegation of authority, and processes for maintaining quality, time and cost, etc. as well as managing changes in the product scope and/or scope of work.

7. The Single-Point Responsibility Concept

A single channel of communication must exist between the project sponsor and the project's manager for all decisions affecting the product scope, quality, delivery date or total cost.

Explanation: This concept is an extension of the project management concept and is necessary for effective and efficient administration of the project commitment. For example, the owner of the eventual product, if represented by more than one person, must nevertheless speak with one voice through a primary representative with access to the sponsor's resources. Similarly, the project's delivery team must always have a primary representative.

However, this only applies to the decisions affecting the product scope and quality and hence the project's overall cost and delivery. In all other respects, free and transparent communication is indispensable for the coordination of a complex set of project activities. Therefore, this concept must not in any way inhibit the proper exchange of information through the network of project communication channels that is required to integrate all aspects of a highly complex project.

8. The five-point inherent trade-off concept

The core variables of the project management process, namely: product scope, quality grade, time-to-produce and total cost-at-completion must all be mutually consistent and attainable. The inevitable existence of risk appears to be an outlier, or "wild card".

Explanation: This concept is an extension of both the Project Commitment concept and the Project Success concept. The core variables of product scope, quality grade, time-to-produce and total cost-at-completion collectively, often loosely called scope, quality, time and cost, respectively, are measures of internal project management efficiency. If these variables prove not to be mutually consistent and attainable, the commitment is neither equitable nor are any Key Success Indicators likely to be met. The interrelationships of the four basic but separate variables are somewhat similar to a four-sided frame with flexible joints. One side can be secured and another moved, but not without affecting the remaining two. That's assuming, of course, the avoidance of the risk of the joints of our four-sided frame from falling apart.

At this point, please take another look at Figure 1 to refresh your view of the relationship between managing the ***project*** and creating the ***product.*** It is presented in the first part of this paper.

Discussion

Core Concepts Generally

Issue #1: Do we really need "Core Concepts of Project Management"?
Most people seem to have managed very well without recognizing them, that is, until the trouble starts. Most projects take place in a corporate environment but the approach to corporate management and to project management are very different. Indeed, the reality is that many managements place obstacles in the way of project progress, perhaps unwittingly because of management's classic functional heritage.

Marie Scotto has provided a compelling list of differences in approach between general management

and project management.[11] Perhaps the most significant is that "The business community believes in understaffing which it can prove is generally good business most of the time." In contrast, projects are especially risky by their nature and need a margin of surplus if for no other reason than to take care of contingencies and risks. For a project to be under-resourced is a recipe for failure. Consequently, a set of credible Core Concepts is not only needed to provide a robust underpinning for project management learning, but also for making a convincing case to corporate management for providing the necessary support.

Issue #2: Management of the Project versus the Technology
Can we really separate project management from technology management? This is an issue for most people who suggest that it cannot be done, even though they may agree that there are differences. The reason is that in practice, decisions made in the technology management domain and decisions made in the business domain shape decisions made in the project management domain due to contextual dependencies. Similarly, project management decisions also shape decisions in the other two domains.

But consider the analogy of the human body. The human body cannot function without, say, the brain or the heart. Conversely, the brain or heart has no use without the rest of the body that they serve. All bodily components must be fully integrated for a properly functional unit. Nevertheless, that does not stop us from studying the brain and heart organs in great detail as distinct functions and, in particular, comparing them across a variety of types of people!

Issue #3: What should be included as a Core Concept and what excluded?
The key criterion is taken to be whether or not the principle is universally fundamental to project success as defined. For example, without some form of commitment there can be no project and hence no possibility of success. On the other hand, there are many major tools and techniques the application of which might be considered as essential to success.

For example, a formal work breakdown structure, schedule network, earned value analysis, change control process and so on might be included. However, projects in many application areas are run successfully without applying these tools. So, while they may be considered good practice, they are not necessarily essential. Each such tool undoubtedly relies on its own set of concepts that may be considered as secondary to the Core Concepts.

Success Concepts:

Issue #4: It has been suggested that the issue of success is so obvious as to be unworthy of a core concept.
However obvious and sensible the setting of project success criteria at the beginning of a project may seem, regretfully, it is not always a common practice. Without defining these success criteria, how can agreement be reached on a particular project's priorities, trade-offs, the significance of changes, and the overall effectiveness and efficiency of the project's management? For this reason, a lot of conclusions drawn from surveys and similar experiential material could be very questionable.

Contrary to conventional wisdom, there have been many projects that have been "On time and within budget" but the product has not been successful, and similarly many that have not been "On time and within budget" yet by other measures the product has been very successful. Motorola's Iridium is a classic example of the former while the movie Titanic is a good example of the latter.

We believe that project success is much more than just "Doing what you set out to do". It is also about whether what you are doing is in fact the right thing to do. We believe that the ultimate goal of a project, and therefore its measure of success, should be the extent to which the product is capable of producing the intended benefits within reasonable time and cost constraints and hence the general satisfaction amongst the parties including the "customer". As noted earlier, the assumption is that the customer is clearly identified.

As Gerald Neal points out, the reality of life on many projects is that everyone on or associated with it does not have the same aspirations and goals.[12] As a result "the project gets pulled in many different directions . . . [by] . . . status, pride, power, greed . . . ". In most cases, this may be a little exaggerated, but even at the most elementary level, the project owner will be interested in benefiting from the product while the workers on the project will be interested in benefiting from the process. This makes the definition of a project's success even more important – to provide a reference baseline for the correction of divergent progress.

So, success for a project and how it will be measured after completion does need to be defined at the beginning of the project. The most important reason is to provide an on-going basis for management decision-making during the course of the project even though the understanding of that success may mature during its course. Hence the need for continuously ensuring alignment with the project's Business Case, and the project's Business Case with corporate objectives.

Commitment Concept:

Issue #5: It has been suggested that there should be a "Business Principle".
That is, a principle that states that the project must be in alignment with the sponsoring organization's goals. This is a valid comment, but this connection is in fact embedded in the Project System concept requiring that a robust and up-to-date Business Case is established and maintained to drive appropriate decision making throughout the project life cycle. It is corporate management's responsibility to determine the relevance and soundness of the Business Case before giving project approval to proceed to the next phase.

Issue #6: Similar to Issue #5, it has been suggested that there should be a separate "Technical Principle". The issue here is that the project leader and team members must be knowledgeable in the technology of the product. This is certainly true, but this is covered by the Commitment concept in that an Equitable Commitment is not possible without a sufficient understanding of the project, its technology, and especially the major risks involved.

Issue #7: It must be recognized that every project "evolves" through its life cycle and the commitment and tradeoffs will similarly evolve.
On most projects the players will also change, as it moves through its life cycle, simply to meet the changing level of effort and different skills required in each phase. Nevertheless, an equitable commitment can and should exist for every phase of the project if the project is to remain viable.

Once again, in the real world, many projects are not set up this way. Resources are short changed or reprioritized and unattainable deadlines are set, often for the reasons described by Marie Scotto (see Issue #1 above.) Thus, the absence of consistent definitions of success and commitments simply means that the probability of success is greatly diminished – if not impossible.

The five-point inherent trade-off concept:

Issue #8: It is a sad reflection on general management that more time seems to be spent on budget numbers that, after all are just estimates with some manipulation for risk and contingencies. More time, that is, than that focused on the direct linkage between actual work on the project and the resulting cost and schedule recorded.

It need hardly be added that the phenomenon of "scope creep" and consequent time and cost overruns are direct consequences of a lack of understanding and attention to this linkage. There is a feeling that "just a little bit will not be noticed." It always is.

To clarify, there are four separate but interrelated variables involved: scope, quality, time and cost.[13] Thus, quality,[14] the most enduring variable of the four when it comes to project success, is given new prominence. It should be stressed here that quality means Quality Grade, i.e. the measure of level or class (utility to world-class) as distinct from Quality Conformance, i.e. "conformance to specified requirements".

There is, however, another variable that impacts the relationship between the project work and the time and cost of record, and that is the skills and experience and hence efficiency of those doing the work on the project. The more "expertise" the team has, the higher their situational awareness and the faster is their "learn-rate". In addition they can typically perform tasks faster because of their prior learning. These capabilities allow teams of experts to achieve more with less.

This ability expands what can be achieved and hence affects the relationship between work and consequent cost and schedule. This point is often lost on managers who see human resources as little more than being fully interchangeable and homogeneous. It seems difficult to get across the idea that, when appropriate, the adoption of more experienced, and consequently more expensive, staff can produce better results faster, and at lower overall cost.

Conclusion

It is worth remembering that human beings also have core concepts associated with every activity that they do. This is usually referred to as their "beliefs system", and represents their moral compass. In a similar way, project teams should be availed of a set of core concepts that becomes embedded in their project belief system. In this way, their project activities will be aimed at achieving project success in a much broader context. This is perhaps something that those advocating for more attention to the environment might think about.

"The proof of the pudding is in the eating" as they say. If the proposed "moral compass" for projects works well, it is likely to produce a successful project outcome. If not, the project is likely to get lost on its way and get added to the long list of failures.

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[1] George Jucan, MBA PMP CMP, speaker / consultant / author - enabling organizational performance through project, program and portfolio management. Contact gjucanATopenablers.net

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[2] Henri Fayol (29 July 1841 – 19 November 1925) was a French mining engineer, mining executive, author and director of mines who developed general theory of business administration. His theory included 14 Principles of management. https://en.wikipedia.org/wiki/Henri_Fayol

[3] Copyright: R. Max Wideman, copied from http://www.maxwideman.com/pm_101/in_general.htm

[4] Core Concept: A descriptor deliberately chosen in this article to be clearly distinguishable from those words that follow and that are the source of some confusion.

[5] ASAE, Wideman Glossary v5.5, ref. [D06470]

[6] Webster, Wideman Glossary, ref. [D05412]

[7] Webster, Wideman Glossary, ref. [D03166]

[8] Webster, Wideman Glossary, ref. [D03177]

[9] ISO 21502, ISO TC 258/WG 9, Article 4.1.1

[10] ISO 21502, ISO TC 258/WG 9, Article 4.1.2

[11] Scotto, Marie, Project Resource Planning, in Project Management Handbook, Jossey-Bass, 1998, Chapter 13.

[12] Contributed by Gerald Neal by Email dated 9/23/99.

[13] Note here, the distinction from the old and tired view of "Triple Constraint" (time, cost and performance only.)

[14] That is, quality as specified in the project's original requirements.