

Beyond the Iron Triangle: Year Zero
Andrea Caccamese, PMP, Prince2® Practitioner, ITIL® V3 Foundation
Damiano Bragantini, PMP, Agsm Distribuzione

Abstract

Success in project management has been traditionally associated with the ability of the project manager to deliver in scope, time, cost, and quality. The “iron triangle” is a very popular metaphor pointing out that the project manager is asked to reach a reasonable trade-off among various concurrent, heterogeneous, and visible constraints.

At the same time, the “soft skills” for the project manager have traditionally been identified as a set of cross-cutting skills that should complement the core job of establishing and maintaining reasonable tradeoffs among the elements of the iron triangle. This paper postulates that this is not enough.

The project manager is challenged by constraints other than the “measurable” scope, cost, time, and quality. Individuals need motivation, but the available motivational space is not infinite. The ground rules for behavior and communication should be established, but the performing organization could influence and limit the choices. Finally, individuals should be facilitated in exploiting their own prominent assertive or holistic attitudes, but the nature of the project and the context at-large may be in contrast.

There is more than the “iron triangle”; there is the “soft pyramid,” a metaphor for concurrent constraints related to the “internal satisfaction” of the individuals working on the project.

To be successful, the project manager should also reach a reasonable trade-off among various concurrent heterogeneous factors that constitute the “soft pyramid,” which is much more than “making use of soft skills in project management” and should be made explicit in project management best practices. Few extensions to *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)* are proposed in the Project Human Resource Management Knowledge Area, and practical suggestions are provided for the “year zero” of this new awareness.

Project Success

What makes a project successful? Customer satisfaction? Being on time? Minimizing changes? Being on budget? This question is well answered whenever a reference to “management by projects” is made. Management by projects is an organizational model, which is adopted by those organizations recognizing that their ability to produce value for stakeholders depends greatly on their capability to execute good projects. In this approach, the interest is shifted from the limited ability to deliver the product of the project, to an expanded view in which projects are considered the enablers for change and associated organizational benefits; then to a view in which project portfolios are considered a way in which the organization translates its strategic plan into tangible efforts.

In this view, projects, programs, and project portfolios represent the space for connected levels of organizational project management, in which project management practices are complemented with practices of benefits identification, planning, delivering, and tracking (program management) and with practices dealing with the goal to maximize capital investment in comparison with the value represented by a project portfolio.

Then (Morris & Pinto, 2004), as shown in Exhibit 1, project success spans a continuum in which project management success (Was the project done right?) is complemented by project success (Was the right project done?), to project portfolio management success (Were the right projects done, time after time?).

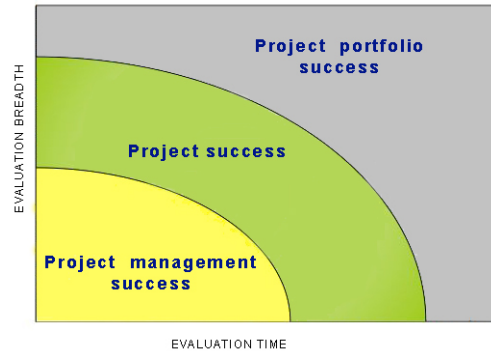


Exhibit 1 - The three levels of project success

Consideration should be given to the fact that for each of these levels, project success is measured with numerical indicators related to the “external projection” of the project (in line with the semantics of *to project*). Project management success may be measured in terms of cumulative values of the earned value methods, Cost Performance Index (CPI) and Schedule Performance Index (SPI). Project success may be measured in terms of benefits, changes of numeric values related to the organization business when the project’s product has been delivered and incorporated into the organization’s practices and procedures.

Project portfolio management success may be measured in terms of the distance of the active project portfolio from the efficient frontier, the curve whose points represent the portfolio structure delivering the maximum value for each value of the invested capital (Levine, 2005).

Popular project management standards are quite well aligned with this view of project success.

Project Management Institute’s (PMI) *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)* (PMI, 2008) depicts (Exhibit 2) the distribution of various levels of project success:

	PROJECTS	PROGRAMS	PORTFOLIOS
Success	Success is measured by product and project quality, timeliness, budget compliance, and degree of customer satisfaction.	Program managers manage the program staff and the project managers; they provide vision and overall leadership.	Success is measured in terms of aggregate performance of portfolio components.

Exhibit 2 - Levels of project success according to the *PMBOK® Guide—Fourth Edition*

The Organization for Government Commerce (OGC) in its *Managing Successful Projects with Prince2* (OGC, 2009) holds the project manager accountable for staying in the tolerances assigned in the project definition (project management success), and leaves to post-project activities the task to track and measure project benefits (project success). In *Managing Successful Programs* (OGC, 2008) a clear definition is also made for program success in terms of the ability to derive from project outputs specific outcomes that in turn produce changes perceived as measurable benefits.

The International Project Management Association (IPMA), in its *IPMA Competence Baseline* (IPMA, 2006) states that project success relates strictly to project management success as the ability to deliver the project’s product in scope, time, cost, and quality.

Then, there is a general consensus about what constitutes project management success and the “external” nature of the indicators chosen to measure and evaluate project management success.

In the following sections, integration into this view will be proposed.

Defining “successful project management,” an endeavor hitting targets related to the “external projection” of the project, might be restrictive. If consideration is given to the fact that during his or her limited and temporary tenure the project manager deals mainly with the project team, made up of individuals, each of them bringing inclinations, attitudes, and expectations, then other goals may be defined for a “successful project management,” related to “internal projection” of the project.

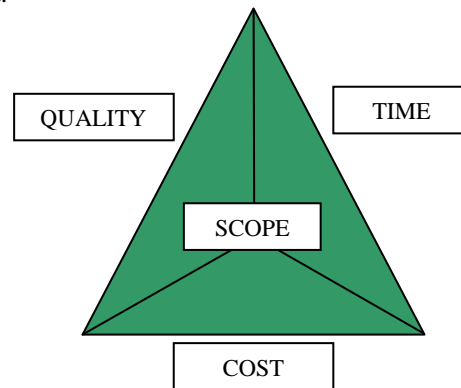


Exhibit 3 – The traditional iron triangle

Extended Metaphor of Project Management Success

Project management focuses on the ability to deliver the project’s product in scope, time, cost, and quality. There are many other requirements for good project management, some concerning with the ability to control the level of uncertainty in a project, some related to establishing and maintaining appropriate communication channels, and much more. What is evident about scope, time, cost, and quality is that they establish a system of constraints for the project manager, who is called to manage a set of interrelated elements of very different natures, in a context that usually limits the degree of freedom that can be exercised. The project manager is asked to define, establish, and maintain a trade-off among interrelated constraints of a heterogeneous nature (Kerzner, 2009). The “iron triangle,”

as shown in Exhibit 3, is a popular metaphor that identifies the integrative role of the project manager quite well (Atkinson, 1999; Bernroider & Ivanov, 2011; Toor & Ongulana, 2010).

Project management success is therefore related to the ability of the project manager to identify, negotiate, mediate, and integrate diverse constraints of the project being worked on; however, other factors indeed interfere with the action of the project manager. Modern projects are made by individuals, whose actions are instrumental for project success. Maintenance factors like team spirit, personal involvement, openness to teamwork, belong on one hand to the spheres of individuals; on the other hand, they constitute a collective spirit that is a primary resource for the project, as well as task factors like man-hours, tools, technologies, processes, and materials.

Traditionally, this has been incorporated into project management through the concept of “soft skills,” which the project manager is expected to employ in a cross-cutting approach, thereby completing the use of “hard skills,” such as estimation techniques, cost control, scheduling techniques, and much more. However, considering “soft skills” merely as important attributes that the project manager is expected to employ in the main task of finding a trade-off among the components of the iron triangle, just leads to a set of good advice and reasonable suggestions (e.g., “be yourself,” “pay attention to team members as individuals,” “be emphatic,” and “communicate well”). This seems too simplistic; the underlying assumption that it is just a matter of having “soft skills” or preparing to have the right level of these “soft skills,” might prove to be false.

For example, “soft skills” enable the project manager to facilitate communication among project members; however, too often, the fact that the project is originated by a performing organization that might influence the project with its culture, procedures, and policies, is underestimated. If the culture of the performing organization related to communication is strongly oriented to structured and hierarchical communication channels, this to some extent might be a constraint for a project manager willing to establish open and ease communication among team members.

“Soft skills” enable the project manager to motivate individuals, according to their needs, but if the project is a “familiar” project or it is executed with a “captive” customer, this might be a constraint for a project manager willing to represent to “high performers” that the project is a good answer to their expectations for growth. Many other similar examples raise the observation that project management deals with “soft factors” that exist in limited spaces, just like “hard factors” (e.g., scope, time, cost, and quality) exist in limited spaces. Because those spaces are limited, the “soft factors” establish an additional system of constraints for the project manager.

Exhibit 4 depicts the “spaces for soft factors” as the interconnected sides of a triangular pyramid:

- **ABV: motivational space.** This is the space available for the project to activate the context for individual motivation (e.g., working conditions, job security, advancement, growth, power, affiliation, esteem, decision-making processes, rewarding systems) (Verma, 1995);
- **ACV: social space.** This is the space available for the project to activate the protocols for acceptable behavior. These consist of both task-related rules as well as social rules, like punctuality in task completion, agreed on time to read and respond to messages, respect of consensus decisions, honesty, truth, preparation for and attendance at meetings, and punctuality at meetings (Whatley, 2009);
- **BCV: analytic/holistic space.** This is the space available for the project to foster and facilitate the development of individual thinking models. The analytical model is centered on analysis, linearity, sequentiality, reductionism, and places high value on expansion, competition, quantity, and assertiveness. The holistic model is centered on synthesis, non linearity, parallelism, holism, and places high value on preservation, cooperation, quality, and associationism (Capra, 1982).

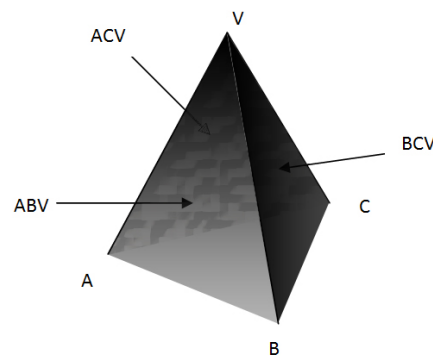


Exhibit 4 - The “soft factors” of the project

The spaces as defined above differ from the spaces for “hard” factors (which are traditionally represented by segments, then are mono-dimensional), in that their attributes are not only quantitative; they also have “qualitative” attributes (and, in fact, are represented by surfaces, then are bi-dimensional). For example, all dollars summing up the project budget are the same, but all the motivation summing up the project is not the same. Although to run a project you need a definite amount of dollars (the cost space), to run a project you also need a definite amount of motivation of some kind (the motivational space); then, you need a certain amount of motivation distributed among different qualitative quotas.

Just like hard spaces, the soft spaces in project management are constrained by the context, the organization, and the project characteristics. But soft spaces also experience interrelated constraints. Just like “hard” factors are interrelated (e.g., the project manager cannot define whatever scope for the project because this would involve a space for project cost that might not be available) the same happens for “soft” factors.

The project might have quite a big space for motivational factors, which is a useful example to motivate individuals looking for recognition, respect, and esteem. In this view, the project manager could offer to specific individuals challenging tasks, requiring a high level of individual autonomy, without the strict needs of reporting, sharing, and coordination. But, on the other hand, the social space available for the project could not be adequate to support what is involved by a big motivational space of that kind. For example, a high technology project run in a highly structured customer/supplier environment, might give the possibility to let “wild horses” run, but on the other hand

in this context, there might be great attention paid to reporting, disciplined sharing of work results, and maybe a large number of meetings.

The project might have quite a big analytical/holistic space, which is useful for promoting analytical attitudes of individuals devoted to details. In this context, the project manager could support the “analysts” working in the project, authorizing individual activities requiring deep application of the Cartesian scientific method. But, on the other side, the motivational space available for the project could not be adequate to support what is involved by an analytical/holistic space of that kind. For example, a research project run in a cultural or professional association environment might provide the possibility to support analytical attitudes, but in this context, a sense of belonging and being part of a club might also be fundamental and may be valued more than individual excellence.

Finally, there are also interdependencies between the “soft factors” and the “hard factors” in project management. It is not possible to make use of big portions of an available motivational space, even if this is balanced and in line with the social space and analytical/holistic space, if it involves excessive portions of “hard space.” For example, a big (even available and balanced) motivational space could not be selected if it implies that portions of cost and time spaces are not available.

Then, “hard factors” and “soft factors” constitute a system of constraints that may be represented in a three-dimensional view as shown in Exhibit 5, where a “soft pyramid” rests on the traditional “iron triangle:”

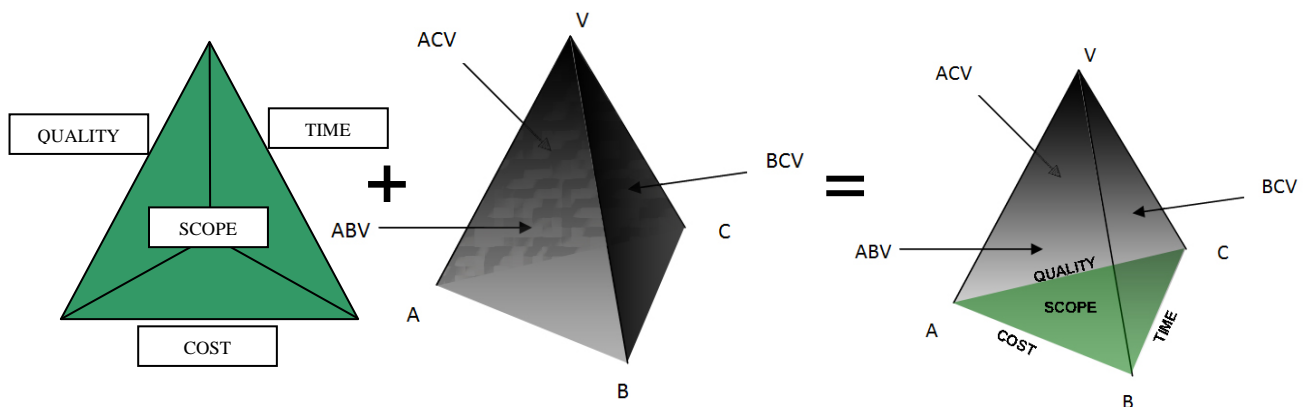


Exhibit 5 - The soft pyramid and the iron triangle

There is a need for the project manager to find appropriate tradeoffs and balance among and with the “soft factors,” thus looking at the project through an “internal projection” and working on factors that relate to the personal and interpersonal spheres, complementing the traditional view, oriented to an “external projection” and to “hard” factors. Based on this, it seems quite obvious to reconsider the traditional paradigm of project success, complementing the activity of integrating and balancing “hard” factors with an activity of integrating and balancing “soft” factors, and “hard” factors with “soft” factors as well. Good project management in this view is more than delivering scope, time, and quality and cost; rather, it also implies the ability to manage a set of interrelated constraints, with the goal of creating a project climate in which the various personalities working in the project may develop their own peculiarities in a state of internal satisfaction. Then, project management success is not only building and maintaining the iron triangle; it also needs to approach, in a structured way, the issue of growing and respecting team member personalities in a constrained environment.

Analytical/Holistic Space and the Project Management Team

The motivational space and the social space are not new concepts in project management. When dealing with “soft skills,” it is quite typical to mention the ability to motivate and the ability to provide norms and rules appropriate for

fostering project team development. The concept of an analytical/holistic space in project management is less popular, however.

Recent research (Dondana, 2010) has been performed on an extended population of project managers of both genders, across diverse industries and territories. A comprehensive questionnaire was distributed, with the goal of gathering the kind of approach (holistic/integrative/feminine or analytical/assertive/masculine) taken by the project manager when executing tasks according to the *PMBOK® Guide*'s Knowledge Areas (PMI, 2008) and using competencies according to *Project Management Competency Development Framework* (PMI, 2007). One of the main results of the research is shown in Exhibit 6

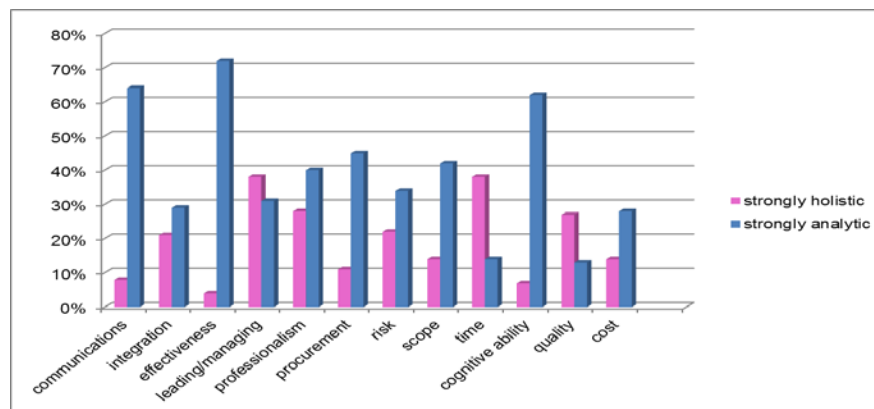


Exhibit 6 – Distribution of attitudes in project management

This graphic shows the percentage of project managers adopting strongly analytical or strongly holistic approaches, and indeed it provides quite a number of surprises. For example, it is surprising that Cost Management, which should involve the use of a strong analytical approach, is conducted by a non-marginal part of the respondents with a strong systemic approach. Other insights confirm that, in general project managers tend to follow their own attitudes and are neither influenced by their gender nor by the kind of management task they are performing. Then, project management is not per se either feminine or masculine; rather, project managers bring their own analytical/holistic approaches.

The same conclusions may be easily extended to members of the project management team. Project management team members share with the project manager the responsibility of managing the project. Juniors or associates, who help the project manager in running administrative project tasks, are parts of the project management team. Junior or associates who help the project manager in running project management IT systems are parts of the project management team. Subject matter experts who receive from the project manager a specific delegation in running a specific thread of project management activities (example.g., quality management, procurement management, risk management), are parts of the project management team. All these individuals “do” project management and, just like project managers, they bring with them individual expectations in relation to the ability to satisfy, exercise, or even improve, their own analytical/holistic approach.

The research suggests that for project management team members there should be an available analytical/holistic space in which the project manager would find the right quantity and quality of factors needed to respond to his or her expectations. For project management team members there is evidence that the project manager needs to manage an additional “soft” factor that complements other more popular “soft” factors.

Position of Project Management Standards

Now, the question is: Are the various project management standards well equipped to face the need for managing this additional set of “soft” factors? Is there any methodological prescription in popular standards, pointing out a process-based structured, defined, approach for the management of the “soft pyramid”?

An extensive review has been done using PMI's *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*, OGC's *Managing Successful Projects with Prince2*, IPMA's *IPMA Competence Baseline* and PMI's *Project Management Competency Development Framework*.

A Guide to the Project Management Body of Knowledge (PMBOK® Guide)

A Guide to the Project Management Body of Knowledge (PMBOK® Guide) deals indeed with “soft” factors (PMI, 2008). For example, leadership is defined as an essential component of the project manager's characteristics, because the team needs guidance in a constrained environment. A specific appendix deals with interpersonal skills, complementary to technical and methodological skills: motivation, conflict management, negotiation are described, among others. There is a Knowledge Area devoted to human resources, Project Human Resource Management, that is articulated in a number of processes that are mainly focused on the flow of administration of human resources of the project; however, the Develop Project Team and Manage Project Team processes, belonging to that Knowledge Area, suggest the project manager make use of “soft skills” to build and maintain team spirit, to motivate individuals, and to evaluate their performance on the project.

In synthesis, *PMBOK® Guide* contains references to the “soft” factors; however, there is no reference to a constrained environment in which “soft” factors are to be defined and developed.

Managing Successful Projects with Prince2

Managing Successful Projects with Prince2 (PRINCE2) preliminary states that some areas of project management are not in its scope (OGC, 2009). Among them is human resources management, (e.g., motivation, delegation, and leadership) for which it states that “*for this reason, PRINCE2 cannot address this aspect of project management directly*” (OGC, 2009, p. 7). There are no references to “soft” factors in *PRINCE2* processes, not even in Managing Product Delivery process, where the emphasis is placed on the clear assignments of tasks, agreed on criteria for work completion, and deliverables acceptance. Among *PRINCE2* themes, the Organization theme is mainly focused on role definition, delegation, and management by exception and there is no reference to “soft” factors. In particular, the primary responsibility of the project manager is defined “*to ensure that the project produces the required products, in accordance with the time, cost, quality, risk, and benefit performance goals*” (OGC, 2009, p. 33), and the primary responsibility of the team manager is defined “*to delivering the project's products to an appropriate quality, within a specified time scale and cost*” (OGC, 2009, p. 34).

In synthesis, *PRINCE2* preliminary excludes from its scope “soft” factors, and coherently those factors are not mentioned explicitly in any of its processes.

The IPMA Competence Baseline

The *IPMA Competence Baseline (ICB)* is definitely oriented to an assessment of project management competencies that are defined as the sets of knowledge, attitudes, skills, and experience needed to make good project management (IPMA, 2006). In this approach, *ICB* states that “*the optimum situation for a project organisation is that all the people, the project teams and resource providers involved in project management are competent to carry out their work on to take individual responsibility*” (IPMA, 2006, pp 2–3). *ICB* collects 46 project management competencies into three domains, which constitute the so-called “competence eye.” In the *technical domain*, competence 1.06 Project Organization recalls the needs for leadership and direction, and the competence 1.07 Teamwork recalls the need to build and maintain the team using motivation and socialization, exploiting the added value of cultural, educational, and attitudinal differences. In the *behavioural domain*, the competence 2.01 Leadership recalls the need to motivate team members, and the competence 2.02 Engagement and Motivation recalls the need for motivation, as a result of teamwork and integration among diverse disciplines. No reference to “soft” factors is found in the *contextual domain*.

In synthesis, *ICB* points out some of the “soft” factors; however, there is no mention of the existence of a constrained environment for their management.

The Project Management Competency Development Framework

The *Project Management Competency Development Framework (PMCDF)* is definitely oriented to an assessment of project management competencies to develop improvement plans and career paths (PMI, 2007). It is focused on the individual, not on the actions that the project manager should execute; however, it gives some ideas about the basic elements needed to execute good project management, which are structured into competence domains (*technical, personal, and performance*), competence units, and competence elements.

In relation to the domain of personal competences, the competence unit 7.0 Leading points to some “soft” factors. It recalls the need for climate creation “*Creates a team environment that promotes high performance*” (PMI, 2007, p. 28), for teamwork “*Encourage team work consistently*” (PMI, 2007, p. 28), and for respecting diversity “*Examples of creative actions taken to encourage teamwork, respect for different opinions and personalities*” (PMI, 2007, p. 28).

Similarly, the competence unit 8.0 Managing recalls the need for team building (“*Builds and maintains the project team*” (PMI, 2007, p. 30), facilitating socialization, “*Maintains a positive attitude and effective relationships among team members*” (PMI, 2007, p. 30), with an approach focused on exploiting others’ inputs and experience, “*Genuinely valuing input and expertise of others on the team*”) (PMI, 2007, p. 30).

Competence unit 11.0, Professionalism, clearly points out the need to recognize and encourage diversities in experience and attitudes, thereby addressing diversity and then the “soft” factor of attitudes. The project manager is asked to be aware of diversities, “*Documented feedback from team that the PM displayed an awareness of, respect for, and willingness to accommodate cultural differences*” (PMI, 2007, p. 36), “*Documented feedback from team that the PM respected personal, ethnic and cultural differences*” (PMI, 2007, p. 37), and to foster an environment in which all team members can develop their own attitudes “*Examples where the PM created the conditions that motivated and enabled others to contribute their best*” (PMI, 2007, p. 37), or even diversify and improve, “*Examples of personnel assignment that allows them to grow by doing more than status quo*” (PMI, 2007, p. 38).

In synthesis, the *PMCDF* taxonomy points out all the “soft” factors; however, there is no mention of the existence of a constrained environment for their management.

A Step Ahead

The main purpose of this paper was to identify and describe areas for improvement in project management practices. Additional work and research are needed; however, in this respect, some improvements of current methods and a few practical tips (“year zero”) for the project manager may be anticipated.

The PMBOK® Guide

Improvement may be suggested for the *PMBOK® Guide* in line with the need to have a more structured approach to a constrained management of the “soft pyramid.” Reference is made in particular to the Knowledge Area, Project Human Resources Management. This Knowledge Area is mainly oriented to the administrative management of project human resources. For example, the *Human Resource Plan*, output of the planning process, *Develop Human Resource Plan*, appears strongly focused on defining procedures, organization, and a planned workload of human resources that are instrumental in the execution of project tasks. The *Human Resource Plan* is actually a “subsidiary” baseline of major project baselines related to the “hard” factors of the project, as represented by the iron triangle.

Similarly, the execution processes, *Acquire Project Team* and *Manage Project Team*, appear strongly focused on the operational aspects of human resources management, from recruiting to on boarding, to intermediate and final performance reviews.

The execution process, *Develop Project Team*, indeed focuses on team development, and calls for an extensive use of “soft skills,” which the *PMBOK® Guide* describes with some detail in Appendix G, with a declared purpose of building and maintaining an effective project team.

Some improvements in the direction of the management of the “soft pyramid” might be the following:

- Defining a “soft pyramid” baseline as part of the planning process, *Develop Human Resource Plan*. The current *Human Resource Plan* should be integrated with a cumulative definition of the quantity and quality of the motivation, social and analytical/holistic attitudes factors. For example, the project manager should define and agree on how much and what type of motivation the project plans to provide during its life cycle, similarly for the other “soft” factors. This definition could be supported with tools and techniques taken from social and psychological disciplines and/or it could be based on simple indicators (e.g., number and type of meetings for the social space, number and type of tasks for the analytical/holistic space, and number and type of motivational activities for the motivational space);
- Making a reference to the “soft pyramid” baseline in the execution processes *Acquire Project Team*, *Develop Project Team* and *Manage Project Team*. These processes, in addition to their functions, should involve awareness that during their course of action, the “soft” spaces should be activated in coherence with the established baseline: for example, team members’ acquisition should take care of checking that there is available space for their motivation and how much of it is allocated;
- Adding an additional process, belonging to the Monitoring and Controlling Process Group, *Control Human Resource*, as shown in Exhibit 7:

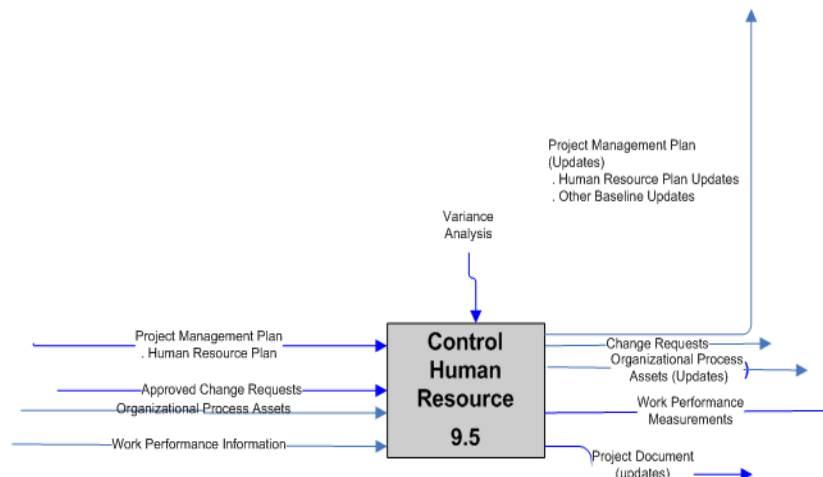


Exhibit 7 – Control Human Resource process

The purpose of this process should be similar to other “control” processes in the *PMBOK® Guide*: to monitor the state of the “soft” spaces and to manage changes to the associated baseline. The process uses Work Performance Information to collect the current status of the “soft” spaces. For example, the quantity and type of meetings could be used to determine to what extent the project has made use of the available social space. Similarly, quantity and type of project documentation could be used to determine to what extent the project has penetrated the available analytical/holistic space. Quantity and type of motivational events could be used to determine to what the extent the project has made use of the available motivational space. This information is summed up and compared with the baseline to determine Work Performance Measurements and, where applicable, to issue Change Request if the current status shows that there are deviations or trends of deviation from the baseline. If, for any reason, the “soft” spaces baseline needs to be changed, an Approved Change Request is presented to the process, which might involve a more or less complete redefinition of the Project Management Plan. The process is supported by Variance Analysis tools and techniques that might be found in the scope of social and psychological disciplines and/or might be based on other simple heuristic and pragmatic approaches.

The outputs of this process should also be taken into account in processes outside this Knowledge Area, in particular the process *Report Performance* of the Project Communications Management Knowledge Area and the processes *Monitor and Control Project Work* and *Close Project or Phase* of the Process Integration Management Knowledge Area.

This proposal might seem to charge the project manager with additional responsibilities and tasks; therefore, it might be argued that it is plethoric and unrealistic. In this respect, it should be taken into account that one of the principles of the *PMBOK® Guide* (as well as other methods) is *tailoring* (i.e., adapting best practices to actual circumstances and to the project environment). This is true also in this case: the management of the “soft pyramid” might be executed with varying degrees of detail or may even be excluded from the context of project management, but it should be considered as a viable option at the time the plan for a project is established.

Year Zero

A few practical tips might be useful to providing the project manager with a starting point, the “year zero” of the awareness and management of the “soft pyramid.” This is even more important when considering that in every project there is a “soft pyramid” that may have been built pragmatically and unconsciously through decisions, choices, and behaviors, and often with a “lean” approach. In particular, attention should be paid to all circumstances in which operating on a “hard” factor, the project manager might exert influence on “soft” factors, as shown in Exhibit 8:

	Motivational Space	Social Space	Analytical/Holistic Space
Scope	X		
Quality			X
Time		X	
Cost	X	X	X

Exhibit 8 – How “hard” factors might influence “soft” factors

If the project manager makes decisions about, or make changes to “scope,” even if the integrity of the “iron triangle” is preserved, this could involve a perturbation in the motivational space. For example, de-scoping the project might lead to remove tasks characterized by high technical content, which could reduce the motivational space or a part of it reserved for “high achievers.” On the other hand, extending the project scope could lead to include tasks with high technical content, which may not be compatible with the current agreed on amount of the motivational space. Making decisions or making changes to “quality,” even if the integrity of the “iron triangle” is preserved, could involve a perturbation in the analytical/holistic space. For example, reducing quality standards could involve a reduction of the space for holistic attitudes; and, vice versa, improving quality standards could lead to a reduction of the space for analytical attitudes and may not be compatible with the current amount of agreed on analytical/holistic space.

Making decisions or making changes to “time,” even if the integrity of the “iron triangle” is preserved, could involve a perturbation in the social space. For example, extending the project schedule could provide room for relaxed rules, and vice versa, compressing the schedule could call for tighter rules, which may not be compatible with the agreed on amount of social space.

Making decisions or making changes to “cost,” even if the integrity of the “iron triangle” is preserved, could not involve any perturbation in the “soft” factors; for example, if the root cause of the decision or change barely stays in the price of raw materials. But, if the change to “cost” is the result of an effort to preserve the integrity of the “iron triangle” in front of scope, quality, or time decisions or changes to them, then it could involve perturbations to all “soft” factors.

Also, in the life cycle of a project many micro decisions are made, some of them should be considered with respect to the influence they might have on “soft” factors:

- Changes in the Organizational Breakdown Structure should be taken cautiously, because the size of the work team and reporting lines influence the social space;
- The outsourcing of work packages, even if needed, for example to reduce risk, might influence the motivational space; and
- Changes in the communications management plan, even if taken to serve stakeholders needs, could influence the social space.

Conclusions

Over the last three decades, the issue of what constitutes project success has been debated, and many efforts have been made to provide the project manager with the tools and techniques useful to pursuing project management success. In the beginning, the effort focused on tools and techniques related to the “iron triangle,” which originally focused on scope, quality, time, and cost, and further integrated with tools and techniques focused on uncertainty governance issues.

Some steps forward have been made in the direction of incorporating “soft” factors in the basis for project management success: “*the project manager’s leadership style influences project success*” and “*different leadership styles are appropriate for different types of project*” (Turner & Muller, 2006, p. 30).

This paper has shown that a further integration is needed, in which the management of “soft” factors in a constrained environment (the “soft pyramid”) should complement the traditional effort of managing “hard” factors in a constrained environment (the “iron triangle”) and that this should be reflected appropriately in project management methods. An improvement to the *PMBOK® Guide* in this respect has been proposed. Also, some practical tips for a “year zero” awareness of the “soft pyramid” have been described. Efforts and further study should be conducted to identify and encode the criteria leading to the definition of the baseline for the “soft” factors of the project and to further investigate the dynamics of the interaction between “hard” and “soft” factors.

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