PM World Journal
Vol. II, Issue XII – December 2013
www.pmworldjournal.net   Second Edition[1]

Beyond The Iron Triangle: Year Zero
By Andrea Caccamese &
Damiano Bragantini

Beyond The Iron Triangle: Year Zero [1]

By Andrea Caccamese[a]
and
Damiano Bragantini[b]

[a]corso Vercelli 270E, Ivrea – TO 10015 Italy
[b]Agsm Distribuzione SpA, L.ge Galtarossa 8, Verona – VR 37132 Italy

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, "soft skills" for the Project Manager have been traditionally 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 "measureable" scope, cost, time and quality. Individuals need motivation, but the available motivational space is not infinite. Ground rules for behaviour and communication should be established, but the performing organization could influence and limit the choices. Lastly, 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 a "soft pyramid", a metaphor for concurrent constraints related to the "internal satisfaction" of the individuals working in 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": this is much more than "making usage of soft skills in Project Management", and should be made explicit in Project Management best practices.

Few extensions to *PMBOK*® are proposed in the HR 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 when 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 project portfolios are considered the way in which the organization translates in tangible efforts its strategic plan.

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 projects portfolio.

Then (Morris, Pinto, 2004), as in Exhibit 1, project success spans in a continuum in which project management success (was the project done right?) is complemented with 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 earned value method, CPI and SPI. Project success may be measured in

PM World *Journal*
Vol. II, Issue XII – December 2013
www.pmworldjournal.net   Second Edition[1]

Beyond The Iron Triangle: Year Zero
By Andrea Caccamese &
Damiano Bragantini

terms of benefits, changes of numeric values related to the organization business when the project's product has been delivered and incorporated in 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 (PMI) A Guide to the Project Management Body of Knowledge *(PMBOK)* (PMI, 2008) depicts as in 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.	Success is measured by the degree to which the program satisfies the needs and benefits for which it was undertaken.	Success is measured in terms of aggregate performance of portfolio components.

Exhibit 2 - Levels of project success according to PMBOK Fourth Edition

The Organization for Government Commerce (OGC) in their Managing Successful Project with Prince2 (OGC, 2009) hold 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 their IPMA Competence Baseline (IPMA, 2006)

state 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 general consensus upon what constitutes project management success, and upon the "external" nature of the indicators chosen to measure and evaluate project management success.

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

Defining "successful project management" an endeavour hitting targets related to the "external" projection" of the project might be restrictive. If consideration is given to the fact that during her/his limited and temporary tenure the Project Manager deals mainly with the project team,

made 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.

Extended Metaphor of Project Management Success

Project management focuses upon the ability to deliver the project's product in scope, time, cost and quality. There are many other requirements for a good project management, some concerning with the ability to control the level of uncertainty in project, some related to establishing and maintaining appropriate communications channels, and much more. What is evident upon 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 nature, in a context that usually limits the degree of freedom that can be exercised. The project manager is requested to define, establish and maintain a trade-off among interrelated constraints of heterogeneous nature (Kerzner, 2009). The "iron triangle", as in Exhibit 3, is a popular metaphor which identifies quite well the integrative role of the project manager (Atkinson, 1999), (Bernroider, Ivanov, 2011), (Toor, Ongulana, 2010).
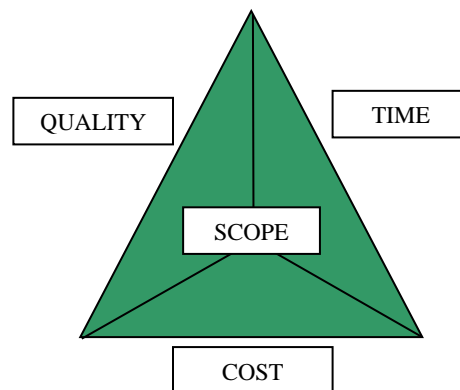

Exhibit 3 – The traditional iron triangle

Project management success is therefore related to the ability of the project manager to identify, negotiate, mediate and integrate diverse constraints in light of which the project is carried on.

However, other factors indeed interfere with the action of the project manager. Modern projects are made by individuals, whose action is instrumental for project success. Maintenance factors like team spirit, personal involvement, openness to teamwork, belong on one side to the sphere of individuals, and on the other side they constitute a collective spirit that is a primary resource for the project, as well task factors like man-hours, tools, technologies, processes and materials. Traditionally this has been incorporated in project management through the concept of "soft skills", that the project manager is expected to employ in a cross-cutting approach, therefore completing the usage of "hard skills", like estimation techniques, cost control, scheduling techniques and much more.

But considering "soft skills" just 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 advices and reasonable suggestions, like "be yourself", "pay attention to team members as individuals", "be emphatic", "communicate well". This seems too simplistic, the underlying assumption that it is just matter of having those "soft skills", or preparing to have the right level of those "soft skills", might prove false.

For example, "soft skills" enable the project manager to facilitate communication among project members: but 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 at some extent might be a constraint for a project manager willing to establish open and ease communication among team members.

For example, "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 at some extent 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 into limited spaces, exactly like "hard factors" (scope, time, cost and quality) exist into limited spaces. Being those spaces limited, the "soft factors" establish for the project manager a further system of constraints.

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. For example, like 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 behaviour. These are made of both task-related rules as well as social rules, like punctuality in task completion, agreed time to read and respond to messages, respect of consensus decisions, honesty, truth, preparation for and attendance to meetings, punctuality on 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 analytic model is centred upon analysis, linearity, sequentiality, reductionism and places high value upon expansion, competition, quantity and assertiveness. The holistic model is centred upon synthesis, non linearity, parallelism, holism and places high value upon preservation, cooperation, quality and associationism (Capra, 1982).
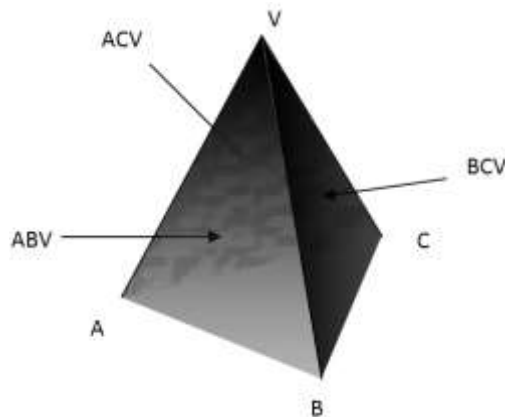
PM World *Journal*
Vol. II, Issue XII – December 2013
www.pmworldjournal.net   Second Edition[1]

Beyond The Iron Triangle: Year Zero
By Andrea Caccamese &
Damiano Bragantini

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 mono-dimensional), in that their attributes are not only quantitative, rather they have also "qualitative" attributes (and in fact they are represented by surfaces, then bi-dimensional). For example, all dollars summing up the project budget are the same. But all the motivation summing up the project motivation is not the same. While to run a project you need a definite amount of dollars (the cost space), to run a project you 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, soft spaces in project management are constrained by the context, the organization, and the project characteristics.

But soft spaces also experience interrelated constraints; exactly like "hard" factors are interrelated, e.g. the project manager cannot define whatever scope for the project since this would involve a space for project cost that might not be available, the same happens for "soft" factors.

The project might have a quite big space for motivational factors, useful for 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 strict needs of reporting, sharing, and coordination. But, on the other side, the social space available for the project could not be adequate to support what involved by a big motivational space of that kind. As an 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 side in this context there might be high attention to reporting, disciplined sharing of work results, and maybe a quite big number of meetings.

The project might have a quite big analytic/holistic space, useful for example to promote analytic 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

Cartesian scientific method. But, on the other side, the motivational space available for the project could not be adequate to support what involved by an analytic/holistic space of that kind. For example, a research project run in a cultural or professional association environment, might give the possibility to support analytic attitudes, but in this context sense of belonging and being part of a club might be also fundamental, and they might 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 usage of big portions of an available motivational space, even if this is balanced and in line with the social space and analytic/holistic space, if this involves excessive portions of "hard space". As an example, a big (even available and balanced) motivational space could not be selected if this implies portions of cost and time spaces that are not available.

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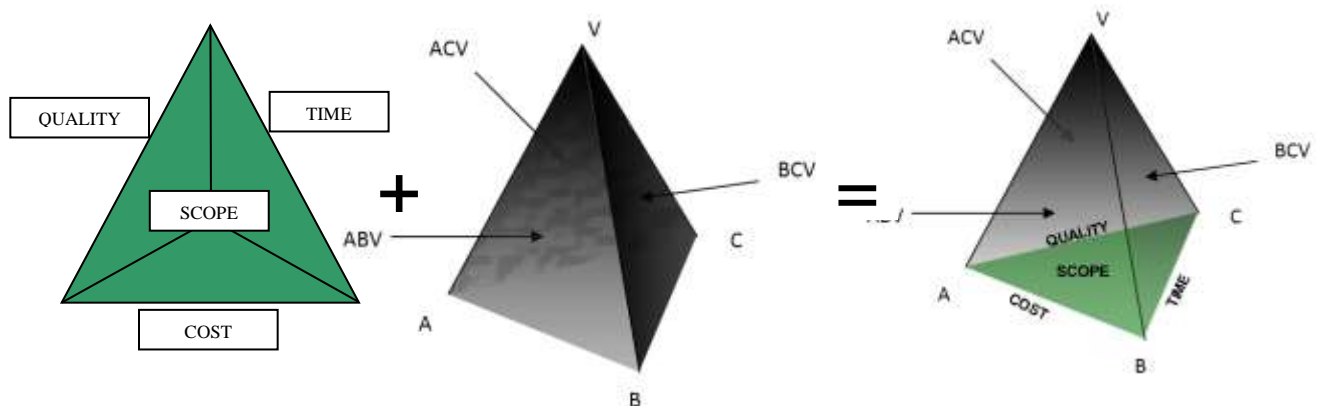

Exhibit 5 - The soft pyramid and the iron triangle

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 sphere, 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 in scope, time, and quality and cost, rather it implies also the ability to

PM World *Journal*
Vol. II, Issue XII – December 2013
www.pmworldjournal.net

Second Edition[1]

Beyond The Iron Triangle: Year Zero
By Andrea Caccamese &
Damiano Bragantini

manage a set of interrelated constraints, with the aim to create a project climate in which the various personalities working in the project may develop their own peculiarities in state of internal satisfaction. Then, project management success is not only building and maintaining the iron triangle, rather it also needs approaching in a structured way the issue to grow and respect team member personalities in a constrained environment.

Analytic/holistic space and 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 usual to mention the ability to motivate and the ability to provide norms and rules appropriate for fostering project team development. The concept of an analytic/holistic space in project management is less popular, however.

A recent research (Dondana, 2010) has been performed on an extended population of project managers of both sexes across diverse industries and territories. A comprehensive questionnaire was distributed, with the aim to gather the kind of approach, (holistic/integrative/feminine or analytic/assertive/masculine) taken by the project manager when executing tasks according to *PMBOK* knowledge areas (PMI, 2008) and using competencies according to *PMCDF* PMI, 2007). One of the main results of the research is shown in Exhibit 6:
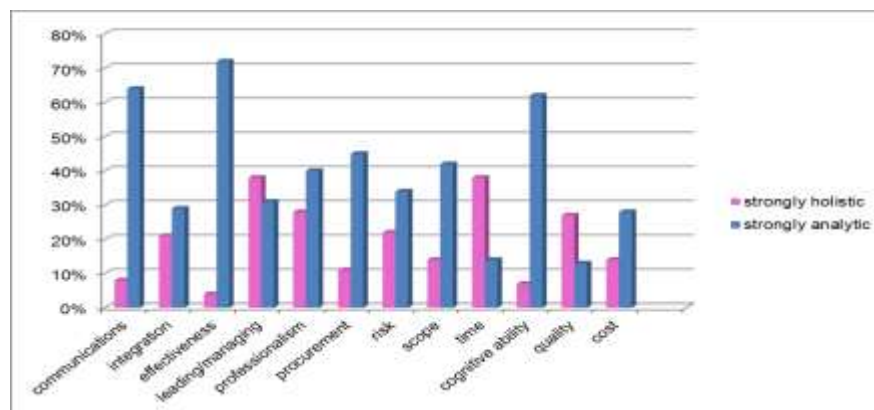

Exhibit 6 – Distribution of attitudes in Project Management

This picture shows the percentage of project managers adopting strongly analytic or strongly holistic approaches, and indeed it provides quite a number of surprises. For example, it is surprising that Cost Management, which should involve mostly usage of a strong analytic 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 attitude and are neither influenced by their sex, 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 analytic/holistic approaches.

The same conclusions may be easily extended to the 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

PM World *Journal*
Vol. II, Issue XII – December 2013
www.pmworldjournal.net   Second Edition[1]

Beyond The Iron Triangle: Year Zero
By Andrea Caccamese &
Damiano Bragantini

administrative project tasks, are part of the project management team. Junior or associates who help the project manager in running project management IT systems, are part 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 (for example, quality management, procurement management, risk management), are part of the project management team. These entire individual "do" project management and, exactly like project managers, they bring with them individual expectations in relationship to the ability to satisfy, exercise, or even improve, their own analytic/holistic approach.

The research suggests that for project management team members there should be an available analytic/holistic space in which the project manager would find the right quantity and quality of factors needed to respond to their expectations. For project management team members there is evidence that the project manager needs to manage a further "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 further 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 has been done taking as a reference PMI's A Guide to the Project Management Body Of Knowledge, 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

A Guide to the Project Management Body of Knowledge (*PMBOK*) deals indeed with soft" factors (PMI, 2008). For example, leadership is defined 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 upon the flow of administration of human resources of the project. However, Develop Project Team and Manage Project Team processes, belonging to that knowledge area, suggest the project manager to make usage of "soft skills" to build and maintain team spirit, to motivate the individuals and to evaluate their performance in the project.

In synthesis, *PMBOK* 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.

PM World Journal
Vol. II, Issue XII – December 2013
www.pmworldjournal.net   Second Edition[1]

Beyond The Iron Triangle: Year Zero
By Andrea Caccamese &
Damiano Bragantini

Managing Successful Projects with Prince2

Managing Successful Projects with Prince2 (*PRINCE2*) preliminarily states that some areas of project management are not in its scope (OGC, 2009). Among them are, human resources management, for example 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 rather placed upon clear assignments of tasks, agreed criteria for work completion and deliverables acceptance. Among *PRINCE2* Themes, the Organization theme is mainly focused upon 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 primary responsibility of the Team Manager is defined *"to delivering the project's products to an appropriate quality, within a specified timescale 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 none of its processes.

IPMA Competence Baseline

IPMA Competence Baseline (*ICB*) is definitely oriented to an assessment of project management competencies that are defined as the set of knowledge, attitudes, skills and experience needed to make a 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, p 2-3). *ICB* collects 46 project management competencies into three domains, that constitute the so-called "competence eye". In the *technical domain*, competence 1.06 Project Organization recalls the need for leadership and direction, and 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* competence 2.01 Leadership recalls the need to motivate team members, and competence 2.02 Engagement & 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 to some of the "soft" factors, however no mention is done to the existence of a constrained environment for their management.

Project Management Competency Development Framework

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 upon the individual, not upon the actions that the project

manager should execute; however, it could give some ideas of the basic elements needed to execute a good project management, that are structured into competence domains *(technical, personal and performance)*, competence units and competence elements.

In relationship to the domain of personal competences, competence unit 7.0 Leading points put 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, 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 upon exploiting others' inputs and experience "*Genuinely valuing input and expertise of others on the team*") (PMI, 2007 p 30).

Competence unit 11.0 Professionalism points clearly out the need to recognize and encourage diversities in experience and attitudes, therefore 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, *PMCDF* taxonomy points out all the "soft" factors, however no mention is done to 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. Further work and research is needed, however in this respect some improvements at current methods and a few practical tips (year zero) for the project manager may be anticipated.

PMBOK

Improvement may be suggested to *PMBOK* 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 upon defining procedures, organization and a planned workload of human resources that

PM World **Journal**
Vol. II, Issue XII – December 2013
www.pmworldjournal.net   Second Edition[1]

Beyond The Iron Triangle: Year Zero
By Andrea Caccamese &
Damiano Bragantini

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

Execution process *Develop Project Team* indeed focuses on team development, and calls for an extensive usage of "soft skills", that *PMBOK* describes with some detail in Appendix G, with a declared purpose to build and maintain 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 analytic/holistic attitudes factors. For example, the project manager should define and agree 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 upon simple indicators (for example, number and type of meetings for the social space, number and type of tasks for the analytic/holistic space, number and type of motivational activities for the motivational space);

- make 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 a further process, belonging to monitoring and controlling process group, *Control Human Resource,* as shown in Exhibit 7:
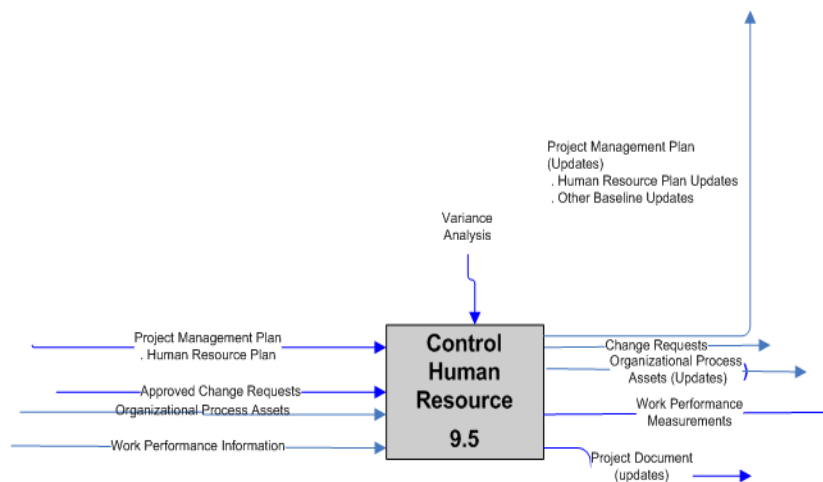
PM World *Journal*
Vol. II, Issue XII – December 2013
www.pmworldjournal.net   Second Edition[1]

Beyond The Iron Triangle: Year Zero
By Andrea Caccamese &
Damiano Bragantini

Exhibit 7 – Control Human Resource process

The purpose of this process should be similar to other "control" processes in PMBOK: 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 quantity and type of meetings could be used to determine the extent at what the project has made usage the available social space. Similarly, quantity and type of project documentation could be used to determine the extent at what the project has penetrated the available analytic/holistic space. Quantity and type of motivational events could be used to determine the extent at what the project has made usage 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 that 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 upon 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 Project Communications Management knowledge area and the processes *Monitor and Control Project Work* and *Close Project or Phase* of Process Integration Management knowledge area.

This proposal might seem to charge the Project Manager with further 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 principles of PMBOK (as well as other methods) is *tailoring*, i.e.

PM World **Journal**
Vol. II, Issue XII – December 2013
www.pmworldjournal.net   Second Edition[1]

Beyond The Iron Triangle: Year Zero
By Andrea Caccamese &
Damiano Bragantini

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 various degrees of details, or event it might be excluded from the context of Project Management, but it should be **considered** as a viable option in the very moment when the plan of a project is established.

Year Zero

A few practical tips might be useful to provide 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 behaviours, 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	Analytic/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 takes 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, and this could reduce the motivational space, or a part of it reserved for "high achievers". On the other side, extending the project scope could lead to include tasks with high technical content, and this could not be compatible with the current agreed amount of the motivational space.

Taking decisions or making changes to "quality", even if the integrity of the "iron triangle" is preserved, could involve a perturbation in the analytic/holistic space. For example, reducing quality standards could involve a reduction of the space for holistic attitudes; vice versa, improving quality standards could lead to a reduction of the space for analytic attitudes, and this could not be compatible with the current amount of agrees analytic/holistic space.

Taking 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, vice versa compressing the schedule could call for more tight rules, and this could not be compatible with the agreed amount of social space.

PM World Journal
Vol. II, Issue XII – December 2013
www.pmworldjournal.net   Second Edition[1]

Beyond The Iron Triangle: Year Zero
By Andrea Caccamese &
Damiano Bragantini

Taking 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 taken, some of them should be considered in respect of the influence they might have upon "soft" factors:

- changes in the Organizational Breakdown Structure should be taken cautiously, because size of 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;
- changes in the communications management plan, even if taken to serve stakeholders needs, could influence the social space.

Conclusions

In the last three decades the issue of what constitutes project success has been debated, and many efforts have been done to provide the project manager with tools and techniques useful to pursue project management success. At the beginning the effort was focused upon tools and techniques related to the "iron triangle", originally focused upon scope, quality, time and cost, and further integrated with tools and techniques focused upon uncertainty governance issues.

Some steps ahead have been made in the direction to incorporate "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 and 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 *PMBOK* 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 done to identify and encode the criteria leading to the definition of the baseline for the "soft" factors of the project, and to investigate further the dynamics of the interaction between "hard" and "soft" factors.

References

Atkinson, R. (1999) 'Project management: cost, time and quality, two best guesses and a phenomenon, its time to accept other success criteria', *International Journal of Project Management*, 17 (6), pp. 337-342

Bernroider, W.N. & Ivanov, M. (2011) 'IT project management control and the Control Objectives for IT and related Technology (CobIT) framework', *International Journal of Project Management*, 29, pp. 325-336

Capra, F. (1982) *The turning point*. New York, NY: Simon and Schuster

Dondana, S. (2010, October) *I risultati. Progetto XY: i cromosomi del Project Management*, Project Management Institute, Northern Italy Chapter, Milan, Italy

International Project Management Association (IPMA). (2006) *IPMA Competence Baseline*. Version 3.0. Nijkerk, The Nederlands: International Project Management Association

Kerzner, H. (2009) *Project Management: A Systems Approach to Planning, Scheduling and Controlling, Tenth Edition*, New York, NY:John Wiley&Sons

Levine, H.K. (2005) *Project Portfolio Management.* San Francisco, CA: Jossey-Bass

Morris, P. Pinto, J.K. (2004) *The Wiley Guide to Managing Projects.* Hoboken, NJ: John Wiley & Sons

Müller, R. & Turner, J. R. (2006) 'Matching the project manager's leadership style to project type', *International Journal of Project Management*, 25 (1), pp. 21-32

Organization for Government Commerce (OGC). (2009) *Managing Successful Projects with PRINCE2*. Fifth Edition. Norwich, UK: The Stationery Office

Organization for Government Commerce (OGC). (2003) *Managing Successful Programmes*. Norwich, UK: The Stationery Office

Project Management Institute (PMI). (2007) *Project Manager Competency Development Framework*. Newtown Square, PA: Project Management Institute

Project Management Institute (PMI). (2008) *A Guide to the Project Management Body of Knowledge (PMBOK® Guide).* Fourth Edition. Newtown Square, PA: Project Management Institute

Toor, S.R. & Ogunlana, S.O. (2010) 'Beyond the 'iron triangle': Stakeholder perception of key performance indicators (KPIs) for large-scale public sector development projects', *International Journal of Project Management*, 28, pp. 228-236

Verma, V.K. (1995) *Human Resource Skills for the Project Manager*, Newtown Square, PA: Project Management Institute

Whatley, J. (2009) 'Ground Rules in Team Projects: Findings from a Prototype System to Support Students', *Journal of Information Technology Education,* 8, pp.161-176

PM World **Journal**
Vol. II, Issue XII – December 2013
www.pmworldjournal.net

Beyond The Iron Triangle: Year Zero
By Andrea Caccamese &
Damiano Bragantini

Second Edition[1]

About the Authors

Andrea Caccamese

Italy

Andrea Caccamese is an Electronic Engineer with more than 30 years of work experience in Information Technology and in Management Consulting for Banking, Finance, Insurance, Oil, Manufacturing, Defense, Software Development and Hardware Manufacturing sectors. Currently he is an independent Project Management Consultant and Trainer. Mr. Caccamese has gained extensive experience in Program and Project Management, working for or with large organizations or Customers from Banking, Finance, Insurance and Manufacturing, being the leader of several relevant Programs and Projects.

Andrea Caccamese is a certified Project Management Professional (PMP) from Project Management Institute (PMI). He is also a certified PRINCE2 Practitioner and ITIL V3 Foundation Certified. He has been actively involved with Project Management Institute (PMI) in the development of the standard for OPM3 (Organizational Project Management Maturity Model) Second Edition as a Sub-Team Leader, as a final Exposure Draft Reviewer and Contributor of PMBOK Fourth Edition, and as an Internal reviewer and final Exposure Draft Reviewer of PMBOK Fifth Edition. He has also been actively involved and is still involved with the local PMI Northern Italy Chapter, where he has been a contributor to some research projects. Mr. Caccamese is a frequent contributor and speaker at various Project Management events and is co-author of the preparatory text book for PMP Certification examination "Professione Project Manager", and co-author of the text "*Il ruolo del Project Manager*". Andrea Caccamese can be reached at andrea.caccamese@libero.it

Damiano Bragantini

Italy

Damiano Bragantini is a Civil Engineer with more 15 years of experience in Civil Infrastructure and Information Technology experience. Currently he is working with Agsm Group, an important Italian utility in generation, distribution and supply of electricity and gas. Mr. Bragantini is also a recognized teacher at the University of Liverpool (UK) where he teaches in project management MSc.

Mr. Bragantini is a certified Project Management Professional (PMP) from the Project Management Institute (PMI). He has been also actively involved with Project Management Institute (PMI) as a final Exposure Draft Reviewer for Project Cost Estimating Standard and Practice Standard for Earned Value and as internal reviewer of PMBOK Fifth Edition. Mr.Bragantini has also been actively involved and is still involved with the local PMI Northern Italy Chapter, where he has been a contributor to some projects. Damiano Bragantini can be contacted at damiano.bragantini@agsm.it.