

Managing the Project Environment

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This paper was printed as Chapter 5 in the GPM state-of-the-art book Dimensions of Project Management edited by H. Reschke & H. Schelle and published by Springer-Verlag in 1990. The book involved 29 authors from 16 countries and was assembled in honor of Roland W. Gutsch's 65th birthday.

Roland, a personal friend, was founder and long-time leader of the International Project Management Association in Europe.

Abstract

Today's technological disciplines responsible for new facility and infrastructural projects are now becoming seriously attuned to the idea of concern for the physical environment. Certainly, the project managers of such projects need to be similarly aware of these concerns and manage their projects accordingly. This applies to both the project's long term impacts arising out of the project's conceptual formulation, as well as its shorter term construction impacts arising during execution.

However, today's project manager also needs to be attuned to the cultural, organizational and social environments surrounding the project. Understanding this environment includes identifying the project stakeholders and their ability to affect its successful outcome. This leads to the possibility of influencing this environment in a positive way, for the better reception of the change which the project is designed to introduce.

Thus, the influencable risks involved may be significantly reduced, and failure to take such an approach will inevitably lead to a less than satisfactory outcome. This chapter discusses various aspects of the project environment, and suggests ways in which it may be influenced in order to increase the probability of a successful outcome.

Introduction

Why worry about the project environment, when the objective of project management is to get the project completed within scope, cost and schedule? The truth is that if the real objective is to end up with a successful project, then important though these criteria are, they are not the ultimate determinants of success. Heresy? Perhaps. But success, a very elusive notion at best, is dependent upon satisfying the customers.

In the last analysis, the test of effective project management is the degree to which the project objectives have been accomplished on time and within budget to the satisfaction of the customers.

The Project Management Institute, a non-profit organization based in North America, has broadened this concept by defining project management as:

"The art of directing and coordinating human and material resources throughout the life of a project by using modern management techniques to achieve predetermined objectives of scope, quality, time, cost

and **participant** [stakeholder] satisfaction."

Note the reference to "participant satisfaction". Thus, the degree of success of a project may be said to reflect the combined degree of satisfaction of all the participants, customers or stakeholders. Where construction projects are concerned, the stakeholders are usually many and various, frequently with opposing interests. Indeed, the cynic might say that the most successful project is one in which all the stakeholders are about equally **dissatisfied!**

These stakeholders may participate in the project directly or indirectly, closely or remotely, and collectively their attitudes, understandings, or particular vested interests, all contribute to the environment in which a project is created. This environment can and needs to be managed just as surely as every other aspect of the project can be managed towards success.

What is the project environment?

Today, there is a growing awareness and concern for the impact of infrastructure and facility construction on the physical environment. Fortunately, today's technological disciplines responsible for such work are becoming attuned to the idea of mitigating the adverse impacts of their projects. Certainly the project manager needs to be similarly concerned about the project's technology, and manage accordingly. This applies to both the implementation and shorter term practical construction impacts of the project as well as its conceptual development and consequent long term impacts. However, today's project manager also needs to be attuned to the cultural, organizational and social environments of the project. Understanding this environment includes identifying the project stakeholders and their ability to affect its successful outcome. This means working with people to achieve the best results, especially in the highly technical and complex environments such as those involving modern day construction projects. Therefore, it is essential that the project manager and his or her project team are comfortable with, and sympathetic towards, their cultural, organizational and social surroundings.

This leads to the possibility of influencing the project environment in a positive way, for the better reception of the change which the project is designed to introduce. For example, peoples' typical resistance to change will no doubt be evident amongst some of the stakeholders. Others may have vested interests or personal or group agendas which are only indirectly related to the project. If these can be identified in good time, they may be dealt with proactively and in such a way that the corresponding risks, which are otherwise likely to undermine the success of the project, can be significantly reduced.

Failure to take such an approach will inevitably lead to a less than optimum project outcome.

Dimensions of the Project Environment

For convenience, and working outwards, the project environment may be thought of in terms of the project time environment, the internal project culture, the original corporate culture, and the external social surroundings.

For those who have not had experience of a construction project "in the trenches" so to speak, it is sometimes difficult to capture the feeling of pressure, stress and ultimate satisfaction of a project well

accomplished, which the construction project management process offers. For the first timers, many experience a bewilderment as to what is really happening around them. Yet, most projects, if they are well run, exhibit some very typical but distinguishing features as they run their course.

The Project Time Environment - Four Distinct Project Phases

A typical construction project life cycle is shown in Figure 1.

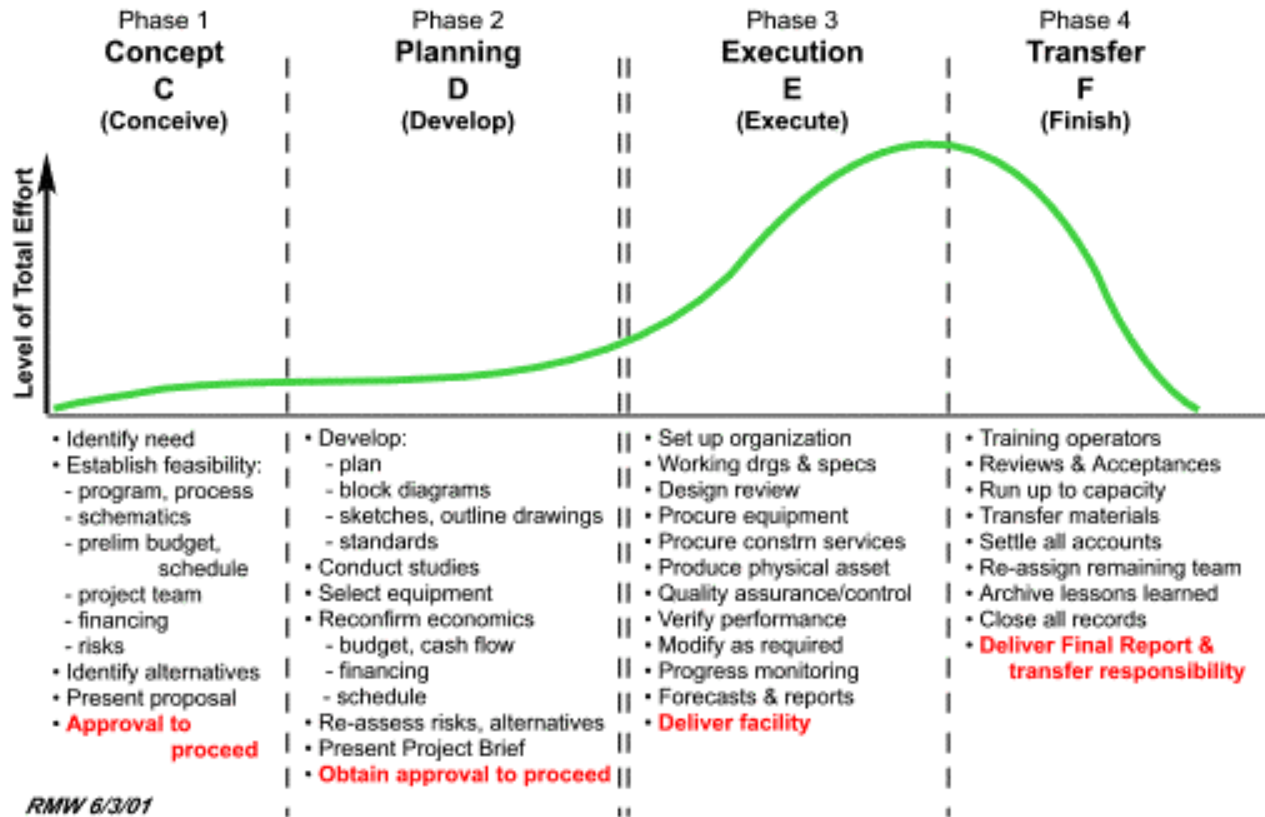


Figure 1 Project Life Cycle - Four Basic Phases

From the figure it will be seen that there are, or should be, four distinct project periods which make up the typical life span of a well run project. These phases are shown as

- Σ Concept
- Σ Planning
- Σ Execution
- Σ Transfer.

As an aid to memory, these phases may be readily recalled by the letters **C-D-E-F** standing for: **C**onceive **D**evelop **E**xecute, and **F**inish.

Figure 1 also shows typical activities which are required within each phase for building, say, a process facility. Of course, within each phase a number of sub-phases or stages can be identified, which relate to the typical construction project. But for our purposes, the four phases shown are generic to any type of

construction project, and serve to underline the vital importance of progression from concept to planning, if the project is to be successfully implemented.

Thus, these first two phases, often referred to as the feasibility and engineering phases, are the opportunity to "build the project on paper", while the third and fourth phases, which include preparing detailed drawings and specifications, encompass the physical implementation of the project. Note particularly that submission approvals are called for at the end of each of the first two phases, and commissioning and completion approvals are typically required towards the ends of the latter two phases. Thus, each phase is like a mini-project with its own objectives and constraints. And so it should be seen to be, and conducted accordingly.

The successful conclusion of each of the phases are major milestones, which are really like "gates" between the phases, and which perform the function of major "Executive Control Points". Some projects somehow manage to slip through these gates without being in full compliance with project requirements to that point. Inevitably, such projects find themselves being re-cycled back to the earlier phase - to the detriment of the final project cost and schedule.

The Level-of-Effort Curve

Also of special significance is the variation in the level-of-effort (LoE), which is associated with these project phases, and which is required to conduct a project through its life cycle. The LoE curve represents the number of people dedicated to the project on a full or part time basis. It will be seen from Figure 1 that, typically, the number of people involved rises steadily through the first two phases, but increases dramatically in the execution phase.

It is at this time that difficulties of communication and coordination are experienced, with consequent high levels of stress, and/or shortages of materials and equipment, or other unnecessary delays. The success of the execution phase is therefore highly dependent upon the quality of the planning in the prior planning phase.

The finishing phase is equally dramatic - some might say traumatic. At the peak, there must be a careful balancing act between maintaining full steam ahead to accomplish all the work required, and being ready to cut the throttle as soon as sufficient work is no longer accessible to maintain the productivity of those on the project. A major lag in this decision frequently accounts for serious cost overruns. Again, if the original planning has been in anyway inadequate, changes at this point can have serious impacts on cost, schedule and the satisfaction of the participants.

Failure to follow these simple steps, is a failure in managing the project time environment.

The Internal Project Culture

The culture which develops within a project is often a reflection of the leadership style and organizational structure which is adopted for the project. This can vary considerably according to the size and nature of the project, but in any case has been dealt with extensively in the project management literature, and will not be repeated here.

However, to the extent that the melting pot of participation and coordination represents the project's internal cultural environment, it is worth considering because it needs to be managed,. A typical situation is shown in Figure 2, in which the project group to be managed will eventually consist of consultants, contractors and specialists, as well as the owner's staff of advisors and the project control team itself.

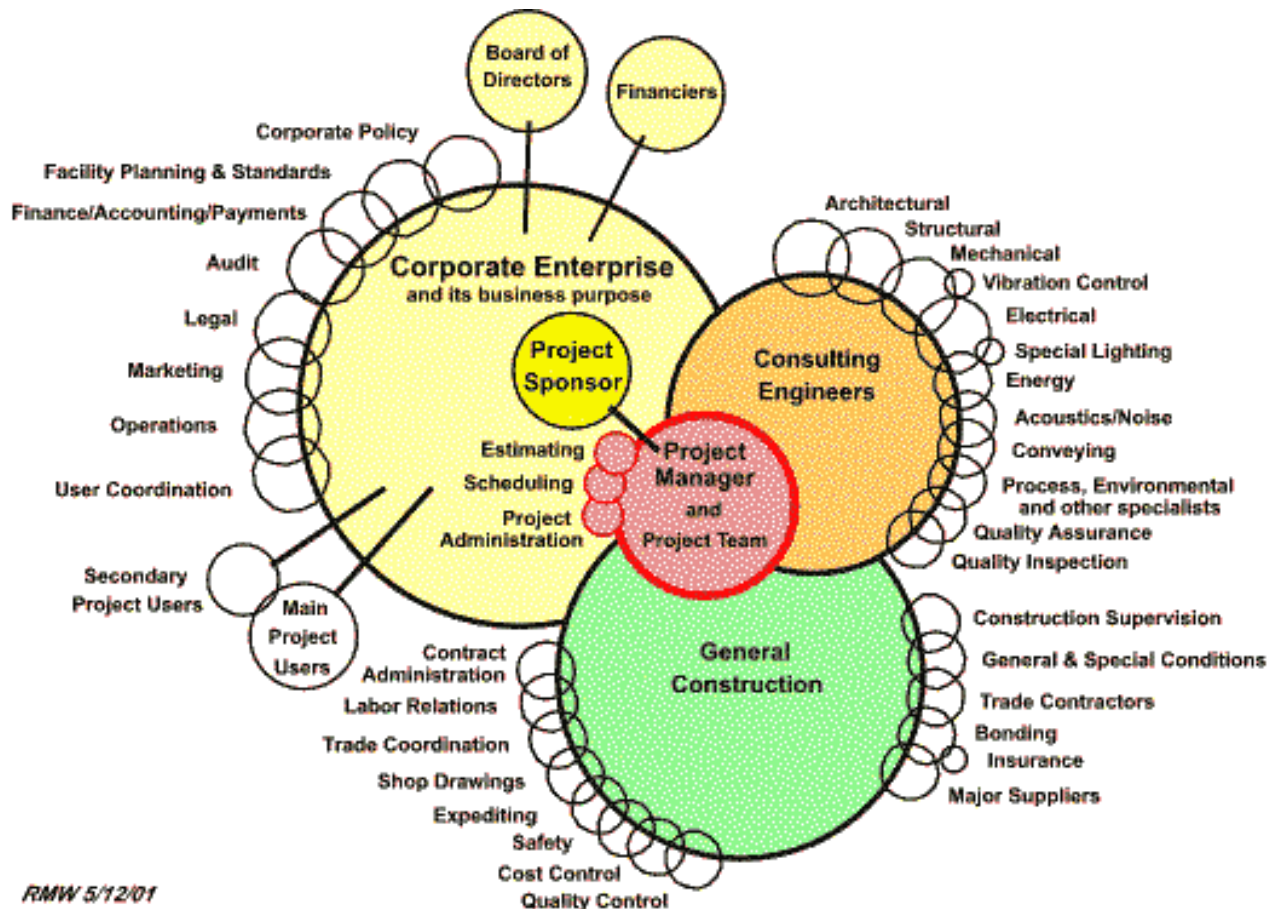


Figure 2 Project Management in the Corporate Environment

From this it can be seen that each group or person involved in the project has two allegiances or "bosses". That is to say, project responsibilities ultimately to the project manager, and "professional" responsibilities to his or her "home" department or firm. This dual reporting relationship is often referred to as a "matrix" structure and accounts for much of the complexity and difficulties of managing a project, particularly a large one.

Similarly, the project manager will also have a dual responsibility. On the one hand under the "project mandate", he or she will be responsible for the project to the project's "Executive" or "Sponsor", i.e. the person that has the authority to approve further project funding. On the other hand, the project manager will be responsible for personal and professional performance to his or her own home department or company.

Of course, the project mandate should be to direct all operational activities including planning, design, procurement, construction and commissioning. Typically, this will include such direct project support

activities as estimating, forecasting, scheduling, procurement, project accounting, and progress reports.

In addition, on a larger project, the project manager may require other more specialized services of an indirect nature. These may include financial accounting, legal, payroll, personnel, property acquisition, systems development, government and public relations, and so on. However, because they do not normally affect project control decisions directly, these activities are often carried out by independent departments or companies, which are not under the project manager's direct supervision.

A major duty of the project manager will be to report on a regular basis to the Executive, whose interest will tend to focus on expenditure to date, forecast final cost, and the scheduled commencement of the facility. For this he must render a succinct digest of the required information on progress, forecast, resource requirements, target dates and actions required. If he is to get the quality of information and service that he needs, then he must maintain good relations and communication. That is to say, he must maintain a favorable and positive environment involving all parties serving the project.

As many practicing project managers will attest, this is frequently more easily said than done. In no small part, this is due to the nature of a project in the context of its time environment, and the variation in level-of-effort as described earlier.

The Corporate Culture

Traditionally, corporate management has not been concerned with projects but with conducting and maintaining an on-going enterprise. Even though management is concerned with planning, coordinating and controlling resources, a culture exists in which work is accomplished by functional units, and time is not an immediate concern. Change is often minimal and protracted, and can be thoroughly programmed and progressively integrated. The work places of such enterprises are typically bounded by classic organizational hierarchies, established policies, procedures and lines of authority, by centralized control and by repetitive, assembly-line-like jobs.

Unfortunately, this traditional corporate management approach breaks down where urgent or significant change needs to be instituted. The correct response is to establish one or more projects to implement the change. However, new management relationships are then required, which tend to cut across the normal functional authority and flow of responsibility and radiate beyond the functional units.

Happily, project management is seen by many as a much more challenging and exciting work environment, even though a clear understanding of its concepts and application is relatively new. This is because project management is indeed a different style of management as applied to project-type work. However, where capital construction projects are concerned, there are almost always many people associated with them, who only have but a limited understanding of the process of bringing a capital project on stream. Without embarrassment, I include politicians, owners, sponsors, financiers, bankers, operators, lawyers, accountants and, I regret to say, even engineers.

Consequently, it is essential to establish a competent project management capability for a potential construction project even before putting in place appropriate design, engineering or construction capability.

Influencing The Project's Cultural Environment

The project manager of the successful project will recognize the need to spend some effort in influencing the project's cultural environment for the benefit of the project stakeholders. Every project team member, indeed every member of the workforce, needs to be persuaded to convey the attitude that, just as they are stakeholders, every other project stakeholder is also important. It means inculcating a universal attitude which says "**We care!**", and a commitment to service, even if it sometimes hurts.

It also means creating a project management environment in which every decision and action is designed to make the stakeholder's experience better than it would have been had the project not been implemented. It requires a focus on the quality of the stakeholder's experience at every stage of the project, rather than an overriding preoccupation with computer printouts and weekly progress reports.

Since this relationship mirrors the project manager/team relationship, it is clear where the process must begin. For in both the short and long term runs, it is through good team relationships that good project management practices can be achieved. By attending to what the team members need in order to perform their respective contributions, the project manager can establish effective relationships with them. These characteristics of help and support as a cohesive team are, in time, passed on to the project's stakeholders. This positive environment seldom goes unnoticed.

In developing project management strategies at the outset of the project, the project's executive should recognize the important contribution that the role of human resources development and, specifically, project management training can make towards improving the project's cultural environment. Such training provides a powerful tool in developing competency and commitment to the project, in improving team performance, and ultimately, in final project quality.

Effective Internal Project Management Strategies

Projects fail for many internal reasons, some of them technical, some of them managerial. However, even the technical failures can often be traced back to a failure on the part of the project's executive management to recognize and deal with these inherent managerial risks. On the other hand, probably the majority of apparently successful projects do not reflect their optimum potential either.

As a matter of project experience, a number of prerequisites have been identified with the successful project. While these prerequisites do not necessarily guarantee success of future projects, their absence may well lead to sub-optimal success, if not outright failure. The Project's Executive has a vital role to play in achieving project success and should therefore insist on the following:

Executive Support - The Executive must clearly demonstrate support for the project management concept by active sponsorship and control.

External Authority - The project manager must be seen as the authoritative agent in dealing with all parties, and be the responsible and single formal contact with them.

Internal Authority - The project manager must have the necessary managerial authority within his organization to ensure response to his requirements.

Commitment Authority - The project manager must have the responsibility and authority to control the commitment of resources, including funds, within prescribed limits. The results of these decisions must be both accountable and visible.

Project Manager Involved in All Major Decisions - No major technical, cost, schedule, or performance decisions should be made without the project manager's participation.

Competence - The project manager and his team members must be competent. Other functional personnel assigned to the project must also be competent.

Project Team - The project manager should have a say in the assembly of his project team, which will help him to obtain their personal commitment, support and required quality of service.

Management Information Systems - Effective project management information and control systems must be in place.

The Project's External Surroundings

On some projects, events external to the project sometimes come as a surprise to the project manager and his team and are therefore seen as obstacles to progress. However, as noted earlier, projects generally exist only because of that external environment and so it is essential for the project team to recognize that they must also be responsive to it.

What is this Project External Environment?

It includes the established and latest state-of-the-art technology in which the project is based, its customers and competitors, its geographical, climatic, social, economic and political settings, in fact, virtually everything that can impact its success. These factors can affect the planning, organizing, staffing and directing which constitute the project manager's main responsibilities.

This external environment represents a complex set of inter-dependent relationships, which constantly react with the project as it is brought into reality. Conversely, most projects are intended to impact the environment in one way or another, and this is particularly true of infrastructure projects. Therefore, for the project to be ultimately successful, these inter-dependencies must be taken into account.

Even more important, the factors noted above have a habit of changing during the life of the project, especially if the project takes a number of years to complete, and is brought on-stream in phases. This translates into a high degree of uncertainty or risk surrounding the project, as a result of its external environment. In fact, the greater the degree of interdependence, the greater the degree of uncertainty, and the greater the challenge for the project manager and his team.

Not the Same for Every Project

Clearly, the environment will not be the same for every project. In fact, it is likely to be determined principally by three considerations, namely:

- Σ The product or service resulting from the project
- Σ The technology and the manner of its application, and
- Σ Its physical location

To identify potential difficulties stemming from the project's stakeholders, assess their probability of occurrence, and to try to head them off in advance, the project team must learn to interact frequently with those individuals and institutions which constitute the most important elements of the project's external environment. Together with the project's sponsors, owners and users, these people constitute the project's direct and indirect stakeholders.

Effective External Project Management Strategies

Prerequisites for avoiding internal project failure, or at least sub-optimal results, were discussed earlier. However, it has also been noted earlier that external conditions and events also represent uncertainty and risk to the successful accomplishment of the project. These conditions have been linked to the external stakeholders of the project. Therefore, it is essential to develop a sound stakeholder environment.

Developing a Sound Stakeholder Environment

Just as the means of influencing the project's cultural environment, as described above, was one of developing the right attitude, so it is with developing a sound stakeholder environment. Perhaps this attitude is best reflected by adopting a mind set that reverses the traditional organization chart hierarchy. In other words, place the project stakeholders at the top of the chart, followed by the front-line project team members, and on down to the project manager at the bottom. Perhaps the project team will then be better visualized as a truly service organization, designed to serve the best interests of a successful project outcome, both perceived and in reality.

Some suggested steps in this process include:

- Σ Learn how to understand the role of the various stakeholders, and how this information may be used as an opportunity to improve both the perception and reception of the project
- Σ Identify the real nature of each stakeholder group's business and their consequent interest in the project
- Σ Understand their behavior and motivation
- Σ Assess how they may react to various approaches
- Σ Pinpoint the characteristics of the stakeholders' environment and develop appropriate responses to facilitate a good relationship
- Σ Learn project management's role in responding to the stakeholders drive behind the project
- Σ Determine the key areas which will have the most impact on the successful reception of the project.

- Σ Remember always that even a minor stakeholder group may discover the "fatal flaw" in the project and which could bring the project to a standstill!

Identifying The Project Stakeholders

One technique for dealing effectively with the project's external environment is to prioritize the required stakeholder linkages by conducting a stakeholder analysis. Such an analysis would be designed first to identify all the potential stakeholders who might have an impact on the project, and then to determine their relative ability to influence it.

Stakeholder Groupings

Project stakeholders may be recognized in any of the following groupings:

- Σ Those who are directly related to the project, for example suppliers of inputs, consumers of outputs, and managers of the project process
- Σ Those who have influence over the physical, infra- structural, technological, commercial/financial/ socioeconomic, or political/legal conditions
- Σ Those who have a hierarchical relationship to the project such as government authorities at local, regional and national levels, and
- Σ Those individuals, groups and associations, who have vested interests, sometimes quite unrelated to the project, but who see it as an opportunity to pursue their own ends.

Stakeholder Categories

Having identified the various stakeholders, each may be assigned to a category according to their relative ability to influence the project. Three categories are envisaged, namely:

- Σ Those who are controllable
- Σ Those who are influencable, and
- Σ Those who need to be appreciated

Within each category, each stakeholder may then be further rated by degree of importance according to their ability to influence the project. Appropriate members of the project team can then prioritize their efforts accordingly to maintain the necessary stakeholder linkages, and thus give rise to the best chances of ultimate project success. If the project is large enough, or the stakeholder linkages are sufficiently intense, the project team's efforts may be assigned to a specific group within the project team. Enter Project Public Relations.

Project Public Relations

Traditional management has long since recognized the classic Input-Process-Output model with its management feedback loop for controlling output, see Figure 3. Dynamic managers also recognize that opening communication channels in both directions constitutes a powerful motivator at the operative level. Whether quality information is presented in verbal, written or graphical form, improvement in

performance can be quite remarkable. Indeed, many knowledge workers demand it, and the Japanese have built their industrial reputation on the "quality circle", which uses this principal.



Figure 3 Traditional management feedback

The principal is just as true in the field of projects, though regrettably much less evident on construction projects. Nevertheless, on a major project, especially if it is publicly funded, providing a general information center is quite normal. A more proactive stance, or positive feed forward, is usually known as Public Relations, or just PR, and plays a vital in the favorable influence of the environment of a complex project. This public relations feed forward concept is shown in Figure 4.

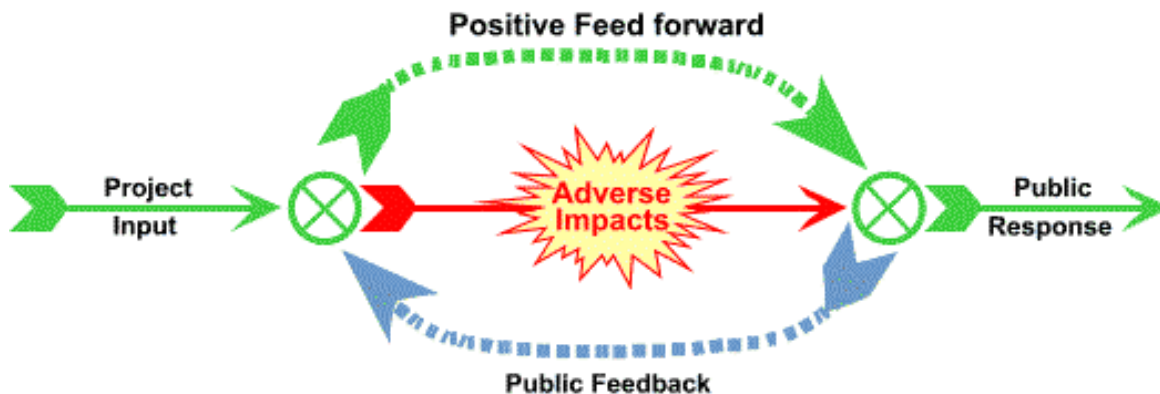


Figure 4 Public relations feed forward concept

To a surprisingly large extent, the project team's ability to exercise this positive feed forward will determine their ability to control the project in terms of its final cost and schedule.

The Public Relations Plan

Good public relations requires a strong identity, a planned program and concrete goals, and commences with appointing someone to be responsible. That person must be outgoing and positive, yet able and willing to listen. He or she must be capable of preparing carefully constructed text and presentations, and be able to work through a program systematically. Like every other major function of the project management process, the PR function should be conducted like a sub-project.

In developing a PR plan, the following eight steps are recommended. It will be noted that many of the recommendations made earlier are incorporated.

1. Know the project organization and its objectives thoroughly
2. Determine who the interested publics will be and the characteristics of each
3. Establish the relative importance of each to the project, and in particular, identify the "high risk" areas
4. Assess the current reputation of the sponsoring organization as it is perceived by each of the interested groups
5. Determine appropriate action in each case
6. Develop strategy, resource requirements, priorities and schedule which are in sympathy with the project itself
7. Implement the PR program
8. Continuously monitor the effectiveness of the program during its execution, and adjust as necessary for optimum results

Ensuring the Effectiveness of the PR Plan

What are the hallmarks of successful PR? Here is a top ten check list of a good public relations program:

1. Develop quality information about the benefits of the project
2. Care and concern genuinely expressed for the project's stakeholders
3. Timely (rapid) response provided to information requests
4. Information requirements anticipated and provided ahead of time
5. Genuinely sincere appreciation expressed to a stakeholder for their inquiry
6. Flexible personal responses provided, where special issues dictate
7. Recovery from inevitable lapses of services during implementation, in ways that impress
8. Project team members empowered to make decisions to solve urgent and obvious problems
9. Stakeholder-friendly policies and procedures established
10. Stakeholder-friendly facilities available both during project implementation, as well as subsequently

Some Practical Examples

Advanced Rapid Transit System

A local government authority conceived an ambitious project to design and build 22 km of light, intermediate capacity, rapid transit system through densely populated areas. Innovative features included light driverless cars, magnetic traction, steerable wheels, and fiber optic based communication and control systems. The cost of the project in 1986 was about \$800 million (Canadian).

With such a high profile project, a decision to establish a public relations function was taken at an early stage. At the outset, the cost of the system was thought to be exorbitant. However, figures were developed and shown graphically in the display center to show that the estimated cost was realistic when compared with similar systems built with similar capacities elsewhere.

Safety of the automatic driverless trains was another major concern. A major strategy in the project implementation plan was to fast-track a one kilometer test section of the permanent elevated part of the

line through to complete temporary operation, at a very early stage. This section provided invaluable design and construction experience. In addition, it was used for five months to give free rides to more than 300,000 visitors from all over the world, while construction of the rest of the system continued.

During construction, the alignment community was recognized as the most important stakeholder. All homes within each area were kept informed of progress by a local news letter. In addition, a construction "hot line" was established to receive complaints day or night, with someone available to visit the scene at the earliest opportunity. The practice worked well and paid dividends. Perhaps the most satisfying evidence was to be seen in the shift of attitude on the part of the local newspapers.

These strategies undoubtedly did much to build confidence, assuage stakeholder concerns, and enabled the project to be completed early, within budget, and to a high performance level. The cost of the PR effort amounted to approximately 0.6% of the total project budget.

Proposed Liquid Natural Gas Facility

A private company planned to build a facility to export liquid natural gas. The project would include 800 km of pipeline, a liquefaction plant, a marine terminal and a fleet of ships to deliver the product to the company's customers. Planning approval required environmental impact and socio-economic benefit studies, and to succeed would require the majority support of all those impacted by the project.

Assistance with public relations was obviously required, and a local public relations firm was hired. Their major asset was in knowing local dignitaries and media representatives and in being able to provide quick and favorable access to them. Very positive relationships were established with local authorities and the local populations.

World Class Fair

The local government authority conceived the idea of a five-and-a-half month long transportation fair to commemorate the 100th anniversary of the founding of the city of Vancouver. The site, which is within walking distance of downtown, had to be expanded several times to the final size of 70 hectares to accommodate the 41 countries that finally took part.

The financial success of the project was heavily dependent upon exhibitor participation on the one hand and attendance on the other. A major promotional effort was therefore obviously a necessary part of the project. However, to be successful, the project also needed the support of the local communities, who initially viewed the whole enterprise with considerable skepticism.

Therefore, a public relations effort was established quite separate from the hard-sell marketing effort. The basic philosophy of the program was to create public interest, awareness and excitement, establish a sense of ownership and thereby increase the number of local visitors. Particularly with publicly funded projects, it is worth bearing in mind that the stakeholders who stand to gain the most are not necessarily those who are impacted the most. In practice, they are likely to be the "vocal minority", while the former sit on the side lines as the silent majority.

In the early stages of the project, the construction site became embroiled in a major labor dispute. It became a test case for retaining closed union shop conditions on government work. The government, on the other hand was determined that every company should have an opportunity to participate. The project organization tried to negotiate a compromise with the unions and the government threatened to cancel the fair.

Fortunately, the public relations communication with the media had been steady, open and honest. Through the media, the issues were taken back to the public, and the majority public opinion eventually prevailed. Except for the original four or five days lost, there were no subsequent labor interruptions. In due course, the fair was opened on time, within its prescribed budget, was very well attended and highly successful. The cost of the PR effort was of the order of 0.4% of the project cost.

Water Storage Barrage Construction

Further afield, and some years ago, a well known national construction company secured the first major water retention barrage construction project in Bihar, India. At the time it was the longest barrage in the country. However, the entire area was known for its local labor problems.

The local village heads and leaders were invited to meetings in which the project, and particularly the arrangements for employment were explained. Even though by law the company must employ its own men first, the local elders were pleased to be consulted, and work was found for their people by subcontracting. Certain tribes expected special recognition and treatment, if peace on the site was to be maintained. This too was carefully nurtured.

The company also gave great attention to the facilities needed by its employees and their families. Necessary schools, shops, tailors, hair dressers, a butcher, dhobi, atta grinding shop, and so on, were all provided. Similarly, necessary buildings and facilities for messes for vegetarians and non-vegetarians sections, South Indian and North Indian and Punjabi were also provided. Transportation was provided to the local school, and outsiders were admitted to the project hospital facilities, which provided free medical attention. An activity club was established where all levels of the project staff could play and relax together.

As a result of these and many similar considerations, the project was completed on time and in peace, including the periods of seasonal retrenchment and at the end of the project. This was a considerable achievement given the time and place. Even though the project was built some years ago, the need for cultivating a favorable impression amongst the native tribal groups was well recognized.

Clearly, the project management of the day understood the importance of managing the project environment.

Two recent hydro projects

It seems that water storage schemes are becoming increasingly vulnerable to environmental concerns. As if to emphasize the points made earlier, the following newspaper articles are perhaps worth quoting.

From The Indian Express, Bombay, January, 1990.

"The controversial Tehri hydel power project in Uttar Pradesh is likely to go through, perhaps with some changes to satisfy agitating environmentalists...After a marathon five hours of talks. . .chaired by the Minister of State for Environment and Forests, Mrs. Maneka Gandhi, the environmentalists lost some ground as it was decided to resume work which was suspended earlier this month....

"The meeting highlighted the clear divide between the groups for and against the project, and the technical data and arguments presented by both sides confused even Mrs. Gandhi..."

From The Sunday Spectrum, Calgary, Alberta, March 1990.

"Activity continues at Oldman Dam site...There is. . .a hub of frantic construction, even though nearly a week ago three Federal Court of Appeal justices jerked the province's building Licence and ordered neglected environmental studies."

Clearly, there is still trouble ahead!

Consultants in Constructive Citizen Participation

Today, project sponsors and administrators are finding themselves spending more and more of their time and resources simply reacting to conflict and crisis. To the surprise of many, they are discovering that much of this is coming from the community around them, because now people have very different values, goals and assumptions. As we have seen, this trend is likely to accelerate.

In fact many project delays and postponements and cancellations are unnecessary. Mistrust stems from uncertainty, poor communication, inadequate information exchange, basic philosophical differences, and general lack of credibility. Mistrust leads to confrontation, polarized positions, inflexibility, and entrenched adversarial roles. Each party needs to at least understand, if not entirely accept, the legitimate and differing interests, roles and expectations of the other.

Very often, the issue in the public's mind is not so much how to stop the project altogether, but how to have their concerns integrated into its strategic planning. However, once conflict has developed, special dedication and skill is required in its resolution. Better still is the constructive participation of the citizenship at the outset.

Consequently, consultants are now to be found who have developed various techniques for working constructively with stakeholder conflict, or who specialize in acting as independent mediators through communication, education, analysis and soliciting alternative courses of action.

Summary

Clearly, the project manager's job is no longer confined to controlling events within his or her own project organization. It is no longer sufficient to think of project management as simply the monitoring of time and cost by planning, scheduling and resource leveling, as many software programs might have

us believe. Nor even is it sufficient to include the many other organizational tasks of the project manager, as leader of the project team.

Vitally important as all these things are, these are not sufficient for effective and successful project management in today's dynamic world. What is equally important - often more so to achieve a successful project outcome - is the need to track the project's linkages to the external environment. This is especially true of infra-structure projects which place emphasis on development and innovation and must respond to increasingly rapid change.

The reason is simple. Every construction project exists for a purpose relating to, and within, its surrounding environment. Therefore, its creation and implementation must be responsive to its environment by maximizing the benefits, as far as possible, to all the stakeholders, and minimizing the adverse impacts by deliberate mitigation. Clearly, how the project manager works within the project environment can make all the difference between the success of the project and its failure.

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