The perception of failure and success of projects is usually based on unspoken and personal indices. Therefore, it is not uncommon that two different people, usually with two different sets of experiences and values, would assess the success of the same project differently. There is a need for a set of performance indices that formalize the process and make explicit what is implicit in these seemingly subjective evaluations. The purpose of this article is to introduce tools that would allow team members and client personnel to formalize the way they evaluate projects. The primary advantage of such formalization is the consistency in evaluation procedures, and potential project-to-project transferability of the resulting values.

Using the same set of factors during the entire project life cycle will provide a baseline for informed monitoring of the progress in achieving all of the objectives of the project. This consistent and methodical information will be invaluable in tracking the effectiveness of various project implementation processes, since the resulting historical data would provide a foundation for continuous improvement in planning of future projects.

It is important to stress that this article is not advocating a specific set of attributes and a specific set of rating values, but rather the methodology by which the attributes and their ratings are identified, formalized, and documented. The structures identified and described here should be modified in concert with organizational culture and priorities, and in the light of short-term and long-term project management goals of the organization. The assignment of weights and priorities to the various elements of the structure can be either based on the amount of time and effort that would be necessary to fully manage and deliver a specific element, or based on the importance of that element.

Two Different Sets of Attributes

The points of reference of the client are the features of the product, although sometimes the perspective might get tempered by behavioral and relationships issues of the project team. There is no question that the team is primarily concerned with the deliverable. But...
sometimes, in the process of planning and executing the project, the team gets sidetracked by the activities and processes of the project, to the detriment of the deliverables. Finally, the team might become so focused on the processes, and the deliverables that these processes produce, that the team as a whole might overlook the people issues involved in interrelationships within the team among the team members, and with the client. It is ironic that these relationships in turn will affect the quality and magnitude of the deliverables, albeit in subtle and nondescript ways.

Given that the client and the team generally view project success differently, a set of formalized, explicit, and quantifiable indices will allow the project team and client personnel get an insight into how the other group views projects. Such indices will allow the team members to develop a needed sensitivity to the client’s preferences and priorities. This new outlook is invaluable during the planning, scope development, implementation, and change management of the current project, as it would be in planning of future projects. The relative importance of team factors may change during the life of the project, although the client indicators will be more stable. For instance, the importance of risk management, which is one of team success factors, will diminish as project draws to a close. However, the client strong focus on the triple constraints, and secondary focus on people issues will stay unchanged throughout the life of the project.

If the factors are selected on a project-by-project basis, it is entirely possible that they would be a reflection of the project manager’s preferences and the specific constraints of the project. As such, they will be specific to that manager and might lose their value in terms of applicability to other projects, or if the project manager or the team members are changed midstream. In order to achieve a somewhat universal applicability, a generalized project success evaluation model is needed. The objective in the selection of the structures and categories described here is to achieve comprehensiveness of coverage and applicability to any project in any industry. The advantage of this approach is the availability of benchmarking data across multiple projects, and in various industries.

Sometimes, particularly in organizations that traditionally award cost-plus contracts, the client gets involved in planning the project and in designing all of the activities that are necessary to
deliver the final product. The disadvantage of this transfer of focus is that the contractor and the project team tend to become focused on following the process prescribed by client rather than delivering the final product.

The client’s success indicators are designed to determine whether or not a particular feature exists in the final product that was delivered to the client. Whereas, the team success factors tend to focus on whether or not processes, procedures, and tools were in place in order to facilitate the activities that would ultimately result in the final product. The premise in developing two sets of indices is that the viewpoints of client and the team are fundamentally different. This article describes the development of two separate structures, very similar to a WBS, to characterize the elements describing the client and the team viewpoints.

Client View

Project success attributes, as viewed by the client, are derived from the limited product characteristics and areas of performance that will facilitate successful competitive positioning of the organization. Success in this limited number of areas will signify success for the project.

The client's focus is primarily on the goals and objective of the project, and specifically on the scope and quality aspects of the deliverables of the project. Of secondary importance are cost and schedule attributes of the project. To some extent, the client does not, and need not, become concerned with all those activities and procedures that were implemented in the process of fabricating, assembling, crafting, or creating the deliverables of the project.

Figure 3 — The Client View of Project Success Indicators (Continued)

The project objectives can be associated with the achievement of an identifiable level of performance or certain attributes of the deliverable. The objectives will include characteristics such as physical size, capacity, length, height, or strength. It may also involve the achievement of a certain level of quantified reliability, the attainment of a critical speed, the establishment of a quantified level of system availability, the ability to handle a given number of transactions within a defined period of

Project Management Maturity Level Descriptions

5. Organizational Use of Quantitative Data to Conduct continuous Improvement

4. Organization Commits to a PM Culture and Captures Quantified Performance Data

3. Organization Implements PM Processes and Gives Recognition to Successful PM Processes

2. Localized Implementation of Formalized PM Processes

1. Inconsistent Procedures and No Formal Guidelines

Figure 4—Project Management Maturity Level Descriptions
time, or the ability to provide a certain level of quantified customer satisfaction. Other deliverables and objectives can include physical tolerances, software tolerance limits, physical speed, software processing speed, software processing accuracy, indicators of surface texture, quantified robustness features, software error frequency, quantified personnel skills, or quantified measures of user friendliness of the software.

When the client commissions a project, either for the use of the client, or for the use of one of the stakeholders, the objectives of the project and the characteristics of the deliverables are the basis for measuring the degree of the success of the project. This view of the objectives and deliverables would be held regardless of whether the project will be implemented by an outside organization through a contract, or by an internal organization through a mandate or interdepartmental agreements. Thus, the success of the project is measured by the degree to which the desired scope and quality were achieved and by the satisfactory values of project duration and project cost. These items lend themselves to quantification and therefore the results and observations are highly quantitative. These indices might even be precise if the project objectives were specified with clarity at the inception, and if the changes to the project environment were tracked and managed methodically throughout the life of the project. The parameters that would influence the pronouncement of success for these attributes are the accuracy of the original value, the acceptability of the final value, and the extent to which the variance is justified by changes in project constraints and in the organizational environment. Within the context of the tone of this article, these items deal with things, and as such can be independent of people issues, although people issues influence the texture and manner of the execution of these project tasks. In some cases the client, consciously or sub-consciously, places some importance on two categories of the people issues of the project: those dealing with client satisfaction and those dealing with team morale. The items that would influence the client’s perception of the success of the project include the team’s responsiveness, punctuality, demeanor, trust, adversarial, and communication characteristics. To a lesser extent and much less frequently, enlightened clients consider the team morale during and after the project delivery as an element of project success, particularly if the project is an internal project.

Using a WBS-like structure for the characterization and calculation of success indicators, as viewed by the client, the first level of this structure will have the following elements: things issues and people issues, as seen in figure 1. Things issues will include scope, quality, cost, and schedule; these items will be judged on the basis of accuracy, sophistication of the original value, attractiveness, realism, and acceptability of the final value. People issues will include client satisfaction, and team morale. Elements of the third level of this structure are shown in figure 3. The relative weight placed on each of these elements will be dependent on

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**Figure 5 — Project Success Factors, Team View**

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**Figure 6 — Project Success Factors, Team View (Continued)**
organizational objectives, strategic goals, and corporate environments. However, figures 2 and 3 provide a first approximation of these values. Independent of how these attributes are created and ranked, best results can be achieved if the project is ranked by such a formalized process as frequently as possible and throughout the life of the project. Thus, variations in evaluation numbers, which can stem from personal preferences and different viewpoints, will be placed in proper perspective. It is an important point that if the purpose is to make a cursory evaluation, evaluating the level two elements, as shown in figure 2, might be sufficient. On the other hand, if a detailed success evaluation is necessary, one might choose to evaluate the project success by quantifying the level three elements, as shown in figure 3, or even level four elements.

In the structures presented in this article, the number of points assigned to each element indicates the relative importance of the elements. The total possible number of points that are normally assigned to the project will then be 500. The reason for this particular distribution is to have a scale of 1-5 for the success of the project, somewhat akin to the project maturity ratings assigned to organizations; a brief description of the levels of maturity is shown in figure 4. It is likely that if the majority of projects in an organization are ranked at three, that particular organization is at the maturity level three. Naturally, this assessment is by inference only, but it could serve as a good first approximation for the organization maturity. On the other hand, if the organization has achieved a level-three maturity, most although not all of the projects will achieve a rating of three. There might be a statistical inference relationship although not necessarily a linear deterministic relationship.

Team View

Project success attributes, as viewed by the team, are derived from the limited project management activity categories that should receive constant and careful attention from the project management team. In order for the project to be considered successful, all of the activities indicated by the team factors must be managed well regardless of the phase and regardless of the incremental changes to scope, schedule, and cost. However, the time spent on these activities, and the impact of that activity on the deliverables, might change during the project lifecycle.

The primary focus of the project team is the final deliverable of the project. But, a competent project team would not only focus on the deliverable, but also on all of the activities and processes that facilitate and assure the delivery of the desired product. This delivery must also be in the most efficient and cost-effective manner. Sometimes, the team members get overly consumed in the prescribed process and place the product at a secondary priority position. This is particularly true in organizations where clients conduct a lot of micro project management or in organizations that traditionally perform cost-plus contracts.

Many of the skillful project managers intuitively determine their own success factors. Since these factors are not explicitly identified and recorded, they are not part of the project management reporting process, nor do they become part of the historical project data. Therefore, if these intuitive indices become formalized, managerial intuition can become the logical basis and the structural foundation for an explicit and formalized evaluation system to be used by all projects and all managers in the organization. Since all project managers are not equal in their skill in success factor identification, a formalized factor identification and implementation will capitalize on the skills of these more experienced and innovative managers for the good of the organization.

Once the success factors that are appropriate for the organization are identified and validated, the foundation for an informed project monitoring process can be established. The availability of these quantified factors will allow the project manager to work with an established archive of historical data in order to keep all aspects of the project within the standards of acceptability of the organization. Such standards and procedures will ultimately improve the probability of the team’s success in achieving project goals.

The mission of the project team is to plan the delivery of the desired product, implement those plans in a dynamic environment, and manage all of those issues that influence the performance of the team in delivering the desired product. The first level of the evaluation structure for the team-related success factors, as shown in figure 5, includes items related to things and items related to people. As
shown in figure 5, the second level things items are scope, cost, quality, schedule, contract, risk, integration, and change. The first four of these elements are clearly things oriented; the second four are primarily things oriented but are partially influenced by people interactions, relationships, communications, etc. It is an important point that client attributes are directly among team’s important values. However, these values are augmented by elements dealing with project implementation procedures, as shown in figure 6.

All things elements are distinguished by the fact that their quantified status can very easily and conveniently be determined by charts, tables, and graphs. On the other hand, measurement, quantification, and display of success in people issues are much more subtle, illusive, and subjective. Nonetheless, people issues can have profound effect on the success of projects. Elements of the third level of this structure are shown on figure 8. The relative weight placed on each of these elements will be dependent on organizational objectives, strategic goals, and corporate environments. However, weighting values included in figure 7, will provide a first approximation of these values. Third level elements of the things issues, for cost, scope, quality, and schedule would address the sophistication, accuracy, and clarity of the original value and the extent to which variances are justified. Sometimes there may be a debate between the team and the client as to whether or not a particular variance is justified. It is such differences of perception that would lead to different determinations of success for the same project. Third level elements for contract, risk, integration, and change are shown in figure 8. Management of contract, risk, integration, and change primarily involve documents, charts, and technical facts, but it requires dealing with people from other organizations somewhat extensively. Therefore, managing these items has a small people issues component attached to it. Additionally, these items tend to be more global and all-encompassing, and their field of influence include scope, cost, schedule, and quality.

Level two people elements include managing the team issues, client issues, vendor issues, and communication efforts. Elements of the third level of this structure are shown in figure 8. The relative weight placed on each of these elements will be dependent on organizational objectives, strategic goals, and corporate environments. However, weighting values included in figure 8 will provide a first approximation of these values. Independent of how the weighting values and the corresponding structure are created and ranked, consistency and uniformity will be significantly enhanced if the evaluators have a formalized schema of recognizing the importance of these issues, and a methodical approach to measuring the success of managing the people involved with the project. As in the case of client issues, the points assigned to the team issues will add up to 500 points, somewhat in line with a rating of 1-5 as is customary for maturity assessment. As with the client success indicators, if the organization is assessed to be at level 4 of maturity, the average rating of their projects would probably be near 4. However, if several projects are rated at near 4, it does not necessarily mean that the organization has achieved a maturity level of 4.

The viewpoints of client and project team on the success of project are fundamentally different because the former is focused on the deliverables and the latter is focused on the means by which the deliverables are created. This article has presented evaluation principles and foundations that highlight and recognize this difference. Also provided are tools for the client and the team to formalize the way they measure the elements of success of the project. Use of these structures, or ones similar to them, will facilitate communication and cooperation between the client and project team.
team. This should continue throughout the life of the project by quantifying the success attributes from the vantage points of the client and the project team.

Reprint 20570

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