

Project Team Members and Estimates

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INTRODUCTION

This is the third article of the series: Project Management for Team Members (aka Project Followership). Here we will deal with the importance of involving team members in the estimate process and the difficulties they may face during this process.

The topic of estimates is absolutely central in project management. We may have defined the objectives down to the last detail, developed an excellent WBS and correctly assigned the project roles and responsibilities, but if the estimates concerning the costs, schedule and use of resources are wrong we risk embarking on a project that has very little chance of achieving the set objectives.

The estimation process is therefore very important, and project team members play a central role in this regard.

WHY TEAM MEMBERS SHOULD BE INVOLVED IN THE ESTIMATE PROCESS

The vast majority of project management literature suggests involving team members in the estimation process. This is mainly for two reasons:

- Team members usually have the knowledge to provide reliable estimates for tasks they have to carry out;
- If team members are involved in the estimate process their level of commitment will increase thus heightening the probability that the estimates will be respected. In fact, it has been noted that when people are asked to set their own goals (an example would be asking a team member to propose a duration for the task they have to carry out), they tend to focus their energies on achieving those goals. This dual relationship between estimate and performance (the expected performance influences the estimate but the estimate also influences performance) goes by the name of “self-fulfilling prophecy” (Merton 1968). In general self-fulfilling prophecies are those predictions whereby the person making the prediction is also capable of influencing its coming about; if there is a high expectation that the prophecy will occur the individual will behave so that it does. The motivation for this behavior is mainly to enhance or protect reputations and to increase self-esteem.

The involvement of project team members in the estimate process is particularly relevant when the bottom-up estimate technique is selected from among the various

options, that is, team members are asked to estimate the different variables relating to single work packages of the WBS.

DIFFICULTIES TEAM MEMBERS MAY FACE DURING THE ESTIMATION PROCESS

Some points of the estimation process must be taken into careful consideration by the team member who provides the estimates during project planning.

The different degrees of tolerable approximation

A first point that very often creates difficulties, if not even embarrassment, is the fact that all projects are based on estimates and not accurate data and that the approximation and uncertainty of these estimates may even vary within the same project.

This aspect becomes more important the more the level of approximation required in the estimation process moves away from the level of approximation (or certainty) that the team member is used to in performing the non-project work activities (Sampietro 2010).

For instance, those working in fields where the margin of error or accepted approximation is very low (think of mathematics, accounting, measuring with high precision tools) may find it very difficult to have to provide estimates with very high approximation margins and perhaps in a very short time, insofar as it requires a different mindset. On the contrary, those who are used to approximation (those who work on advertising campaigns, creative types in general, teachers, strategists etc.) may be uneasy working on projects that require highly detailed estimates. Moreover, even within the same project there may be times when a high level of detail is required (the planning of schedules in projects with penalties linked to significant delays) and others where approximation can be tolerated (the first budget simulation to understand whether the project makes economic sense).

Optimistic estimates

Some people, when faced with a request to provide estimates, tend to give answers that are too optimistic or that underestimate the use of resources, the time required to perform a project activity or the cost associated with it. It may seem strange, but what may appear reasonable, namely that an expert is capable of providing more reliable estimates than a non-expert, is not always the case (Jørgensen 2002). Experts, and therefore many team members, who precisely on account of their experience are called upon to collaborate in projects, very often tend to provide highly optimistic estimates.

Among the causes of optimistic estimates we can list:

- temporal distance of the activities to be performed (this topic is addressed on page 4).

- focusing on technical aspects (Moløkken and Jørgensen 2005). Some people, especially those with very technical courses of study and professions, base their estimates focusing only on technical problems without considering the influence that other people or other activities may have in the performance of the activity in question;
- overestimating the actual time available (this topic is addressed at the end of this page).

In any case, as stated in the previous paragraph, generating optimistic estimates does not automatically mean not being capable of honoring them.

Pessimistic estimates

While some people tend to provide optimistic estimates, others tend to do the opposite, namely provide pessimistic estimates.

Besides personality traits, such as being a pessimist and therefore assessing the activity as more complex than it actually is, pessimistic estimates are a kind of protection against company practices such as (Goldrat, 1997):

- heavy reprimand if estimates are overshoot. If an organization is in the habit of heavily penalizing the overshooting of estimates, collaborators will tend to encourage very cautious estimates in order to reduce the likelihood that they are not respected;
- the constant game of negotiation. If when a team member provides an estimate the other party systematically responds with a request for its reduction by a certain percentage (20% is typical), collaborators will tend to steer towards pessimistic estimates so that any “discounts” do not have a negative impact on the execution of activities.

Activities far in the future

Very often it is necessary to estimate quantities for activities that must be carried out relatively far in the future (a few months' time). It has been noticed that people react differently when an activity is still a long way off (Roy, Christenfeld, and McKenzie 2005, Loewenstein and Schkade 1999, Mischel, Shoda, and Rodriguez 1989).

In a project environment people:

- fail to take into account future problems that might interfere with the project's completion date (Buehler et al. 1994). A lot of people, in addition to collaborating in more than one project, must also perform other continuous work activities. An activity that has to be performed a long way in the future is unlikely to compete with other activities in the agenda. There is therefore a perception that more time can be dedicated to performing the activity. Gradually as time passes, however, it is highly likely that other commitments will compete with the previously planned activity, thus reducing the actual time

available and therefore making the estimate too optimistic. In the absence of reliable information that makes it possible to realistically estimate the time available for a future activity, a good method is to use actual workloads or those of the same reference period as a basis for the estimate (if the workloads depend on specific time-based events such as seasonal sales, harvest periods in agriculture, university classes for teachers, etc.);

- simplify the characteristics of the activity and therefore its level of complexity. This attitude derives from the difficulty of representing the events that may occur; future activities are seen as not very real and are represented in a simplified manner (Lieberman and Trope 1998). Simplification of the activity's characteristics therefore leads to estimates that are too optimistic;
- overestimate the complexity of the activity. Instead some people tend to overestimate the complexity of future activities, as the future is seen as highly uncertain and therefore highly risky (Norem and Cantor 1986, Showers and Cantor 1984). In this case pessimistic estimates will be obtained. Both overestimating and underestimating the complexity can be counteracted by using contextual information, if available, so as to better visualize the future situation or by using analogy in the case of similar project activities, so as to use past performances as a basis for the forecasts.

The closeness of temporal phenomena

When the historic series are not formalized and analyzed, experience is relied on. Nevertheless, an expert is a person that, in a particular field, has accumulated much knowledge and often experienced situations similar to those to be tackled. Here we wish to bring attention to a problem that non-formalized experience can create. Humans unconsciously tend to give more weight to events that are closer in time (Hillson and Hulett 2004). Let us imagine that the average duration of a task is 3 days but one week ago it took 7 days, the team member will most probably estimate the duration for a new similar task much closer to 7 days than the average of 3 days.

Main activity

It may seem obvious to state that the duration of an activity depends on the tasks it involves. The duration of each specific task being equal, an activity that contains 20 tasks will require more time than an activity that contains 5 (the resources used being equal). Based on this truism, let us reconnect to how activities are very often communicated, described and correlated in order to understand if this may have an impact on the production of estimates.

Essentially, we tend to plan the activity as we perceive it from the standpoint of the tasks included, but there may be a discrepancy between what is perceived and what is actually required (Rossi 2012). In order to provide correct estimates project team members must therefore:

- ask the project manager what actual tasks are included in an activity;

- communicate back to the project manager what tasks are necessary in their opinion to carry out a certain activity, in order to check if the same name means similar things to them;
- ask the project manager, or in any case check during the planning, who the recipients are of the output of the activity in question and what are the incoming inputs, in order to understand if activities to make these handovers more fluid (output in input) are required.

Availability of information

It is normal that, when asked to provide a quick estimate, we base our answer on experience. Unfortunately the duration, cost, and risks of many tasks can be heavily influenced by variables that we have never experienced or we are not so used to experiencing. In these situations asking for additional information is fundamental in order to evaluate if we are still able to provide reliable estimates and/or adjust the estimates based on the new setting. For example, imagine that a team member is asked to provide an estimate for the cost of 2 days of technical training. The team member was used to hiring independent consultants so he provided an estimate of 2000 dollars. Unfortunately the estimate was completely wrong since the training had to be provided by a top notch consultancy firm costing more than 5 times the estimate provided.

Forecasting for other team members

Sometimes a project team member might be required to provide estimates for colleagues dealing with similar issues.

This request is mainly made of project team members considered experts in their field. At first glance the basic idea can be shared: an expert is familiar with the activities to be performed to a higher level of detail and experience than the others and is therefore the most suitable person to provide reliable estimates.

Unfortunately the actual situation is different (Hinds 1999): in fact it has been noted that experts can provide good estimates for themselves and other experts, but they are not capable of providing estimates for people with lower skills. In particular, their estimates tend to be optimistic, thus making it improbable that colleagues will be capable of performing the activities within the time frames set by the expert. The explanation for this phenomenon is that the expert, having now fully metabolized the activity, loses the capacity to imagine the problems that a collaborator with less experience may encounter in performing the tasks; moreover, even if the expert could imagine the problems, he or she would be able to resolve them more quickly than a less experienced collaborator.

CONCLUSIONS

The formulation of estimates with a good level of reliability is a highly critical process as errors in the estimates can influence project performance. Errors in the planning

of schedules and costs, and in the calculation of the absorption of resources, may lead to situations that, depending on the cases, can vary from unpleasant to dramatic.

A central role in the process of formulating estimates is played by project team members who, based on their experiences, should provide reliable information. Unfortunately this does not always happen and the “blame” cannot be attributed to a lack of experience but rather to a lack of knowledge of estimation techniques and the “traps” connected with them.

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