

Cost and Time Estimations – Key Success Factors

A decision to launch a project is based on many factors, two of them being its cost and timeframe. Therefore, costs and time estimations are key to a good decision.

How to perform estimations, what are the steps, the tools, and what does it imply for the project team ?

The estimation process

Like many processes, the estimation process is composed of:

- **Inputs;**
- **Tools and techniques;**
- **Outputs.**

Let's be pragmatic and start from the end: we want a clear view of how much it will cost / take to do the project to support our decision. The decision may be different based on the time and cost data, but the data may also change the scope of the project; the decision is not always a Go or No-Go, but rather a "Go if...". This latter case means that the hypothesis of the project execution might be changed.

The decision is usually "Go if..."

The outputs

So, the **hypothesis** shall be part of the outputs, along with the **value** itself (whether cost or time) and its **uncertainty**.

The hypothesis must include as well the limit of the project, stating clearly what will not be done.

The inputs

Of course, the hypothesis are also part of the inputs of the process, as well as:

- Scope definition
- Contracts
- History of the Project
- ...

In fact, **any information related to the project**.

The Tools and Techniques

The inputs will then run through tools and techniques. Many of them exists, the key point is to always cross-check the outputs by

using two or more tools&techniques whenever possible.

Tools&techniques include:

- Expert judgment: several persons, viewed as experts, will give their thoughts
- Analogous estimating: use previous experience from past projects
- Parametric estimating: use one or more parameters, known for the kind of project being estimated
- Bottom-up estimating: estimate each "box" of the Work Breakdown Structure, and the aggregate all the costs to come up with the project's estimate
- Three-point estimating: estimate the most probable, the optimistic and pessimistic values, and compute the result¹
- Reserve analysis: use the calculation of the contingencies to define the overall estimate
- Cost of quality: calculation of the cost of doing it right at first
- Project management software: specific tools used to estimate projects
- Vendor bid analysis: analysis of quotations from potential vendors
- Group decision-making techniques: a group of persons define the estimates, through Delphi method for example

Key Success Factor #1: Use several tools and techniques

The here-above listed tools and techniques take the inputs and will deliver you outputs. Always challenge the outputs by:

- Reviewing them

¹ Estimate=(Pessimistic + Optimistic + 4xMost Probable) / 6

- Using several tools and techniques
- Changing the inputs to see the evolution of the outputs

Moreover, projects are usually such that one tool or technique will not be sufficient, and one part of the project will be estimated based on past projects, another one using an estimation tool, a third one by expert judgment, and so on....

Several tools and techniques must be used to estimate the project.

Key Success Factor #2: Use your brain !

In the end, the output of the estimation process is not the result of a tool or a technique, but a decision made by a person, using his/her own brain. The estimation process is a decision-making tool for people.

A decision-making tool

Key Success Factor #3: Understand what a “good” estimate is

The aim, of course, is to serve the project and support decision-making by delivering good estimate. But what is a “good” estimate ? The answer to this question comes from the answer to another question: why estimate ? The key point here is to come back to the origin of the estimate and its purpose. Is it to have a ballpark to decide to investigate further or not ? Is it to commit to a firm offer ?

How the estimate will be used dictates the need for accuracy.

Therefore a good estimate is not an accurate one, but one that serves the decision-making process within the allocated timeframe and available resources.

Key Success Factor #4: The right to be wrong

An estimate is just an estimate, nothing more. It comes with its hypothesis and uncertainty, and it is, by definition, unsure. So if the estimate is not reached afterwards, there is nobody to blame. If a project manager starts blaming a team member, the next time the same team member will keep it safe and either overestimate or underestimate, which is not good at all for the decision-making process.

People involved in estimations must accept the right to be wrong.

Key Success Factors :

1. Use several tools and techniques
2. Use your brain !
3. Understand what a “good” estimate is
4. The right to be wrong