

Implementation Effort Estimation: Important Aspects

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A fundamental part of the planning of implementation projects is estimating the efforts required. Regardless of the type of the prospective project, whether writing a script for a database migration or implementing a piece of application software from scratch, often much of the information needed for a detailed effort listing is not available before a project starts. Nevertheless, certain aspects are always helpful to consider during effort estimation.

The best practice aspects presented on this poster will help to generate realistic estimates, even in a situation where only incomplete information or rough requirements are available.

It is a bit like planning a balloon ride, where only basic information is available in advance, but certain rules of thumb can help to successfully plan for your journey.

USE RANGE ESTIMATES

For each task, make three estimates instead of only one: from an optimistic, realistic and pessimistic point of view. Then, calculate a weighted average using these three estimates and an estimate of the variability in the estimates. If you have a sufficiently large number of tasks (20-30), an estimate for the distribution of the sum of effort estimates can be derived, which can help you to assess the variability in the estimate of the total sum of efforts required (for calculation details see [2]).

REMIND YOURSELF THAT SOME TASKS ALWAYS NEED TO BE DONE

Most developers will intuitively focus their estimate on the efforts needed for implementation until the source code commit. They thereby neglect important routine tasks in which they are also involved during the course of a project, such as status meetings, administrative tasks, or (intermediate) deployments in their estimates. Always be sure that no routine tasks were forgotten in the estimate.

ESTIMATE EFFORT BASED ON WORK STEPS REQUIRED TO REACH THE DESIRED RESULT

Don't think only about the size of the desired result (end-product) while doing effort estimation. Always think of all the steps needed get to the desired result, Which might strongly vary with the conditions of the given situation.

REFERENCES:



COMBINE ESTIMATES FROM DIFFERENT SUBJECT MATTER EXPERTS

Ask more than one subject matter expert for independent estimates. If the different experts agree, you will have a higher confidence in the quality of the estimate. If there are large discrepancies in the estimates of different experts, discrepancies should be discussed in order to detect whether the given requirements could be interpreted in different ways, which must be avoided.

BREAK DOWN THE WORK INTO SMALL STEPS

Determine the work needed and break it down into manageable steps, ideally with a maximal size of 1 working day. In general, the smaller the steps, the easier it is to reliably estimate the effort needed to perform the steps. For identifying the steps to be done to implement a software, it is very important to thoroughly understand the scope of the software to be built and to think through the whole process.

AVOID ANNOUNCING ESTIMATES EARLY

People tend to rely heavily on the first piece of information offered (the "anchor") when making decisions [1]. Thus, your initial estimate will always be the one that others will have in mind, even if you need to change the estimate later because you receive new, more detailed information. If your initial estimate is corrected later, this correction will implicitly be compared to the initial estimate. Chances are high that you will unnecessarily disappoint others if your initial estimate was much too low. Always take your time to go into detail and do a proper effort estimate before you quote your first estimate.

