Project Estimator

HELP.SVASAPE

Release 4.6C

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Project Estimator

Definition

The Project Estimator is a tool based on Microsoft Excel, the ASAP Roadmap, the SAP Reference Structure, and the Implementation Guide (IMG) and is used by SAP employees or consultants to estimate the workload, schedules, and costs of SAP R/3 implementation projects.

Use

SAP employees and consultants can perform project estimation using the Project Estimator in any phase of an SAP R/3 implementation project. The length of time it takes to perform project estimation depends on how familiar the user is with the tool and with SAP R/3 implementation procedures, and on the level of detail at which the user is expected to define the project parameters. An initial rough estimation can be completed in one to two hours. The results of project estimation can be downloaded as data extracts or printed, so that the customer can use them in presentations and executive reports.

The Project Estimator calculates:

- Workload and schedules, also known in the tool as "effort and dates" (the number of working days required for implementation tasks and estimated start and end dates)

- Costs (internal/external – also by role)

- Resource requirements (internal/external)

- The allocation of resources for each project role

The above information is calculated for all the implementation project's work packages and phases.

Structure

The Project Estimator uses spreadsheet formulas and default values based on typical implementation projects to convert the user's input values into final result values. The spreadsheet features the following types of tables:

- Results tables
  These tables display calculated and aggregated results. The layout of the results is based on the ASAP Roadmap and its phases and work packages.

- Factor tables
  These are tables where the user defines and checks factors for the project in question.

- Component tables
  These tables display the SAP Reference Structure including scenarios and processes,

Project Estimator

master data and transaction data, and the ASAP Roadmap structure with its phases and work packages.

- Other tables
These tables serve a number of purposes such as, for example, navigating within the spreadsheet and calculating factors.

You **perform project estimation** in 4 steps:

1. You set the project scope using application factors.

2. You determine project, risk, and cost factors

3. You check the results as calculated by the tool and adjust them if necessary.

4. You enter general project data, print the project estimation results, and generate data extracts.

⚠️

The Project Estimator may only be used by SAP employees and consultants. Customers and other third parties may not work with the tool or receive project estimation results in any form other than the data extracts and printouts generated at Step 4.

The Project Estimator is a **tool**. The user is responsible for the final results presented to the customer.

Preparing for Project Estimation

Use

To be able to work with the Project Estimator you need to be familiar with the SAP implementation method, ASAP, and with Microsoft Excel. Please refer to the release notes for Releases 4.5A and 4.6A for information on how to install the Project Estimator.

Integration

The Project Estimator incorporates elements from Microsoft Project, Microsoft Office 97 (particularly Microsoft Excel), and ASAP 4.5/4.6.

To use the tool effectively, you therefore need to be familiar with the following tools and structures:

- Microsoft Excel / Microsoft Office 97
  Microsoft Excel is the tool basis that allows the Project Estimator to perform calculations in a spreadsheet format.

- AcceleratedSAP
  The Project Estimator's results are structured according to the phases and work packages in the AcceleratedSAP Roadmap. The latest versions of the Project Estimator reflect the ASAP 4.5/4.6 Roadmap.

- SAP Reference Structure
  You make use of the SAP Reference Structure when you set the project scope. It supplies important project estimation factors such as the number of processes and functions contained in each of the application components to be implemented. The SAP Reference Structure is fully integrated into the Project Estimator, so it is possible to set the scope right down to the level of individual processes and functions. The Project Estimator always uses the SAP Reference Structure from the matching release.

Features

The Project Estimator assumes the following:

- All the required application components are to be implemented at the same time.

- The project team is to be trained in-house.

- SAP implementation tools (ASAP, the SAP Reference Structure, the IMG) are to be used as recommended by SAP.

- The workload ("effort") calculated for end user training only takes the trainers' preparation and teaching time into account. The time that end users will spend in training is not calculated.

- The project coordination workload is calculated and displayed per phase so that the individual phases can be kept distinct from each other.

- External training courses, hardware costs, and software costs are not taken into account in project estimation.

Preparing for Project Estimation

Activities

To install the Project Estimator, proceed as follows:

1. In your Microsoft Windows Explorer, double-click on the Project Estimator to open it.

   Contact your First Level Support for the Project Estimator password.

2. Choose *File -> Save as...* and save the program to your local directory C:\Program Files\Microsoft Office\Templates\Spreadsheet Solutions as *Project Estimator.XLT.*

3. Reopen the Project Estimator by choosing *File → New → Spreadsheet Solutions* in Microsoft Excel. This ensures that you are always working in a copy of the original.

   The name of the (original) Project Estimator file indicates the SAP R/3 Release to which it corresponds. If the file name is SRM46A, for example, the version of the Project Estimator that you have corresponds to the SAP R/3 Release 4.6A.

Working with the Project Estimator

Use

The Project Estimator is a spreadsheet tool based on Microsoft Excel. It is therefore essential that you have a basic understanding of how Microsoft Excel works. The Project Estimator also has its own navigation and layout features, which are described below.

Features

You perform project estimation in four structured steps, starting with entering data in tables as the basis for estimation and following up with checking the results as calculated by the tool. The main layout features of the Project Estimator are tables, buttons, and a footer displaying a set of tabs.

- **Tables**

    - The tables can contain red, green, and blue columns and cells. You can only make entries in the red and green cells. The values displayed in the blue cells are calculated by the tool using formulas and must not be changed.

    - Whenever you overwrite default values in the Project Estimator, make sure you deselect the italic text format afterwards so that you can always see later where you entered project-specific values.

    - Once you have made all the entries you need to make in a table, choose (or F9) to calculate or update other values on the basis of your changes.

- **Buttons**
  There are buttons under or to the right of some tables to make it easier for you to navigate to other tables. Buttons can take you directly from overview tables to details tables and back again, for example. Pressing in any view takes you straight back to the Project Estimator initial screen.

- **Footer with tabs**
  The tabs in the footer also simplify navigation. You can switch from any view to any other view by clicking on the relevant tab, or you can return to the Project Estimator initial screen by clicking on the *Start* tab.

Setting the Project Scope

Purpose

The first step in project estimation is to set the project scope, that is, to define which R/3 application components and processes are to be implemented in the company. You can select these components and processes at a number of Step 1 levels:

- Level 1 = SAP R/3 application components

- Level 2 = Subcomponents

- Level 3 = Processes

You can also set a process view of the project scope (for documentation purposes, although not for use in project estimation itself) by selecting specific enterprise areas (Level 1) and scenarios (Level 2).

At Level 3 of component selection (processes and functions) you find a number of interview questions that you can ask the customer. The answers will help you assess how complex the implementation of that application component will be at that customer. The level of complexity you choose has an effect on the Project Estimator's calculations of the time and effort required for the project.

When setting the project scope, you also need to specify the number of active users of each SAP R/3 application component, and the number of permanent interfaces, report programs, forms, and enhancements that need to be created during the project. The Project Estimator supplies default values for each application component, based on accumulated project experience, but you can overwrite any of these with project-specific values.

Prerequisites

You know which application components (Level 1) are to be implemented.

Process Flow

1. You set the project scope

   a. from a component perspective [Page 11]

   b. optionally and for documentation purposes only from a process perspective [Page 14].

2. You check or specify the number of users [Page 16].

3. You check or specify the number of permanent interfaces required [Page 17].

4. You check or specify the number of extra report programs required [Page 18].

5. You check or specify the number of forms required [Page 19].

6. You check or specify the number of enhancements required [Page 20].

Result

The project scope has been set. You will either have done this yourself or checked the default values and decided to leave them as the basis for project estimation.

Setting the Project Scope from a Component Perspective

Use

The project scope is the starting point for project estimation. The first step in setting the project scope is to set the application components that are to go live together at the end of the implementation project to "in scope". An optional additional step is to set specific enterprise areas and scenarios to in scope, for documentation purposes only.

Procedure

On the Project Estimator initial screen, choose *Step 1 - Execute.*

Selecting the Application Components to be Implemented (Level 1)

1. Enter a *Y* in the *In Scope* column next to all the application components that you want to set to in scope.

2. Choose 🖩 to have the Project Estimator calculate an initial set of project scope values.

Selecting the Subcomponents to be Implemented (Level 2)

1. To set the project scope in more detail, at the level of subcomponents or processes, choose *Select Components Level 2*.

2. All the subcomponents of the application components you selected at Level 1 are displayed as in scope at Level 2 by default (*In Scope* = *Y*). You can now take any unwanted subcomponents out of the project scope.

   − Go to an application component set to in scope. Click on the (+) icon to the left of the application component to expand the subcomponent tree.

   − Enter an *N* in the *In Scope* column next to the subcomponents that you want to take out of the project scope.

   − Choose 🖩 to have the Project Estimator update its project scope values.

3. If you wish to undo entries that you have made at this level, choose *Reset Selection.*

Setting the Project Scope in More Detail

1. To set the project scope in even more detail, at the level of processes and subcomponents of the subcomponents you just selected, press the *Select Details* button to the right of the relevant application component.

2. All the processes and subcomponents of the subcomponents you selected at Level 2 are displayed as in scope at Level 3 by default (*In Scope* = *Y*). You can now take any unwanted Level 3 subcomponents and processes out of the project scope.

   − Go to a subcomponent that was set to in scope at Level 2. Click on the (+) icon to the left of the subcomponent to expand the Level 3 subcomponent and processes tree.

   − Enter an *N* in the *In Scope* column next to the Level 3 subcomponents and processes that you want to take out of the project scope.

   − Choose 🖩 to have the Project Estimator update its project scope values.

Setting the Project Scope from a Component Perspective

3. At the end of the Level 3 list for each application component you find a number of questions asking for clarification on the company's business processes and organizational structure (for that component). These questions and your answers are included as additional information in the final printed version of the project estimation.

4. When you get to the end of the list of questions, you can overwrite the default value for the level of application component complexity using your own assessment of how complex the implementation of that application component will be at that customer.

>
> If the customer has complex, multilevel business processes, a large number of extra programs to write, and so on, you can ensure that this is taken into account in project estimation by entering a higher level of complexity than the default. The level of complexity can only be changed in the cell at the end of the list of questions at Level 3.
>
> You can enter *L = Low*, *M = Medium*, or *H = High*. The levels of complexity defined for the individual application components are weighted and converted into an implementation project *complexity factor* in the project factors and at the application component level.

5. If you wish to undo entries that you have made at this level, choose *Reset Selection.*

Navigation Options

- If you are setting the project scope in detail at Level 3, you do not need to keep navigating back to Level 2 to get to Level 3 of the next application component. You can go straight to Level 3 of another application component by clicking on the relevant tab in the footer.

- You can choose *Overview Level 2* to go back from Level 3 to Level 2.

- You can choose *Back to Level 1* to go back from Level 2 to Level 1.

Result

The columns A00 – A06 at Level 1 now contain values calculated by the Project Estimator (which you must not overwrite) as follows:

- *Degree of utilization (in %)* (A00): The degree of utilization indicates what percentage of the R/3 functionality is actually going to be implemented in the components selected. If you did not make any entries at Level 2, the Project Estimator supplies a percentage value typical for implementation projects in general.

- *Level of Complexity* (A01): This factor indicates the customer's business process complexity. The values displayed here can be *low*, *medium*, and *high*. The factor is derived from the level of complexity specified at the end of the questions at Level 3 and must not be overwritten here.

- *Business Processes* (according to the SAP Reference Structure) (A02): This column displays the number of business processes set to in scope.

- *Subcomponents* (according to the SAP Reference Structure) (A03): This column displays the number of subcomponents set to in scope.

- *Master Data Objects* (A04): This column displays the number of master data objects in the project scope. This number is determined on the basis of the components and processes you selected.

- *Transaction Data Objects* (A05): This column displays the number of transaction data objects in the project scope. This number is determined on the basis of the components and processes you selected.

- *IMG Activities* (A06): This column displays the number of IMG activities that have to be performed to configure an R/3 System with the constellation of components and processes you have specified.

The application components, subcomponents, processes, master data, and transactions included in the project scope are all based on the elements of the relevant release-specific SAP Reference Structure.

Documenting the Project Scope (Process Perspective)

Use

You can select enterprise areas and scenarios in the bottom table of the Level 1 sheet to document the project scope from a process perspective. The Project Estimator uses the application components you just selected in the top Level 1 table to propose enterprise areas that could be in scope and to supply default values for them, which you can check and change as necessary.

Prerequisites

You have selected the application components [Page 11] that you wanted to set to in scope and you have returned to Level 1, if necessary.

Procedure

1. The process view of the project scope is displayed underneath the component view at Level 1. Check the default values supplied by the Project Estimator. Enterprise areas that have been set to in scope have a *Y* next to them in the *Selection of Enterprise Areas* column. Make changes as required in this column to define which enterprise areas you wish to set to in scope.

2. To set the project scope in more detail, at the level of scenarios and processes, choose *Select Scenarios*.

   – Go to an enterprise area set to in scope. Click on the (+) icon to the left of the enterprise area to expand the scenario tree.

   – Enter an *N* in the *In Scope* column next to the scenarios that you want to take out of the project scope.

   – Choose 🖩 to have the Project Estimator update its project scope values.

      ➡

      – If you wish to undo entries that you have made at this level, choose *Reset Selection.*

      – You can choose *Back to Level 1* to return to Level 1.

      – By double-clicking on *Details of the Process View*, you can call up the R/3 enterprise area and scenario documentation.

Result

The columns B00 and B01 at Level 1 now contain values calculated by the Project Estimator (which you must not overwrite) as follows:

1. *Degree of utilization (in %)* (B00). If you did not make any entries at the scenarios and processes level (Level 2), the Project Estimator supplies a percentage value typical for implementation projects in general.

2. *Number of scenarios* (B01): The number of scenarios that the Project Estimator calculates are to be implemented in the customer's R/3 System.

Defining the Number of Users

Use

You need to estimate the number of users that will ultimately be working in each of the R/3 application components included in the project scope. The Project Estimator requires these values to calculate the time and effort that is needed for end user training, for example.

Prerequisites

You know or can roughly estimate the planned number of R/3 users at the company.

Procedure

The Project Estimator supplies default values based on a typical implementation project. If you have more precise figures relating to this particular project, you can enter them as follows:

1. In the *User* column (A07) of the *Component View* table at Level 1, overwrite the default values for every application component for which you wish to change the number of users.

2. If necessary, enter the total number of users that you estimate will be working in the R/3 System in the *Active application factors* cell at the bottom of the *User* column.

3. Whenever you overwrite default values, make sure you deselect the italic text format afterwards so that you can always see later where you entered project-specific values.

Result

The total number of R/3 users planned for each application component has been defined.

Defining the Number of Permanent Interfaces

Use

You need to define the number of permanent interfaces to non-SAP systems (input/output) that need to be programmed for each of the R/3 application components included in the project scope. The Project Estimator uses these values to calculate the impact of programming activities on the project costs and schedules.

If you do not want permanent interfaces to be taken into account in project estimation, you can exclude them by entering an *N* in the cell at the bottom of column A08 of the *Component View* table at Level 1.

Procedure

The Project Estimator supplies default values based on a typical implementation project. If you have more precise figures relating to this particular project, you can enter them as follows:

1. In the *Interfaces* column (A08) of the *Component View* table at Level 1, overwrite the default values for every application component for which you wish to change the number of permanent interfaces.

2. If necessary, enter the estimated total number of permanent interfaces in the *Active application factors* cell at the bottom of the *Interfaces* column.

3. Whenever you overwrite default values, make sure you deselect the italic text format afterwards so that you can always see later where you entered project-specific values.

> You can press the button *I* at the bottom of the *Interfaces* column to go to the *Scope Document* for the list of permanent interfaces. From there you can press the *Back to Level 1* button to return to Level 1.

Result

The number of permanent interfaces to be programmed for each application component has been defined.

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Defining the Number of Extra Report Programs Required

Defining the Number of Extra Report Programs Required

Use

You can define the number, if known, of extra report programs that will have to be written to supplement those provided as standard with the R/3 application components included in the project scope. You do not have to make any entries of your own here if the precise figures are not yet known. The Project Estimator uses these values to calculate the impact of programming activities on the project costs and schedules. Any values you enter here should not include the required number of variants of standard SAP reports, as this work does not need to be taken into account in project estimation.

If you do not want extra report programming work to be taken into account in project estimation, you can exclude it by entering an *N* in the cell at the bottom of column A09 of the *Component View* table at Level 1.

Procedure

The Project Estimator supplies default values based on a typical implementation project. If you have more precise figures relating to this particular project, you can enter them as follows:

1. If you do want extra report programming work to be taken into account in project estimation, enter a *Y* in the cell at the bottom of column A09 of the *Component View* table at Level 1.

2. In the *Reports* column (A09), overwrite the default values for every application component for which you wish to change the number of extra report programs required.

3. If necessary, enter the total number of extra report programs that you estimate will have to be written in the *Active application factors* cell at the bottom of the *Reports* column.

4. Whenever you overwrite default values, make sure you deselect the italic text format afterwards so that you can always see later where you entered project-specific values.

> You can press the button *R* at the bottom of the *Reports* column to go to the *Scope Document* for the list of extra report programs required. From there you can press the *Back to Level 1* button to return to Level 1.

Result

The number of extra report programs to be written for each application component has been defined.

Defining the Number of Forms Required

Use

You need to define the number of forms that have to be adapted from standard SAP forms or created from scratch for each of the application components included in the project scope. The Project Estimator uses these values to calculate the impact of programming activities on the project costs and schedules.

If you do not want forms to be taken into account in project estimation, you can exclude them by entering an *N* in the cell at the bottom of column A10 of the *Component View* table at Level 1.

Procedure

The Project Estimator supplies default values based on a typical implementation project. If you have more precise figures relating to this particular project, you can enter them as follows:

1. In the *Forms* column (A10) of the *Component View* table at Level 1, overwrite the default values for every application component for which you wish to change the number of forms to be adapted or created.

2. If necessary, enter the total number of forms that you estimate will have to be adapted or created in the *Active application factors* cell at the bottom of the *Forms* column.

3. Whenever you overwrite default values, make sure you deselect the italic text format afterwards so that you can always see later where you entered project-specific values.

> You can press the button *F* at the bottom of the *Forms* column to go to the *Scope Document* for the list of forms. From there you can press the *Back to Level 1* button to return to Level 1.

Result

The number of forms to be adapted from standard SAP forms or created from scratch for each application component has been defined.

Defining the Number of Enhancements Required

Use

You need to define the number of enhancements (customer-specific tables, transactions, authorization objects, and so on) that have to be programmed for each of the application components included in the project scope. The Project Estimator uses these values to calculate the impact of programming activities on the project costs and schedules.

If you do not want enhancements to be taken into account in project estimation, you can exclude them by entering an *N* in the cell at the bottom of column A11 of the *Component View* table at Level 1.

Procedure

The Project Estimator supplies default values based on a typical implementation project. If you have more precise figures relating to this particular project, you can enter them as follows:

5. If you do want enhancement programming work to be taken into account in project estimation, enter a *Y* in the cell at the bottom of column A11 of the *Component View* table at Level 1.

6. In the *System enhancements* column (A11), overwrite the default values for every application component for which you wish to change the number of enhancements required.

7. If necessary, enter the estimated total number of enhancements in the *Active application factors* cell at the bottom of the *System enhancements* column.

8. Whenever you overwrite default values, make sure you deselect the italic text format afterwards so that you can always see later where you entered project-specific values.

    You can press the button *E* at the bottom of the *System enhancements* column to go to the *Scope Document* for the list of enhancements. From there you can press the *Back to Level 1* button to return to Level 1.

Result

The number of enhancements to be programmed for each application component has been defined.

Determining Project, Risk, and Cost Factors

Purpose

In this step you determine project, risk, and cost factors for the implementation project. The Project Estimator supplies default values based on accumulated project experience, but you should change these values wherever appropriate for the project in question. The project factors are used to calculate the following:

- The coordination and quality assurance workload ("effort") associated with the project

- Key dates for the project

- The length of the project

Prerequisites

You have completed Step 1 (setting the project scope).

Process Flow

You proceed as follows:

1. You define general project factors [Page 22].

2. You determine project factors for the Realization Phase [Page 25].

3. You determine role distribution (the ratio of internal to external roles) [Page 26].

4. You determine cost factors [Page 28].

5. You define contingency factors [Page 30] or have the Project Estimator calculate them using risk factors that you define [Page 31].

Result

All project, risk, and cost factors required by the Project Estimator to estimate project costs and schedules both with and without the addition of contingency have been determined.

Defining General Project Factors

Use

You define general project factors to give the Project Estimator an indication of the general dimensions of the project. General project factors include the size of the project, the number of project team members, and the number of organizational units affected by the project.

The general project factors you define influence how the Project Estimator calculates:

- the workload ("effort") associated with the project

- project key dates and the overall project length

- what costs are generated and how

- the number and type of project roles

The red values supplied by the Project Estimator are all default values that you can change wherever you feel it is necessary for the customer or project in question. Whenever you overwrite default values, make sure you deselect the italic text format afterwards so that you can always see later where you entered project-specific values.

Procedure

Discuss each of the general project factors with the customer and explain the effect of the factors on the Project Estimator's calculations. By positioning the cursor on the red triangle in the top right-hand corner of a cell in the *Project Factors* column, you can display quick info text that describes the possible entries for that factor.

- **Size of company (P01)**
  The size of the company influences the Project Estimator's calculation of the workload associated with the implementation project. The criterion by which you judge the size of a company is its annual sales.

- **Type of project (P02A)**
  The type of project also influences the Project Estimator's calculation of the workload. Rollout projects based on a "preconfigured" template, for example, are more straightforward than implementation projects involving Business Reengineering.

- **Template factor for rollout projects (P02B** *Degree of utilization***)**
  This factor only applies to rollout projects. It indicates the extent to which a rollout project can simply use the preconfigured template settings. The more template settings that can be used in the project, the smaller the estimated workload will be.

- **Company organizational units (P03)**
  This is the number of organizational units that are affected by the implementation project and that therefore have to work together closely and come to a consensus at certain stages of the project (for example, when the blueprint is being drawn up). These organizational units could be departments, plants, or countries, for example, or a combination of different organizational units is possible. The more organizational units are affected by the implementation project, the more time and effort is needed to coordinate and synchronize teamwork.

- **Start or end date of project (P04A)**
  Here you specify either the start or end date of the project, depending on whether you are going to specify forward or backward scheduling for the *Type of scheduling* factor. Ensure

that the end date is *after* the planned going-live date, as the implementation project is not over until post-production-startup activities and quality assurance are complete.

> There are three date formats available for you to choose from. To choose a format, press one of the three buttons (*dd.mm.yyyy*, *mm.dd.yyyy*, *yyyy.mm.dd*) to the right of the *Project Factors* table.

- **Type of scheduling (P04B)**
  Forward scheduling calculates the end date of the project based on the start date you entered in cell P04A. Enter *V* for this type of scheduling. Backward scheduling calculates the start date of the project based on the end date you entered in cell P04A. Enter *R* for this type of scheduling.

- **Number of working days per year (P05)**
  The number of working days per year that are actually set aside for the project is an important factor in scheduling. You should specify the average number of working days that the project team can devote to the project per year. This figure will typically be somewhere between 160 and 220 working days.

- **Full-time core team members in Phases 1-5: Project Preparation, Business Blueprint, Realization, Final Preparation, Go Live & Support (P06)**
  This is the number of full-time project team members (including both internal and external team members) that are available for each Roadmap Phase of the project. You should enter these figures in full-time equivalents; in other words, each team member that only works part-time on the project should be entered as the appropriate fraction of a full-time team member.

> There is no way of differentiating between internal and external team members or team members with different roles here.

- **Multinational Project (P07)**
  This indicates whether the project's team members all come from the same country or from different countries. In multinational projects, communication can be complicated by geographical separation, the language barrier, or by cultural differences.

- **Number of people – project team training (P08)**
  Enter here the number of project team members that require Phase 2 and Phase 3 training. The days that need to be set aside for training are then duly taken into account in project estimation. Note that the Project Estimator assumes that the project team is going to be trained in-house.

- **Share of project coordination in % (P09)**
  This indicates the percentage of the overall project workload ("effort") taken up by project management work packages (see the worksheet Effort and Dates [Page 35]).
  Take a look at the effort determined for the individual work packages to ensure that the value displayed for this factor is correct.

> The Project Estimator uses a formula to calculate this value. You should only change it if absolutely necessary.

- **Share of quality inspection in % (P10)**
  This indicates the percentage of the overall project workload ("effort") taken up by work

Defining General Project Factors

packages with a quality assurance element (see the worksheet Effort and Dates [Page 35]). Take a look at the effort determined for the individual work packages to ensure that the value displayed for this factor is correct.

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> The Project Estimator uses a formula to calculate this value. You should only change it if absolutely necessary.

- **Complete estimation of whole Roadmap (P11)**
  You can enter *Y* or *N* here.

  − Enter *Y* if all work packages are to be taken into account when the project effort is estimated.

  − Enter *N* if only the most important work packages are to be taken into account. (In this way, *project administration* or *quality assurance* work packages, for example, could be disregarded when the project effort is estimated.) If you choose this option, be careful to ensure that enough work packages will be taken into account. You can add work packages to those already selected, if necessary.

  🧭

  > Enter *Y*. When you reach Step 3 of the Project Estimator you can simply deselect individual work packages in the Effort and Dates [Page 35] table, if you wish.

Average level of complexity of business processes (P12)
This indicates the complexity of the company's business processes. The Project Estimator determines this value on the basis of the complexity of the relevant application components.

The following values are possible:

- 1 = low complexity

- 3 = medium complexity

- 5 = high complexity

The value appears in blue and must not be overwritten here. You can only change the complexity factor in the list of questions for each application component [Page 11] (Step 1; Level 3).

Result

The general project factors that influence project estimation have been defined.

Determining Project Factors for the Realization Phase

Use

A major part of the Realization Phase is taken up by programming activities such as writing programs to allow other systems to interface with and transfer data to R/3, writing report programs and enhancements, and creating forms. In this step you can specify the average number of working days it will take to realize each type of object.

Prerequisites

If you want the Project Estimator to estimate workload, schedules, and costs for realizing permanent interfaces, report programs, forms, and enhancements (factors A08–A11), you must first select these factors as active application factors in Step 1 – Level 1 by entering a *Y* in the *Active application factors* cell in the relevant columns. You must also have specified in the same table the number of objects of each type to be realized per application component.

Procedure

Assess the complexity of each of the objects to be realized and enter the average number of working days it will take to realize each type of object.

Result

The Project Estimator calculates the length of time it will take to realize each object type by multiplying the number of objects to be realized by the average number of working days it will take to realize them.

Project Roles – Determining Internal/External Role Distribution

Use

There are various project staff functions (or "roles") that must be represented in any SAP R/3 implementation project team. Optimal staffing of these roles and close interaction between them are major success factors for the project.

The *Role distribution* table indicates in percent the degree to which each project role can be fulfilled by company employees (in the *Internal* column) and the degree to which the role must be outsourced to external consultants (in the *External* column). An internal and external "day rate" (per diem fee) is also defined for each role. Together with the ratio of internal to external roles, these day rates allow internal and external project staff costs to be calculated.

The following roles must be represented in every implementation project team:

- *Project management* (PM)
  Tasks: project coordination, project administration, project controlling, quality assurance, method support, etc.

- *Business Processing* (BP)
  Each application component implemented should have its own Business Processing role, whose tasks include:

  - Defining processes

  - Configuring the application component (Customizing)

  - Integration testing

  - End user training and support

- *Technical implementation/support* (TS)
  Tasks: system administration, technical support

- *Programming* (PR)
  Tasks: writing program code necessary for SAP R/3 implementation (enhancements and report programs, and programs to allow other systems to interface with and transfer data to R/3). This role is only relevant in the Realization phase (Phase 3).

The percentage of the role workload that you must define as external depends entirely on how heavily the company concerned will have to rely on external consultants during the implementation project. The more relevant expertise and experience the company has accumulated in-house and the more time that the company's own employees can devote to the implementation project, the less project work the company will need to outsource. The following are typical values for the percentage of project work outsourced:

- 10-20% - external project team members provide Coaching Support only

- 20-40% - external project team members provide Coaching/Doing Support

- 40-60% - external project team members provide Doing Support

- 60-90% - external project team members provide Full Support or have been put in charge of the project

Procedure

Wherever a red dot appears after the *External* column of the *Role distribution* table, you should check the internal/external ratio for the role in question and change the value in the *External* column if necessary.

1. To change the ratio of internal to external for a role, overwrite the percentage value in the *External* column.

2. Whenever you overwrite default values, make sure you deselect the italic text format afterwards so that you can always see later where you entered project-specific values.

3. Choose ▦ to update other values in line with the changes you have made.
   In this case, this means that percentage values in the *Internal* column are adjusted.

Result

In the blue *Effort Results* table you can see the number of work days in total (*Work days* column) and the number of work days per week (*WD/Week* column) that the Project Estimator has calculated that external consultants will need to spend on the relevant project role. Two sets of figures are calculated: one with and one without contingency.

Determining Cost Factors

Use

Day rates (per diem fees) and other cost elements must be defined for each role so that internal and external costs can be calculated.

Internal day rates are typically set at around $500. For external day rates, please see the official price lists.

Prerequisites

You know or can make a rough estimate of internal and external day rates.

Procedure

1. Enter the relevant currency in the *Currency* field.

2. Enter the internal day rates for each role in the *Customer* column. Internal day rates should be all-inclusive, so you should take all trip costs, expenses, and any other incidental costs into account.

    Whenever you overwrite default values, make sure you deselect the italic text format afterwards so that you can always see later where you entered project-specific values.

3. You can calculate total external day rates per role in a number of different ways:

    –   Overwrite the default value for the hourly rate in the *Rate/Hour* column.
        The Project Estimator automatically calculates the day rate (based on eight working hours) and the trip costs (*Travel* column).

    –   Overwrite the default SAP consultant category in the *Category* column.
        The Project Estimator determines the hourly rate. (This feature is based on German consultants' rates. You would have to adjust the formula to reflect the rates for consultants in other countries.)

    –   Overwrite the default values in the *Rate/Hour*, *Work*, *Travel*, and *Expenses* columns.
        The Project Estimator derives a total from these cost elements and displays it in the *Consulting* column.

    The consulting costs for the SAP Project Review Service are calculated in exactly the same way.

4. If you plan a two-day review as part of the SAP Project Review Service, enter *Y* in the *two day agenda* field (that is, the field in the *Customer* column). If you want written reports on the project review findings, enter *Y* in the *with written reports* field (that is, the field in the *Consulting* column).

5. Choose ▦ to update other values in line with the changes you have made. In this case, this means that the day rates in the *Customer* and *Consultant* columns are recalculated to reflect your changes.

Result

Internal day rates are defined for each role. The external day rates for each role are calculated on the basis of the cost element values entered in the *Work*, *Travel*, and *Expenses* columns.

Determining Contingency Factors

Use

Contingency factors are used to build a "safety buffer" of a specified size into the project schedule, the project budget, or the project workload, to allow for unexpected or unforeseen events or situations that arise during the project.

You can either enter contingency factors directly yourself or have the Project Estimator calculate them for you using the risk factors.

1. Contingency for management and quality assurance effort:
   This factor has an impact on all Roadmap work packages relating to project management and quality assurance. The contingency factor allows you to plan some leeway for unforeseen events or situations and forms the basis for "worst case scenarios" as projected by the Project Estimator.

2. Contingency for work packages effort:
   This factor has an impact on all Roadmap work packages *not* relating to project management and quality assurance. The contingency factor allows you to plan some leeway for unforeseen events or situations and forms the basis for "worst case scenarios" as projected by the Project Estimator.

Procedure

- SAP recommends that you have the Project Estimator calculate the contingency factors for you using risk factor values that you have defined. Proceed as follows:

  a. Define values for each of the risk factors in the *Risk Factors* table. Please see:
     Assessing Risk Factors [Page 31].

  b. Choose *Determine Contingency* to have the Project Estimator calculate the contingency factors.
     The contingency factors calculated by the Project Estimator are displayed in the *Contingency Factors* table.

- If you want to enter the contingency values directly yourself, proceed as follows:

  a. Enter the contingency value for project management and quality assurance in the *Contingency for management and quality assurance effort* field.

  b. Enter the contingency value for work packages in the *Contingency for work packages effort* field.

Result

Project costs, schedules, and workload are estimated both with and without the addition of contingency.

Assessing Risk Factors

Use

The Project Estimator uses your assessment of the project's risk factors to calculate "worst case" schedules and costs for the project. Your assessment of the risk factors forms the basis for the contingency factors, which are the percentage values by which schedules and costs estimated for a smooth-running project are increased to take risk factors into account.

There are no fixed rules governing the assessment of risk factors. You can see the impact of your risk factor assessment on the contingency and therefore on the estimated project effort in the Effort and Dates [Page 35] table. A contingency factor of approximately 20 – 40 % is typical for an implementation project.

> To help you in your assessment, each risk factor is accompanied by a question. If the answer to the question is a categorical "no", the risk is high and you must enter the highest possible value, which is 1.0. If you can answer the question with a categorical "yes", the risk is low and you can enter a lower value. You can enter values between 0.0 and 1.0.

Procedure

Take time to discuss the project risk factors with the customer in detail. These factors are not just a set of values used to determine contingency factors in the Project Estimator. They are important considerations in their own right and can have a decisive influence on the overall success of the project. The risk factors fall into three categories: project tools risks; project management risks; and project team risks.

Whenever you overwrite default values, make sure you deselect the italic text format afterwards so that you can always see later where you entered project-specific values.

1. Enter a value between 0.0 and 1.0 for the following risk factors in the *Risk Factors* table.

    –   *Project resources & tools* (use of SAP Roadmap planned?)
        This factor has an impact on the project management contingency factor for all work packages and phases. Using the SAP Roadmap during implementation reduces risk levels, as all the activities that have to be performed during a standard implementation project are fully structured and documented in the Roadmap.

    –   *Project resources & tools* (use of other SAP project tools planned?)
        This factor has an impact on the project management contingency factor for all work packages and phases. Using project planning and monitoring tools during implementation reduces risk levels.

    –   *Project resources & tools* (use of SAP Reference Structure planned?)
        This factor has an impact on the project management contingency factor for all work packages and phases. Using the SAP Reference Structure during implementation reduces risk levels, as the SAP Reference Structure is the definitive implementation structure containing every single scenario and process available in the standard SAP software.

Assessing Risk Factors

– *Project management* (SAP experience?)
This factor has an impact on the project management contingency factor for each phase.
If project management already has SAP project experience, risk levels are lower.

– *Project management* (project experience?)
This factor has an impact on the project management contingency factor for each phase.
If project management already has project experience, risk levels are lower.

– *Project management* (available 100% of the time for this project?)
How much time can project management devote to this project? Can decisions be made
quickly? This factor has an impact on the contingency factor calculated for the
coordination and synchronization of teamwork.

– *Importance of project* (seen as mission-critical within the company?)
An implementation project with "mission-critical" status in the company enjoys greater
recognition than a lower priority project and is therefore monitored more closely and
assigned further resources if necessary. This factor has a direct impact on the
contingency factor calculated for the coordination and synchronization of teamwork.

– *Project team* (low number of project teams?)
This factor has an impact on the contingency factor calculated for the coordination and
synchronization of teamwork. The smaller the number of subprojects and therefore
project teams, the less time and effort is involved in coordinating and synchronizing the
project as a whole.

– *Project team* (optimal role assignment?)
This factor has an impact on the project management contingency factor for all work
packages and phases.
Have all the project roles been filled with experts in the relevant fields? Have all the team
members' skills been put to their optimum use? Have all employees with key specialist
knowledge been included in the core team? Is the team capable of making decisions?

– *Project team* (SAP experience?)
This factor has an impact on the project management contingency factor for all work
packages and phases.
Do the project team members have SAP experience? If the team members are already
familiar with SAP concepts and terminology when the project begins, risk levels are
lower.

– *Project team* (do team members have project experience?)
This factor has an impact on the project management contingency factor for all work
packages and phases.
Do the project team members have experience of project work? Are they familiar with
project work methods, rules, and potential pitfalls?

– *Project team* (team members available 100% of the time?)
This factor has an impact on the contingency factor calculated for the coordination and
synchronization of teamwork. The greater the overlap between the times that the various
team members are available for the project, the less time and effort is needed to
coordinate and synchronize teamwork.

– *Scope of project* (only one location for project processing?)
This factor has an impact on the contingency factor calculated for the coordination and
synchronization of teamwork. The more locations involved in the project, the more time
and effort is needed to coordinate and synchronize teamwork.

– *Project aim* (no replacement of existing systems?)
  This factor has an impact on the project management contingency factor for all work packages and phases.
  If the aim of the SAP implementation project is to install a new system to replace (rather than simply to complement) the customer's existing solution, risk levels are higher. The project team has to ensure that the transition from the existing system to the SAP solution is as smooth as possible and takes place on a definite, prearranged date. Programs also have to be written to enable the customer's systems to interface with and transfer data to the R/3 System.

– *Project aim* (no business process reengineering?)
  This factor has an impact on the project management contingency factor for all work packages and phases. If the SAP implementation project is to be accompanied by comprehensive business process reengineering, risk levels are higher.

2. Once you have defined values for all the risk factors, choose *Determine Contingency* to have the Project Estimator calculate the contingency factor.
   The contingency factor is displayed in the *Contingency Factors* table.

   Once the Project Estimator has calculated the contingency factor, it flags risk factors with a likelihood of occurring of 50% or more with a bomb symbol in the *Active* column of the *Risk Factors* table.

3. Choose ⬅ to return to the initial screen. There choose *Step3 – Execute* to proceed to the next step: checking the Project Estimator's results.

Checking the Results

Use

Estimates of costs and time scales for implementation projects are often subjected to minute (and sometimes critical) scrutiny. There is sometimes a very fine line between an attractive project estimate (from the customer's point of view) and a credible one.

You must check the Project Estimator's results. If you need to make changes, you must go back and repeat Steps 1 and 2. Project estimation is an iterative process.

⚠️

You are responsible for the project estimation results. It is therefore in your interests to check the results generated by the Project Estimator very thoroughly before you publish them in your name.

Procedure

Check the following results tables, which all display results both with and without the addition of contingency:

1. Check the Effort and Dates tables [Page 35]
2. Check the Distribution of Effort tables [Page 38]
3. Check the Distribution of Costs tables [Page 39]
4. Check the Project Organization (Roles) tables [Page 41]

If you need to make changes, go back and repeat Steps 1 and 2.

Result

Once you have checked all the tables, you can

- add the general project data [Page 43].
- extract [Page 44] and print [Page 46] the final project estimation results.

Checking the "*Effort and Dates*" Table

Use

The *Effort and Dates* table provides a broad overview of time scales for the project.

The overview table on the *Overview of Results* sheet displays the following values:

- The number of working days required for each phase of the ASAP Roadmap (*Work days*)

- The start and end date for each phase of the ASAP Roadmap (*Start/Finish*)

- The total length of the implementation project in working days (*Duration in work-days*)

- The total length of the implementation project in calendar months (*Duration in months*)

- The contingency factor (*Contingency*)

By pressing buttons under the overview table you can go to the following other tables:

- Details: Displays the same data as in the overview table, but for each work package in the ASAP Roadmap

- Workplan: Displays a plan/actual comparison

- Overview of tables

The *Effort and Dates* table displays numbers of working days. At the details level, you can change the estimated number of working days required for individual work packages or deselect individual work packages entirely.

Procedure

Checking the Values in the *Effort and Dates* Table

Check the results displayed at the overview level of the *Effort and Dates* table. These are as follows (with and without the addition of contingency):

- The number of working days required for each phase of the ASAP Roadmap

- The start and end date for each phase of the ASAP Roadmap

- The total length of the project in working days and calendar months.

Changing the Values for Individual Work Packages

1. Choose *Details* to display time scales at the level of individual work packages in the ASAP Roadmap. Here you can change estimated dates or numbers of days as follows:

   - You can deselect a work package by entering an *N* in the *Select* column next to it. The estimated number of working days required for this work package is set to zero. This means that you can perform project estimation for just the subset of work packages that interests you (for example, if one phase is already complete and you only want to perform project estimation for the remainder of the project, not for all of it). If you decide that you do want the work package to be part of the project estimation after all, choose *Reset* at the bottom of the table. This reactivates the relevant formulas, which reinstate the previously calculated values when you press F9.

   - You can change the number of working days or the date(s) for a work package manually. Consider all other factors and possible related decisions carefully before you take this

Checking the "Effort and Dates" Table

> step. Please do not change the formulas. Instead, do your own calculations outside the Project Estimator and then simply overwrite the value for the work package. This is the most direct way to change time scale values.
>
> ⚠️
>
> Any manual changes you make to values for one work package can have a knock-on effect on values for dependent work packages. The *Reset* button does not work for manual changes.

2. Every work package is assigned a default project role in the *Owner* (*Roles*) column. These roles are provided for information purposes only here and can be changed as appropriate.

3. In the *Responsibility* column, you can specify who has responsibility for supervising each work package. You can select one of the following possible entries:

   − Internal/customer (Int)

   − External/consulting (Ext)

   − Customer supports consulting (Ext[Int])

   − Consulting supports customer (Int[Ext])

4. Choose *Overview of Results* to return to the overview level of the *Effort and Dates* table.

Displaying the Work Plan

1. Choose *Workplan* to go to the ASAP work plan. You can use this work plan in data extract form as the basis for all subsequent implementation tasks in this project.

2. The work plan contains all the ASAP Roadmap work packages (and their activities) that you did not deselect at the details level of the *Effort and Dates* table. The data displayed here for each work package includes the start and end date, the planned number of working days required, the duration of the work package, and the owner (project role).

3. By default, working days and dates are displayed in the work plan without the addition of contingency.

   − If you wish to display the working days and dates with the addition of contingency, overwrite the value *NC* (no contingency) at the top of the *Effort* column in the *Original Plan* section with *C* (contingency) and choose F9 to update the table.
   The working days and dates are now displayed with the addition of contingency.

   − To display the data without contingency again, overwrite the *C* with *NC* and press F9.
   The working days and dates are now displayed without the addition of contingency.

4. You can create a data extract of the work plan to support the ASAP implementation method during the project (see Step 4 – Generating Data Extracts and Printing [Page 44]).

5. Choose *Overview of Results* to return to the overview level of the *Effort and Dates* table.

Displaying the Overview of Tables

Choose *Overview of tables* to go to a diagram of the relationships between the tables in the Project Estimator. Buttons take you directly to the individual tables.

Result

Any data you changed in the *Effort and Dates* table is automatically taken into account in subsequent tables.

Checking the "*Distribution of Effort*" Table

Use

The *Distribution of Effort* table displays the distribution of the project workload between internal and external team members in each Roadmap Phase. The overview table on the *Overview of Results* sheet contains the following values (with and without the addition of contingency) for each phase and for the entire implementation project:

- The total number of working days required

- The total number of internal (customer) working days required

- The total number of external (consulting) working days required

- The percentage of the total number of working days required that is assigned to external team members

You can go to the following other tables from the overview table:

- Details (differentiation of the results by work package, project role, application component, and so on)

- Overview of tables (a diagram of the relationships between the tables in the Project Estimator)

Procedure

1. Check the results displayed at the overview level of the *Distribution of Effort* table.

2. Choose *Details* to display the estimated distribution of working days in more detail, both with and without the addition of contingency, according to the following criteria:

   a. Internal/external

   b. By project role

   c. By project role and application component (internal team members)

   d. By project role and application component (external team members)

3. Check the tables. If necessary, go back and repeat Steps 1 and 2.

4. Choose the *Overview of Results* tab in the footer to return to the overview level of the *Distribution of Effort* table.

   ➡️

   Choose *Overview of tables* to go to a diagram of the relationships between the tables in the Project Estimator. Buttons take you directly to the individual tables.

Checking the "*Distribution of Costs*" Table

Use

The *Distribution of Costs* table displays the allocation of costs to internal and external project team members in each Roadmap Phase. The overview table on the *Overview of Results* sheet contains the following values (with and without the addition of contingency):

- Total costs for each phase and for the entire implementation project

- Internal costs for each phase and for the entire implementation project

- External costs for each phase and for the entire implementation project

- The percentage of the total costs that is allocated to each phase and to the five phases together (that is, the 100% for the entire implementation project minus the percentage allocated to project review costs)

- A breakdown of the external costs into labor costs, trip costs, and expenses

- Average day rates in general and for internal and external team members

- Costs for external project review activities

The values displayed in this table represent thousands of the currency you selected in the cost factors.

You can go to the following other tables from the overview table:

- Details (differentiation of the results by work package, project role, application component, and so on)

- Overview of tables (a diagram of the relationships between the tables in the Project Estimator)

Procedure

1. Check the results displayed at the overview level of the *Distribution of Costs* table. These are the internal, external, and total costs (with and without the addition of contingency) for each phase of the ASAP Roadmap.

2. Choose *Details* to display the distribution of costs in more detail, both with and without the addition of contingency, according to the following criteria:

    – Internal/external per work package

    – By project role per work package

    – By project role and application component (internal team members)

    – By project role and application component (external team members)

3. Check the tables. If necessary, go back and repeat Steps 1 and 2.

4. Choose the *Overview of Results* tab in the footer to return to the overview level of the *Distribution of Costs* table.

Checking the "Distribution of Costs" Table

Choose *Overview of tables* to go to a diagram of the relationships between the tables in the Project Estimator. Buttons take you directly to the individual tables.

Checking the "Distribution of Costs" Table

Checking the "*Project Organization (Roles)*" Table

Use

The *Project Organization (Roles)* table displays the human resource requirements of the project per project role and application component. The overview table on the *Overview of Results* sheet contains the following values (with and without the addition of contingency):

- The total number of working days required per project role/application component

- The total number of working days required per external project role/application component

- The total number of team members required per project role/application component

- The total number of external team members required per project role/application component

You can go to the following other tables from the overview table:

- Details (differentiation of the results by work package/phase, project role, application component, and so on)

- Overview of tables (a diagram of the relationships between the tables in the Project Estimator)

Procedure

1. Check the results displayed at the overview level of the *Project Organization (Roles)* table. These are the total and external resources required for individual project roles and application components in terms of numbers of working days and numbers of team members required.

2. Choose *Details* to display the estimated distribution of working days in more detail, both with and without the addition of contingency, according to the following criteria:

   – Internal/external per work package in working days

   – By project role per work package in working days

   – By project role and application component in working days (internal team members)

3. Check the tables. If necessary, go back and repeat Steps 1 and 2.

4. Choose the *Overview of Results* tab in the footer to return to the overview level of the *Project Organization (Roles)* table.

   Choose *Overview of tables* to go to a diagram of the relationships between the tables in the Project Estimator. Buttons take you directly to the individual tables.

5. To return to the Project Estimator initial screen, choose ⬅. Here you can choose *Step 4 – Execute* to start Step 4.

Entering General Project Data and Formatting Data

Purpose

The following topics explain how you can enter general project data, create data extracts, and print from the Project Estimator.

Process Flow

1. Enter your general project data [Page 43].

2. Create data extracts [Page 44] (optional).

3. Create printouts [Page 46] (optional).

Result

The system creates data extracts or printouts that you can give to the customer.

Entering General Project Data

Use

The system needs this project data to print the cover sheet for the printout.

Procedure

1. On the Project Estimator initial screen, choose *Step 4 – Execute.*

2. In the dialog box that appears, enter the following data:

   - Customer Data

   - Project Description

   - Customer Contact

   - SAP Contact

3. Choose *Enter.*
   The system displays the Project Estimator initial screen.

   You can display the Project Estimator cover sheet that includes your data. Choose the *Cover Sheet* tab at the bottom of the worksheet window. To return to the Project Estimator initial screen, choose the *Start* tab.

Creating Data Extracts

Use

You can create data extracts from the results of a project estimation. These data extracts can be made available to customers, since they do not contain formulas.

Prerequisites

- You must check the results from the Project Estimator carefully. (See also Checking the Results [Page 34])

- You must install the necessary software on your PC (including Microsoft Project if you want to extract the Project Plan).

Procedure

To create a data extract:

1. Select 💾 .on the Project Estimator initial screen.
   The *File Extraction* dialog box appears, offering you several options.

2. Choose the data extract you would like to perform. You can only perform one data extract each time.
   You can choose from the following data extracts:

   - *Management Info* (XLS)

   - *Workplan/Roadmap* (XLS)

   - *Project Plan* (MPX)

   - *Enterprise Area Scope* (XLS)

   - *Application Component Scope* (XLS)

   - *Resource Plan* (XLS)

   - *Budget Plan* (XLS)

3. If you choose the *Management Info* data extract, you can select or deselect any of the following results tables:

   a. Overview of Results

   b. Effort and Dates

   c. Distribution of Effort

   d. Distribution of Costs

   e. Overview of Factors

   f. Overview of Application Factors Level 1

4. A dialog box appears in which the system suggests a name that you can use to save the data extract:

- XXX_Management_Info.xls
- XXX_Work_Plan.xls
- XXX_Roadmap.mpx
- XXX_Enterprise_Area_Scope.xls
- XXX_Application_Component_Scope
- XXX_Resource_Plan
- XXX_Budget_Plan

Adapt the filename to suit your own needs, then choose *Save*. The data extract is now saved for future use.

Printing from the Project Estimator

Use

You can print the results from the Project Estimator and give them to the customer.

Prerequisites

- You must check the results from the Project Estimator carefully.

- You must install a printer on your PC.

Procedure

1. On the Project Estimator initial screen, choose *Print.*
   The *Print* dialog box appears, offering you several options.

2. You can choose to print one, several or all your results at once. Select the results you want to print.

3. To print the cover sheet with the results, select *With Cover Sheet.*

Result

The printer you have installed prints the results from the Project Estimator.

Closing the Project Estimator

Use

After you have created data extracts or printouts of the Project Estimator results, consider whether or not you intend to revise the project estimation later. If so, you should save the complete project estimation, since you cannot upload data extracts into a new calculation – that is, you would have to enter all your data again from scratch.

⚠️

Calculations containing formulas must not be given to the customer or to any other third party.

Prerequisites

Before you close the Project Estimator, make sure that you will not need to revise the estimation later.

Procedure

- If you intend to revise the project estimation later, save your calculation under a new name; then close the Project Estimator.

- If you know for certain that you will not revise the estimation in the future, close the Project Estimator without saving your changes. (Caution: the default is *Save changes*).