**What-if Scenario Analysis**

What-if analysis is used to explore and compare various plan and schedule alternatives based on changing conditions. It can be applied in the primary project phases to try-out scenarios and optimise your plan. During execution, it is an important tool used to predict the consequence of any event (late delivery etc.)

What-if scenario analysis can range from a simple evaluation of the effects of changing the duration of one or more activities, to more complex analysis like introducing duration uncertainty, running a project forecasts based on performance-to-date, all the way to a schedule and cost risk analysis, taking [identified project and enterprise risks](https://www.safran.com/risk) into account.

The majority of questions asked are exploratory in nature and are intended to examine the results of predictions in the future.

Some examples might be:

* What if lead time for major equipment or components is extended?
* What if we sub-contract parts of the prefab or fabrication work?
* What if we need to extend the duration of certain engineering activities?
* What is the effect on completion date and resources if the current performance trend continues?
* What if prefabrication work seven days a week instead of five?
* What if we accelerate the schedule?

Answering these questions quickly, reviewing the results and asking new questions is the process by which engineers and project managers find the best solutions. The questions often involve making changes to data, running the analysis, examining the predictions, comparing it to the schedule, and then challenging the effect.

Simply put, what-if simulations provide an opportunity to develop project outcomes fitting predetermined characteristics, in order to test how project plans will perform under varying factors and controls.

**Benefits of What-If Scenario Analysis**

**1. Evaluation of Possible Outcomes**

A project manager can use WISA to see how a given outcome, such as project costs, might be affected by changes in particular variables, such as the late delivery of supplies or the unavailability of key personnel. This provides them with greater insight into the possible uncertainties they're likely to encounter and the impact of these risks on the [successful completion of the project](https://www.safran.com/blog/new-download-the-five-immutable-principles-of-project-success).

**2. More Informed Decisions/Actions**

What-if scenario planning allows a project manager to respond to alternative situations more quickly and effectively, because they have developed strategies to minimise the impact of the change. With the insight that what-if analysis provides, project managers can make more informed decisions about the future of the project, reducing uncertainty.

**3. Improved Project Predictability**

A what-if scenario is an informal speculation about how a given situation might be handled. The more questions that are asked, answered, and reviewed throughout each stage of the project lifecycle, the more informed the project manager, and the more predictable the project outcome.

**4. Analysis of Simple and Complex Factors**

WISA is an umbrella term for a type of evaluation that measures the effect on a project outcome should one of the primary elements be changed. At its most complex, Monte Carlo analysis can be utilised to provide analysis throughout unlimited scenarios. To answer basic questions, a simpler method of what-if analysis can also be used to extract the necessary information more rapidly.

**Improved Project Management**

What-if analysis allows project managers to recognise options and impact from events and changing assumptions. With proper utilisation, project managers can not only [make more informed decisions](https://www.safran.com/blog/developing-project-risk-intelligence-in-your-company) by changing assumptions and observing or estimating the results, but it is also possible to better predict the outcome of those decisions.

Project management will always be characterised by a degree of uncertainty, changes, impact from events, and deviation from plan. The challenge is managing these events and this uncertainty to understand the latest impact so that schedule changes can be made from the latest data available so that contingencies or alternative schedules can be communicated.

[Safran Project software](https://www.safran.com/risk) provides project managers with end-to-end project visibility from initial planning through to execution. With flexible WISA, duration uncertainty analysis, forecasting, and risk analysis managers can easily compare two or more versions of their plan and assess schedule impact, then create a revised schedule based on performance data or user input.

To see how [Safran Project](https://www.safran.com/project) can help you improve your project management, try a free 30-day trial by following the link below.

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