



BARBECANA

Realistic plans for project success.

Looking at your
project through
rose-colored
glasses?

Let's get real.

Full Monte

Cost and schedule risk analysis add-in for
Microsoft® Project that graphically displays the
probability that your projects will complete on
schedule and within budget

Factor in Risk for More Realistic Schedules

Every management decision involves risk. The difference between success and failure is often how well that level of risk is accounted for and managed. In project planning especially, ignoring uncertainty can have serious consequences. Using “deterministic” or single-point estimates results in two main types of error:

1. At best, the single value obtained for the project completion date or cost may approximate the middle of the range of possible outcomes. This means that there is only a 50% chance of achieving them. Most projects demand a plan with a much higher probability of success.
2. Often the situation is much worse, in that the chance of achieving these single value estimates may be much smaller than 50% due to distributions being skewed and to a phenomenon known as merge bias.

The only thing certain about a deterministic plan is that it will be wrong. The solution is Full Monte™ – a cost and schedule risk analysis add-in for Microsoft® Project that graphically displays the probability that your projects will complete on schedule and within budget. Full Monte utilizes Monte Carlo risk analysis to produce realistic estimates of all calculated dates, slacks and costs. Full Monte factors in uncertainty, helps you set realistic expectations and adjust your project plans. Full Monte also performs sensitivity analysis, pinpointing tasks likely to affect project completion. Full Monte protects your projects, your plans, and most importantly your reputation.

Task Information

Type task number or name or select from list

4 (Mark perimeter)

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5 (Dig Foundation)

6 (Run plumbing supply & drain)

8 (Set forms)

9 (Four concrete)

10 (Cure concrete)

13 (Set floor joists)

14 (Build stairs)

15 (Set subfloor)

16 (Raise exterior walls)

17 (Sheath ext walls)

18 (Raise interior walls)

20 (Set floor joists)

21 (Set subfloor)

22 (Raise exterior walls)

23 (Sheath ext walls)

Branching: (None)

Distribution Type: Beta

(Deterministic remaining duration is 6 days)

Enter duration estimates:	or % of remaining duration:
Optimistic: 36 hrs	or 75%
Most likely: 42 hrs	or 87.5%
Pessimistic: 60 hrs	or 125%

Confidence interval (%): 100

36 hrs 42 hrs 60 hrs

Help View Correlation Set Correlations OK Cancel Apply

This shows the main Full Monte edit dialog indicating how one can select a task, determine the distribution type and parameters, and see a visual representation of what you specified.

Full Monte and Microsoft Project

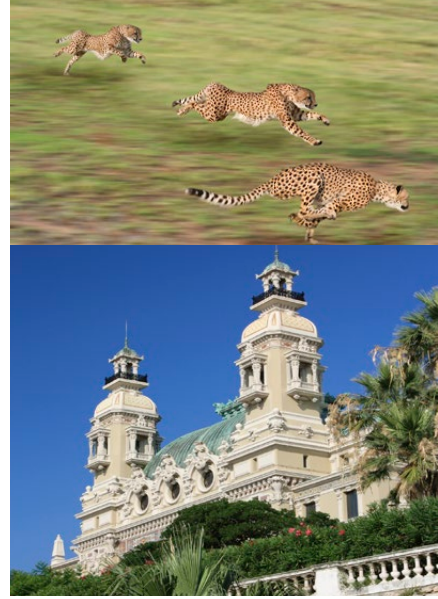
Full Monte is a Microsoft Project Add-In, which means that it is so closely integrated with Project (2007 and above) that it seems like part of the product. All Full Monte functionality is accessed from the Project menu system, with no need for awkward imports or exports.

The Need for Speed

Full Monte is over 100 times faster than competing systems. For example, 10,000 trials on a 3,600 task network takes about five minutes. (Users have run Full Monte on networks as large as 54,000 tasks.) What's more, it does a sophisticated sensitivity analysis at the same time!

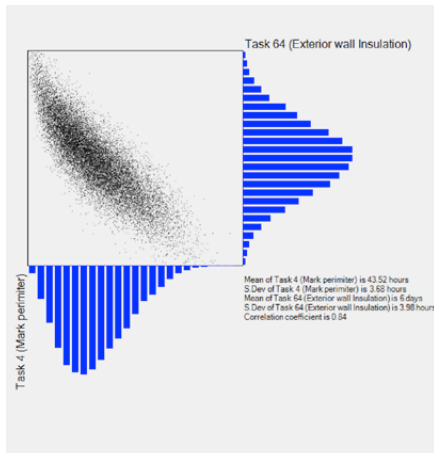
Speed matters because it is important to do a large number of trials in order to get reliable results. And the reason that Full Monte is so fast is that it was developed by CPM scheduling experts. Unlike competitors, Barbecana specializes in risk analysis in the project scheduling context. Full Monte performs all the CPM calculations itself instead of relying on Project to do them.

If risk analysis is worth doing it's worth doing properly, so if you don't want to have to leave your simulations running overnight Full Monte is your clear choice.



Monte Carlo Simulation

Full Monte uses Monte Carlo simulation – named after the famous casino – to produce more realistic schedules by modeling the uncertainties inherent in any prediction of the future. Monte Carlo works by simulating the project thousands of times, each time using a different set of duration estimates sampled from distributions specified by you. Results are presented in terms of histograms and s-curves of early and late dates, free and total float, and cost, for every task in the network.

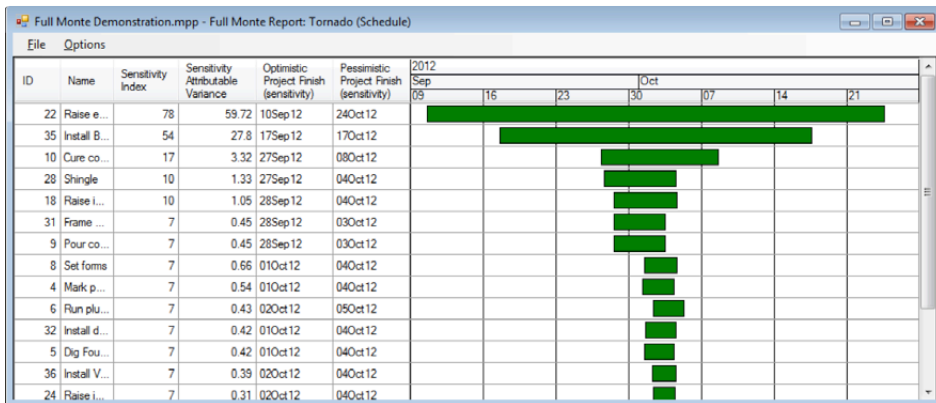


This scatter diagram illustrates the joint distribution of two correlated task distributions.

Correlations

Full Monte's uniquely simple implementation of correlations through "correlation sources" allows multiple tasks to be correlated due to one or more outside influences, while precisely maintaining their specified distributions. Furthermore, it requires no extra data other than the name of the source.

This is more powerful than specifying correlations directly between task durations, and contrasts with the much more complicated idea of multiplicative "drivers," which require additional data entry.



"Tornado chart" showing approximate sensitivity of project early finish to various tasks. (Some products always show these charts as being symmetrical, because they approximate the dates based upon just a single measure, the standard deviation.)

Sensitivity

Sensitivity analysis pinpoints those tasks or outside influences which most critically affect the finish date and cost of the project, or part of the project. Full Monte's sophisticated sensitivity analysis tools produce a short-list of the most likely candidates during the risk analysis, in the form of a tornado chart. From this you are a mouse-click away from a more thorough analysis for any task, which among other things can tell you the influence of that task on any percentile (e.g. "P-80") of the project finish date or cost.

"Everything should be made as simple as possible, but not simpler." — Albert Einstein, as quoted by Roger Sessions

Some tools try to make risk analysis "simpler than possible." Barbecana has gone to great lengths to make sure Full Monte is easy to use, but it is not "dumbed down." For example, some products produce symmetrical tornado charts, based just on a standard deviation; they look pretty but are generally not correct. Full Monte estimates the true values of the bar ends resulting from the optimistic and pessimistic durations respectively, while fully taking into account the merge bias resulting from all other task durations varying as specified.



Clicking on a bar in the picture above creates this more detailed picture of the sensitivity, showing two cumulative distributions of project finish date, based upon optimistic and pessimistic values for the duration of the selected task.

What's wrong with PERT?

The Program Evaluation and Review Technique (PERT) was the first attempt to address uncertainty in project networks. It is seriously flawed because it considers only a single critical path and hence does not account for the phenomenon of merge bias, which is arguably the biggest single reason for modeling risk in the first place. This simplistic approach could perhaps be excused in view of the limited computing capacity available at the time (the late 50's) but there is absolutely no reason to settle for this flawed approach in the 21st century.

Don't Take Our Word for it!

You can download a free 30-day trial at www.barbecana.com, where you can also see who else is using Full Monte and what our users say about it. Here are just two examples:

"I've actually tested three different Monte Carlo schedule risk analysis products and Full Monte is the only one that has been able to successfully perform the analysis on the Microsoft Project test schedule."

Full Monte User

"Full Monte is more flexible, runs faster, has great support and costs less than Risk+." **Stephen Magerkurth, Honeywell**



Full Monte Features

- Support for normal, lognormal, beta, triangular, and uniform distributions.
- Optimistic and pessimistic values can be specified with 100% certainty or with some lower percentage of certainty (a generalization of “trigen” distribution to all distribution types).
- Probabilistic and conditional branching.
- Correlations between task durations based upon multiple external factors.
- Sensitivity analysis, including sensitivity index, covariance, and tornado charts for cost and schedule.
- Expected values, standard deviations, percentiles, histograms, and s-curves for cost, early and late dates, and free and total slack for every task.
- True cost integration is achieved by resource-loading the schedule as required by AACE Recommended Practice 57R-09.
- Active percentage, critical percentage, sensitivity index, merge bias delay for every task.
- Supports external subprojects with inter-project links.
- User-configurable mapping of data to Project fields for easy coexistence with other add-ins.
- Easy to use (no VBA or other programming required).
- Customizable reports, including bar charts for dates, durations, and costs.
- Output to comma delimited files (for Excel®).
- Migration of data from Risk+®.

For more information

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