Why it may take longer to add risk

or why distribution is important

Practical Example

Open up PertMaster and add one activity as follows:

Name	Description	Rem Duration	Task Calendar	Week 1 17 18 19 20	Minimum Duration	Most Likely	Maximum Duration
0010	Activity	120	7 Day		0	120	360

(Note that for each of use, the task calendar should be a 7 day calendar.)

This is an activity which has a remaining duration of 120 days.

However, in real life, an activity might not take exactly 120 days – it might take a few days more, or a few days less. This is known as "Risk".

In this rather extreme example, this activity may take as little as zero days, or as long as 360 days.

The "Most likely" duration is 120 days.

To evaluate how long this activity will take, it is necessary to run a Risk Analysis (by going to Risk – Run Risk Analysis – clicking Analyse, then Complete).

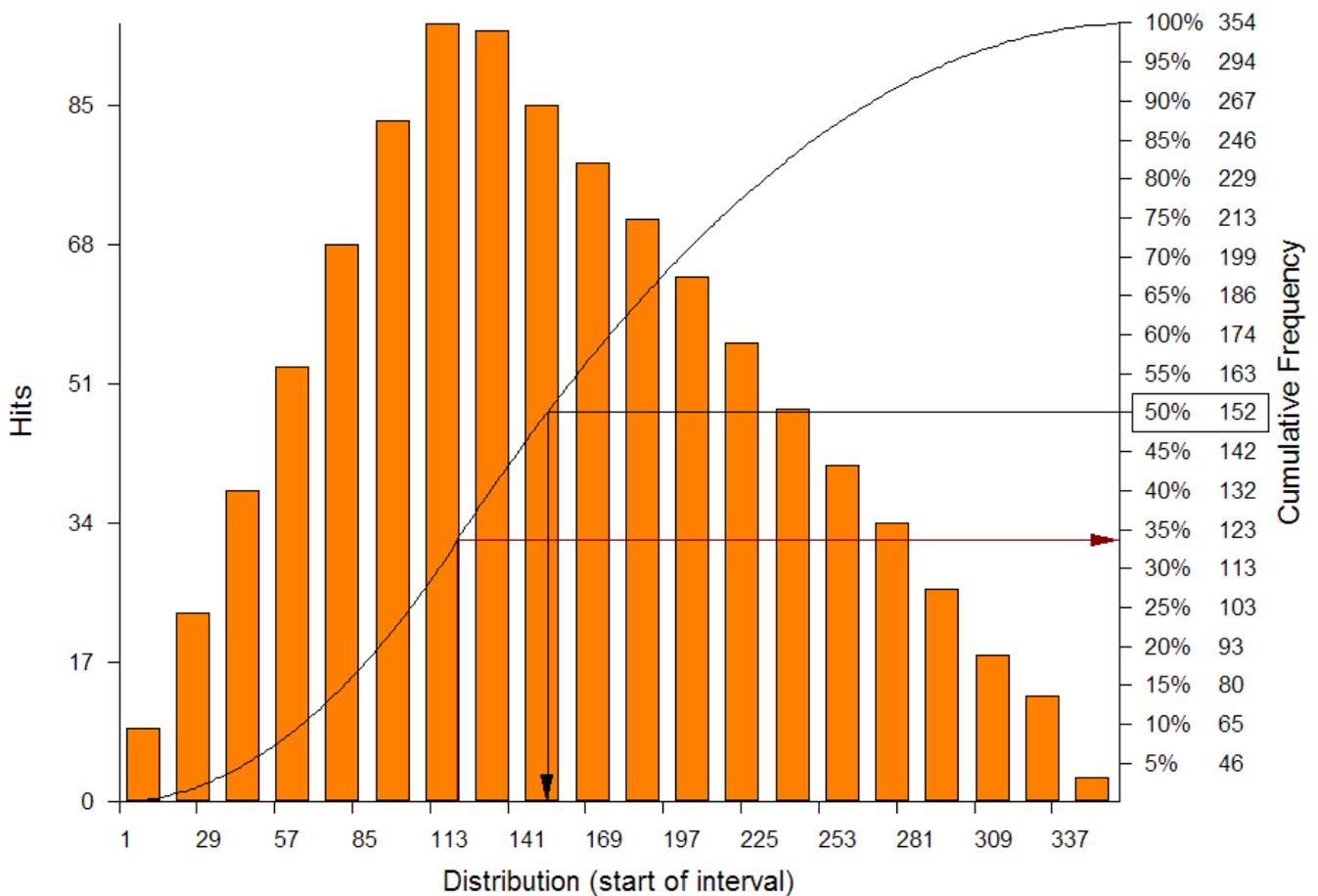So, after running the risk analysis, how long will this activity take?

1. Approximately 120 days.

2. Approximately 150 days.

3. Approximately 180 days.

And why?

Have a think about this before continuing.

Let's see if you are right.

After running the risk analysis, go to View – Durations. You should see something like this:

The duration which you can have 50% confidence of meeting, i.e. it is as likely as not that it will be achieved, is 152 days.

The chance of meeting 120 days, the "Most likely" duration, is only 34%.

Are you surprised?

Let's take a less extreme example.

Name	Description	Rem Duration	Task Calendar																		Minimum Duration	Most Likely	Maximum Duration
				May '06							Jun '06				Jul '06									
				17	24	1	8	15	22	29	5	12	19	26	3	10	17	24						
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15						
0010	Activity	10	7 Day																			9	10	12
0020	Activity	10	7 Day																			9	10	12
0030	Activity	10	7 Day																			9	10	12
0040	Activity	10	7 Day																			9	10	12
0050	Activity	10	7 Day																			9	10	12
0060	Activity	10	7 Day																			9	10	12
0070	Activity	10	7 Day																			9	10	12
0080	Activity	10	7 Day																			9	10	12
0090	Activity	10	7 Day																			9	10	12
0100	Activity	10	7 Day																			9	10	12

The above shows 10 activities, linked by a Finish-to-Start relationship (with no lag), and with:

1. a remaining duration of 10 days,

2. a minimum duration of 9 days (so it may finish a day early),

3. a Most Likely duration of 10 days, and

4. a Maximum Duration of 12 days (so it may take two days longer than expected).

Given that there are 10 activities, each with a Most Likely duration of 10 days each, that would produce a cumulative Most Likely duration of 100 days.

What do you think the most probable outcome is? And why?

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Phillip Burton