Quick Start Guide *for* *Statistical PERT® Bootstrap Edition* **Version 1.0**

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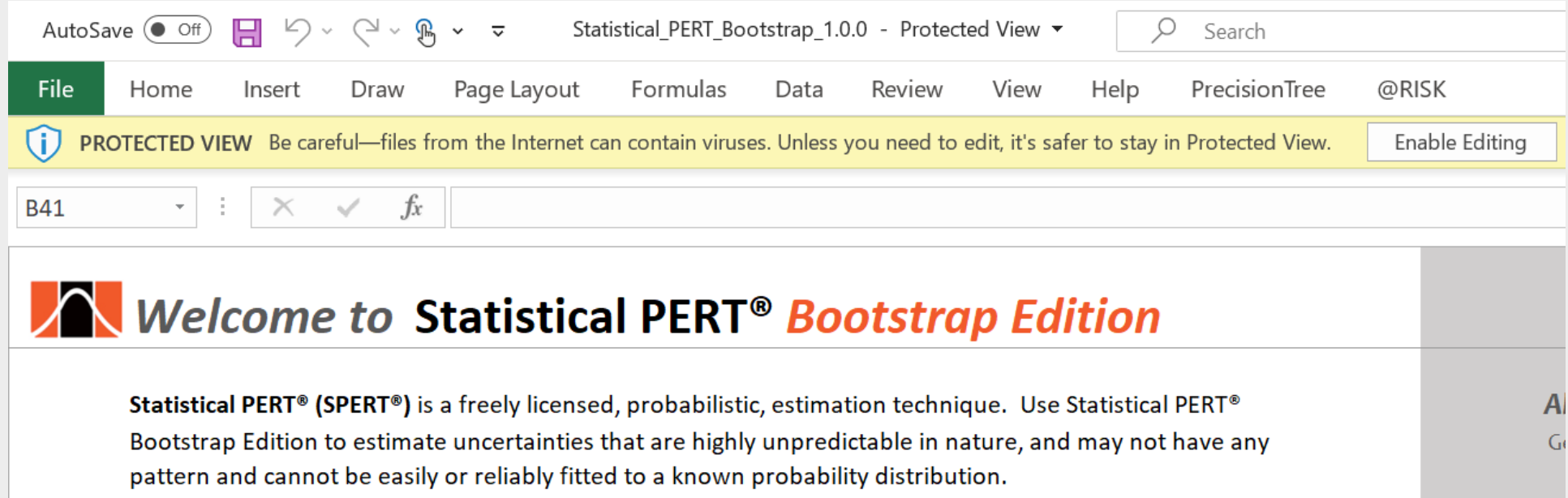for using any Statistical PERT® spreadsheet.*

Quick Start for using a *Statistical PERT® Bootstrap Edition* Excel spreadsheet

Using a Statistical PERT® spreadsheet is easy! First, download the *Statistical PERT® Bootstrap Edition* example workbook for Microsoft Excel , and then use this *Quick Start* to understand the basics behind using and modifying your SPERT® spreadsheet.

This Quick Start was created from the **Version 1.0** **Statistical PERT® Bootstrap Edition** example workbook.

Before you download any *Statistical PERT®* example workbooks or templates from https://www.statisticalpert.com, be sure you have Microsoft Excel installed on your computer. You must be running Microsoft Excel 2010, Excel 2013, Excel 2016, Excel 2019 or Microsoft 365 (*your best experience will be with Excel 2016 or later*). **Statistical PERT is not compatible with Excel Online, Google Sheets, or other spreadsheet software programs**. Also, Excel 2013 and older cannot display histogram charts included in some SPERT® spreadsheets.

When you first open a downloaded SPERT file from the Internet, the spreadsheet opens to the **Welcome!** tab. Excel may prompt you with a Protected View notice. To use Statistical PERT, you must press the **Enable Editing** button. (You can run your computer's virus-scanner, firstly, if you wish).

Using the *SPERT® Bootstrap Scrum* worksheet

ID	Iteration	Finish Dates	Capacity	Product Backlog	"Done"	Total "Done"	To-Do & All "Done"
1	1	3/8/2022		552	47	47	552
2	2	3/22/2022		505	26	73	552
3	3	4/5/2022		479	39	112	552
4	4	4/19/2022		440	21	133	552
5	5	5/3/2022		419	39	172	552
6	6	5/17/2022		380	15	187	552
7	7	5/31/2022		365	29	216	552
8	8	6/14/2022		365	24	240	581
9	9	6/28/2022		375			615
10	10	7/12/2022		385			625
11	11	7/26/2022		395			635
12	12	8/9/2022		405			645
13	13	8/23/2022		415			655
14	14	9/6/2022		425			665
15	15	9/20/2022		430			670
16	16	10/4/2022		435			675
17	17	10/18/2022		440			680
18	18	11/1/2022		445			685
19	19	11/15/2022		450			690

Forecast panel:

Number of iterations to forecast	16
Iteration duration	2 *weeks*
Total Product Backlog	690 *(To-do, doing, done)*
Start From *date*	6/14/2022
Finish By *date*	1/24/2023
Percentile Rank	48.2%

Instructions:

1) Enter your iteration *Finish Dates* for every **completed** iteration in column C *(column B is optional)*. Then, add **future** iteration finish dates (in column C) to match your forecast time horizon.

2) For each completed iteration, enter the amount of work "Done" in column F, then, re-calculate the amount of work left to-do on the Total Product Backlog and enter it in column E (next row down).

After a few completed iterations, examine the 5-Line Forecast™ chart, which tracks the work done each iteration and creates forecast lines showing a confidence interval for the most probable outcome (the *average* outcome) plus the feasible region for nearly all other, possible outcomes.

This worksheet will calculate a probable **Finish By** date based upon the amount work on the **Product Backlog**, the rate at which work is **"Done"**, and the number **Iterations** that are included in the forecast. This worksheet uses bootstrap simulation to calculate finish dates with different likelihoods of success.

In the example above, there is a **48.2%** chance that all the remaining work of the **Product Backlog** (450 story points in cell C23) will be finished within the next 16 iterations (**Finish By** date of January 24, 2023).

A Closer Look: A Scrum Team completed their first sprint on March 8, 2022. The team works in 2-week sprints and use story point estimates to size their work efforts. This example forecast includes 36 iteration finish dates between March 8, 2022 and July 11, 2023 (note: the screenshot above only shows the first 19

iteration finish dates). The Scrum Team has finished eight sprints and has logged how much work they got **"Done"** in column F. Each time they complete a sprint, they log what was done for that sprint in column F and recalculate how much work is left to do in the **Product Backlog** so they can enter that in column E.

Since the Scrum Team finished their 8th sprint (which ended on June 14, 2022), they entered how much work they got done for the just-completed sprint in cell F12 (24 story points), recalculated how much work is left on their Product Backlog, and entered that amount in cell E13 (375 story points). Note that when they began working together, the Product Backlog initially had 552 units of work (cell E5).

In column F, the Scrum team has recorded how much work they completed over eight iterations. The **Total "Done"** work is calculated in column H. The remaining work in the **Product Backlog** to complete in future iterations is tracked in column E. The example shows an option of showing *expected* Product Backlog growth over time (cells E13:E23); the alternative approach is to enter what's remaining in the Product Backlog (cell E13) <u>without</u> showing the expected growth of the Product Backlog over time (to do that, just leave cells E14:E23 blank).

Now, press F9 to recalculate the spreadsheet formulas and then start experimenting with different forecast horizon lengths in cell L5.

When you choose a forecast horizon length *that results in some likelihood of completing all the work of the Product Backlog*, then a percentile between 0% and 100% will appear in cell L9. When a percentile is displayed in cell L9, it is the percentile of 1000 simulated trials where the <u>entire</u> Product Backlog was finished by the *Finish By* date in cell L8. The *Finish By* date is automatically calculated for you based upon the integer value you entered in cell L5 that indicates your forecast time horizon.

The shorter your forecast horizon length is (and the smaller the value in cell L5), the fewer simulated trials will have completed all the work of the Product Backlog and the smaller the percentile will be in cell L9. Conversely, the longer your forecast horizon length is (and the larger the value in cell L5), the more simulated trials will have completed all the work of the Product Backlog and the larger the percentile will be in cell L9.

To calculate a probabilistic finish date for the remaining work in the Product Backlog, first examine right-side of the worksheet to find table cells which are highlighted in magenta. This table data identifies five different probabilistic finish dates using the simulated data in the *BootstrapData* worksheet:

- **10%** - this is a highly optimistic forecast that uses the normal distribution and historical data to obtain a bootstrapped mean and standard deviation
- **Optimistic** – this shows an optimistic (5th percentile) where 95% of finish dates will be *after* this optimistic forecast
- **Expected** – this shows the most likely (50th percentile) calculation where finishing by this finish date has a 50/50 chance of occurring
- **Conservative** – this shows a conservative (95th percentile) where 95% of finish dates will be *before* this conservative forecast
- **90%** - this is a highly conservative forecast that that uses the normal distribution and historical data to obtain a bootstrapped mean and standard deviation

Using the SPERT® Bootstrap Kanban worksheet

The Bootstrap Kanban worksheet works very similarly to the Bootstrap Scrum worksheet. The primary difference is that this worksheet does not track the rising and falling Product Backlog line over time; instead, it's just a horizontal line showing the sum of all **"Done"** work (column E) and remaining work left to do (cell I4). Otherwise, this worksheet performs very similarly in the way you create a forecast for a Scrum Team.

Note: Although many Kanban teams track their completed work items *daily*, this forecasting model is intended to work with *weekly* time intervals or greater. Teams that track completed *daily* work items can simply sum their *daily* totals to arrive at a *weekly* totals for this forecasting model.

Using the *SPERT® Vlookups* worksheet

For the most part, you will not need to modify the lookup values in the Vlookups worksheet. Most of the lookup tables are used to dynamically control how much simulated data to use during the bootstrapping simulation process.

There is one lookup value you might choose to modify: the **Team Capacity** values. In this table, you can choose different team capacity values to indicate reduced team capacity, as shown in the example above. Another option is to indicate *increased* team capacity where the existing team capacity might be greater than 100%—this this might occur if a team scales upward to include new team members and/or new teams working on the same product backlog. Values in column B are used for the Team Capacity lookup in the Bootstrap Scrum and Bootstrap Kanban worksheets. Explanatory notes in column A are informational only and not used in any VLOOKUP functions.

Get More Information on *Statistical PERT®*

There are many ways to get more information about Statistical PERT. Visit the Statistical PERT website at https://www.statisticalpert.com and click on the Learn More tab to get more information about Statistical PERT. Also, click on the News & Blog tab to get access to blogs and new information about Statistical PERT.

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