

# One-Minute Spotlight

## The Tornado Chart Tool

Crystal Ball comes with a collection of tools that can help you build and improve your spreadsheet models. The Tornado Chart tool can be especially useful in determining which model variables are the most important inputs; these are the inputs that you should define as probability distributions (Crystal Ball assumptions).

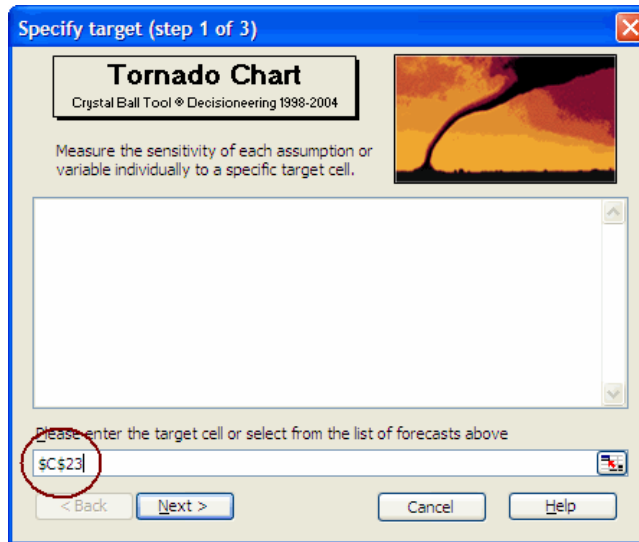
	A	B	C
1	<b>ClearView Project</b>		
2			
3	<b>Costs (in millions):</b>		
4	Development Cost of ClearView to Date		\$10.0
5	Testing Costs		\$4.0
6	Marketing Costs		\$16.0
7	Total Costs		\$30.0
8			
9	<b>Drug Test (sample of 100 patients):</b>		
10	Patients Cured		100
11	FDA Approved if 20 or More Patients Cured		TRUE
12			
13	<b>Market Study (in millions):</b>		
14	Persons in U.S. with Nearsightedness Today		40.0
15	Growth Rate of Nearsightedness		2.00%
16	Persons with Nearsightedness After One Year		40.8
17			
18	<b>Gross Profit on Dosages Sold:</b>		
19	Market Penetration		8.00%
20	Profit Per Customer in Dollars		\$12.00
21	Gross Profit if Approved (MM)		\$39.2
22			
23	<b>Net Profit (MM)</b>		\$9.2
24			

In this model, your company is planning to introduce a new drug, code named "ClearView."

### Beginning the Tornado Analysis

After opening the Tornado Chart tool, the first step of analysis is to define the target cell - in this case the Net Profit (\$C\$23).

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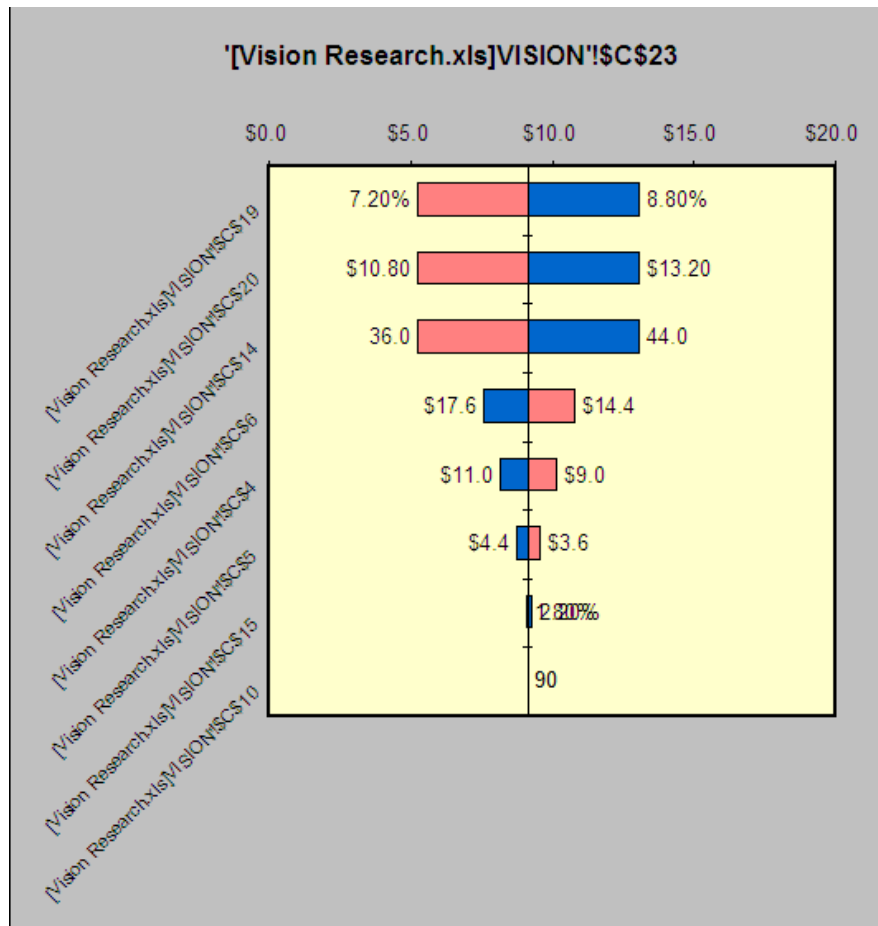
### Selecting the Input Variables

Next, you are directed to select the inputs, assumptions, or decision variables that you want to test. In this model, since you have not defined these yet, you select Add Precedents to choose the model input cells that affect the Net Profit formula.

### Running the tool and analyzing your results.

You then run the tool. After the analysis is completed, the tool creates a Tornado chart for the Net profit variable (as shown below).

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The variables with the widest ranges are listed at the top of the diagram. These will likely cause the greatest variability in the possible Net profit values (represented by the scale at the top). Net Profit is most sensitive to changes in the top three: Market Penetration (\$C\$19), Profit per Customer (\$C\$20), and Market Size (\$C\$14).

Therefore, these are the variables that you might want to define as assumptions. The other variables have less impact on the analysis, and defining these cells as assumptions will not significantly affect the results.

While this is only a rough, preliminary estimate, you can see that the Tornado tool can be a powerful tool, providing a starting place for defining your assumptions.

For more information or to contact us, browse to <http://www.oracle.com/crystalball>.