QUICK START FOR DECISION ADVISOR

Welcome to Quick Start for Decision Advisor®

There is always a moment when we open a new program and wonder how to approach the blank screen in front of us. *Quick Start for Decision Advisor* is intended to lead the new user of Decision Advisor through the steps that go from "blank screen" to "completed analysis."

The focus of *Quick Start* is on the mechanics of entering and processing information in Decision Advisor. After this quick tour, *Introduction to Decision Advisor* will show how Decision Advisor supports designing, building and analyzing business models.

Opening Decision Advisor

When you install Decision Advisor, a Decision Advisor icon appears on your desktop.

When you double-click this icon, you will see a blank diagram.
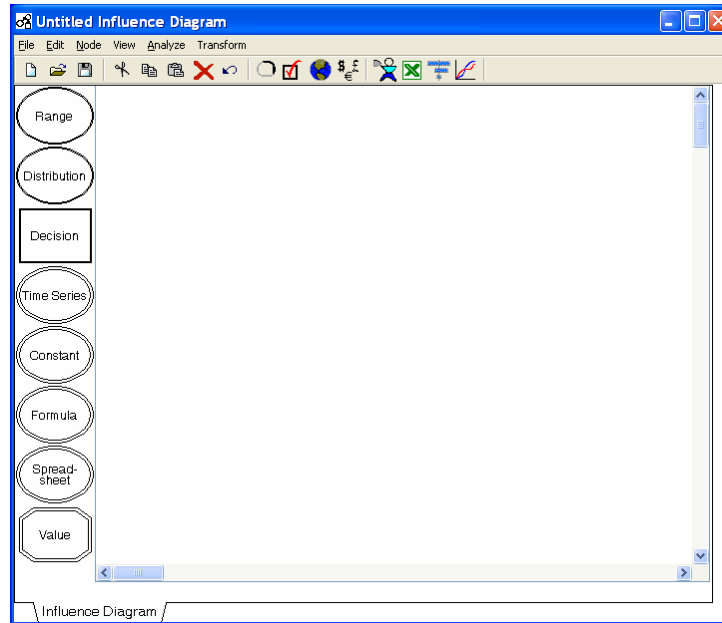
You are now ready to work through a simple problem that will provide you with hands-on experience using Decision Advisor.

The Problem

You have a potential new product that will take one year and $5 million to develop. You estimate that there is an 80% chance to get a product that meets the cost and feature goals; if it does not achieve these goals, the product will be abandoned.

If you succeed in development, you plan to launch in 2008, have a profit goal of $10 million/year until 2012 (well sometime between 2011 and 2015), and then the company will discontinue the product.

Starting the Analysis

Click on the Coach icon in the icon bar near the top of the screen. The Coach will help you define the problem and build the model structure.

1. A dialog box will ask you for a name for the new project. In *Quick Start*, we want to move as quickly as possible from beginning to end. Later, you can explore the features of Decision Advisor in more detail. So keep the default "New Project" entry by clicking the *Proceed* button. (In Decision Advisor, buttons to move to the next step will be labeled *Proceed*, *OK*, or *Accept*, depending on the context.)

2. The screen will change. A basic New Product Development / R&D diagram will appear, and the Coach window will open.
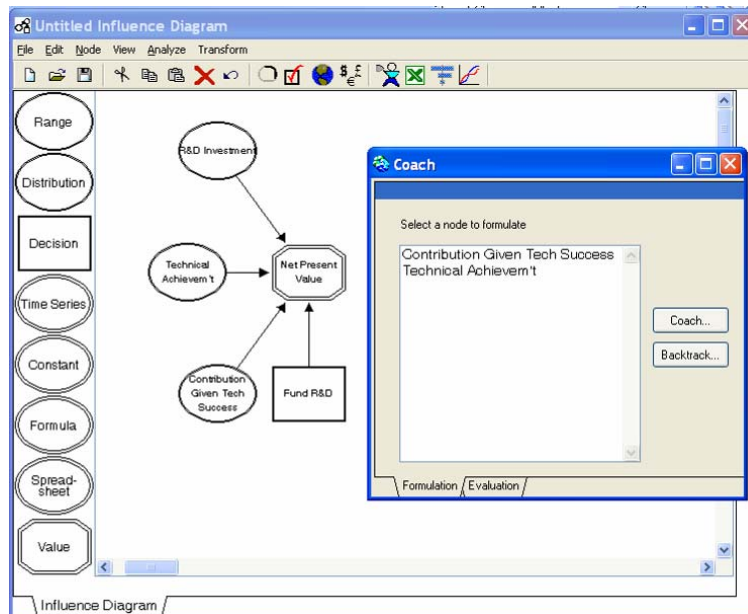

3. The two ovals listed in the Coach window are of immediate interest: Technical Achievement and Contribution Given Technical Success. We will deal with each in turn.
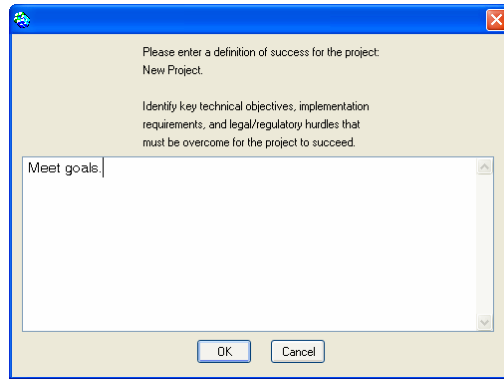
Technical Achievement

The analysis is in three parts: Can we develop it (Technical Achievement), what does it cost to develop it (R&D Investment), and what is it worth if we succeed in development (Contribution Given Technical Success)? We start with Technical Achievement.

4. Select (click on) Technical Achievement in the Coach window and click the *Coach* button:
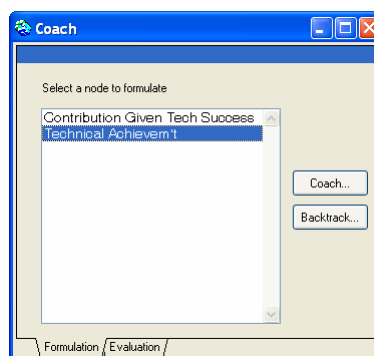
5. You will be asked to enter a definition of technical success, Enter "Meet goals" and click *OK*—in practice, you would define what has to be achieved before you have a viable product.
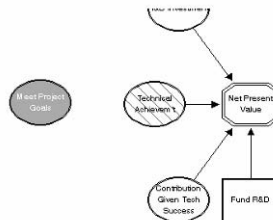
6. You will be asked whether you can fail in this Technical Achievement (of Development) task. Click the *Can Fail* button.
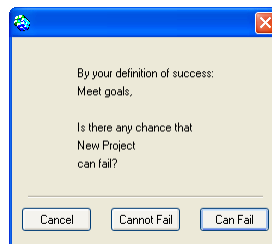
7. Select Single Task, click the *Accept* button, then enter a name like "Meet Project Goals" for Task #1 and again click *Accept.*.
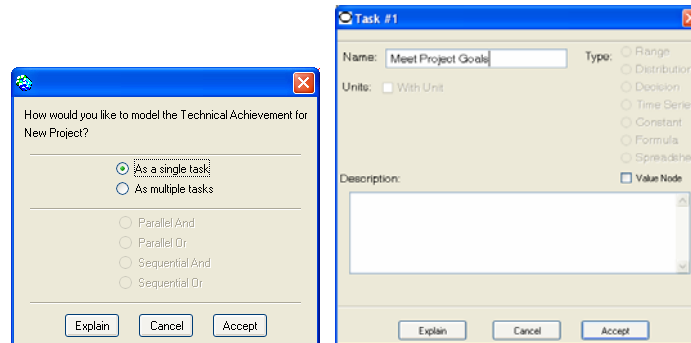

8. You will be returned to the diagram and a shaded node (oval) will appear at the end of the cursor.

9. Position the oval using your cursor and click the mouse button. The node will be positioned on the diagram, several arrows will be drawn, and you will be returned to the coach with "Technical Achievement" no longer appearing in the dialog box because this task has been completed. A new task, "Meet Project Goals," will appear.
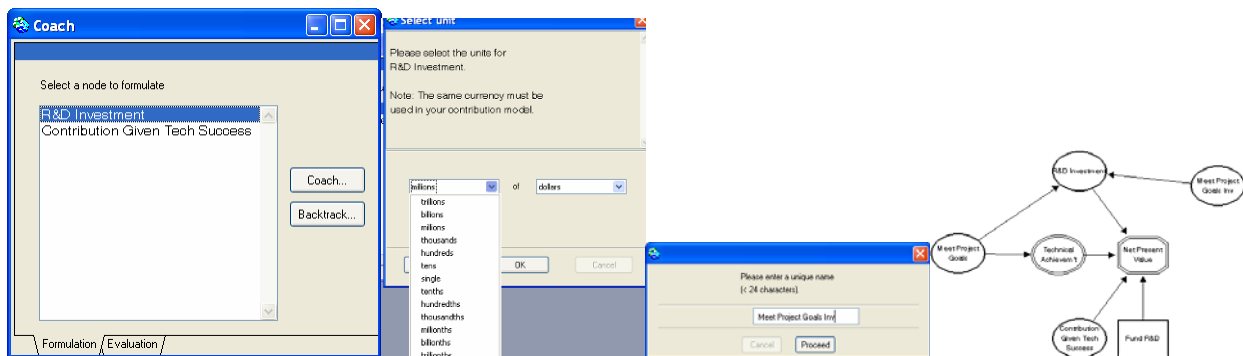
10. Select "Meet Project Goals," click Coach, choose By Direct Assignment, and enter .8 as the probability of success.
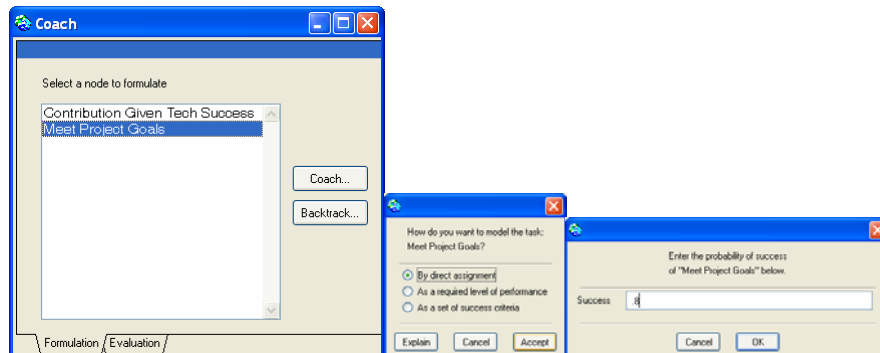
R&D Investment

Now that we have defined the technical tasks, the coach is able to ask us how much it will cost to perform each technical task.

11. The Coach will now prompt you to enter the investment associated with the development or R&D. This entry will be a "time series" — something develops over time. Choose R&D Investment and click *Coach*, select the units you wish to use (the Coach will adjust for units as needed), enter a reasonable name like "Meet Project Goals Inv" and position the node on the diagram by clicking the location where you would like it to appear.

12. Select "Meet Project Goals Inv" in the Coach window and click the *Coach* button. Once again you will be rapidly stepped through a set of choices.

- Select "As a time series"

- Click *OK* to choose the default depreciation and tax treatment

- Select "Unconditional change over time"

- Select "Constant Until" (click on the box at the upper left, and it will turn red), and click *Accept* – this will open the time series editor window

- For each of the entries, choose "Specify the value directly" from the drop-down menus and enter the values 5 for the Initial Value of the investment, 2006 for the Initial Time, 2007 for the Final Time. Click *Accept*.
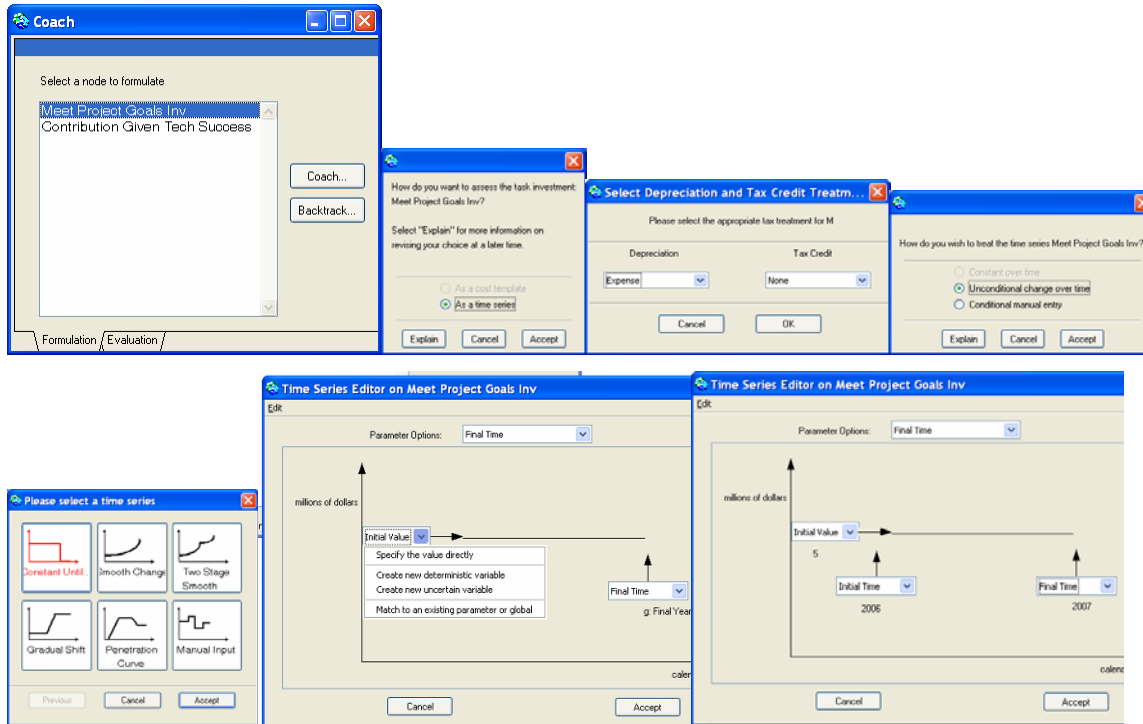
Contribution Given Technical Success

Now we proceed to define what the product will be worth to us.

13. Choose "Contribution Given Tech Success" and click *Coach*.

14. You will be asked about

- Units (choose "millions of dollars")

- Type of market (choose "Product Sales")

- New or old product (choose "New Product")

15. At this point, a new oval titled "Primary Product Profit" will appear on the end of the cursor. Click to deposit this oval at an appropriate place in the diagram.
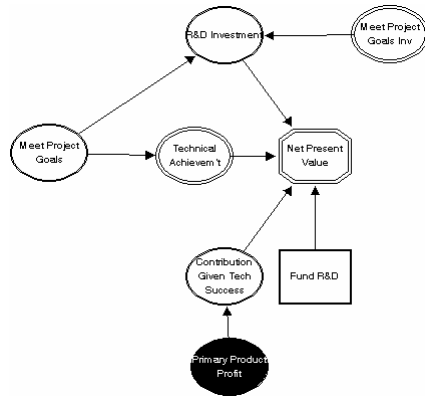
16. You will now be asked several more questions.

- Impact on other products (choose "No Significant Impact")

- Investment (choose "No Significant Investment Required").

17. A new task will appear in the Coach task list. Choose "Primary Product Profit" and click *Coach* once again.

- Choose "As a Direct Assessment of Profit"

- Enter a name like "New Project," with an abbreviation like "NProj"

- Enter Launch Year as 2008

- Choose "NProj Profit" as the node name

- Select "Unconditional Change Over Time"

- Choose "Constant Until" as the form of the time series.

18. In the Time Series editor window for NProj Profit,

- Choose "Create new uncertain variable" from the drop down menu for Initial Value

- Name it "Profit Level"

- Leave Initial Time as "Launch Year"

- Choose "Create new uncertain variable" from the drop down menu for Final Time and name it "End Year."

19. When you click Accept, you will have two new nodes, "Profit Level" and "End Year" to place on the diagram. Click once to place the first node, then move the cursor and click again to deposit the second node.
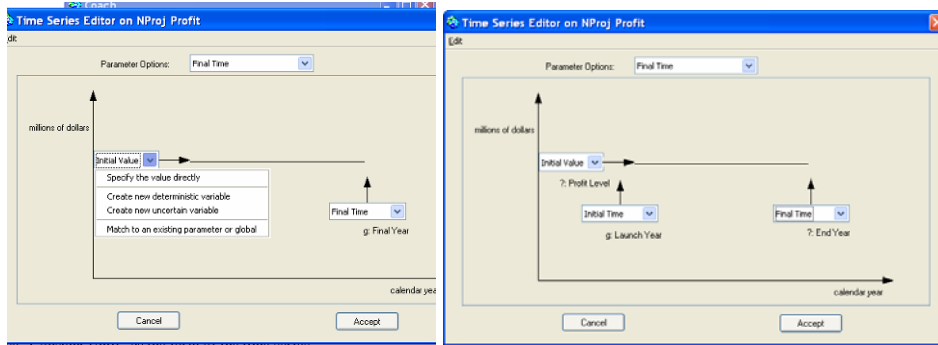
20. Choose "Profit Level" and run the Coach. Choose "As Uncertain", and enter 15, 10, and 6 for the values of "Profit Level." (Use the Enter key to move between entry fields.)
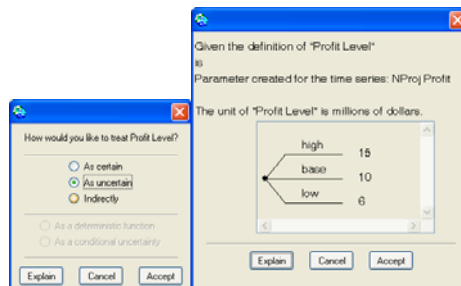

21. Choose "End Year" and run the Coach. Choose "As Uncertain", and enter 2016, 2013, and 2012 for the values; this is one year after the final year of sales. Choose "As Uncertain", and enter 2016, 2013, and 2012 for the values; this is one year after the final year of sales.
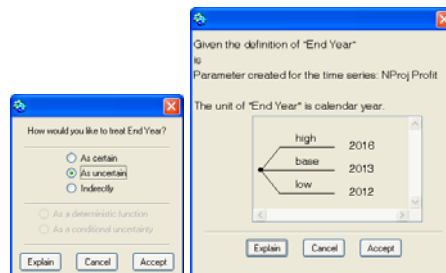
Analysis

At last the input is finished, and we can see what we have created.

22. When we completed the last task above, Coach asks us whether we are ready for analysis. Click *Yes* and then click *Run Coached Analysis* in the Coach window (note that we are now in the Evaluation tab at the bottom of the Coach screen.) "Save" the Excel spreadsheet that Decision Advisor creates, click *OK* in the next the dialog boxes that appear. You can now close the Coach window (click the red X box at upper right.
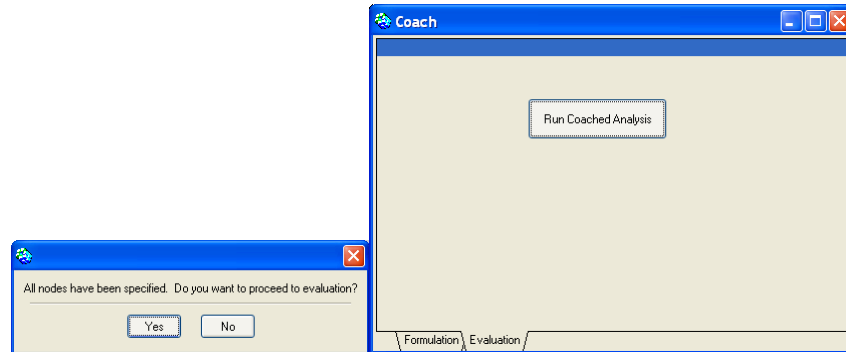
23. Notice that Decision Advisor has created a number of new tabs at the bottom of the window. Choose the Spreadsheet tab. On this tab is a summary of the spreadsheet just created. It shows the cash flow line in table and graphical format. (Your results may differ from the results shown here, depending on the entries for Tax Rate and Discount Rate entered on the Influence Diagram tab, View menu, Global Variables choice.)
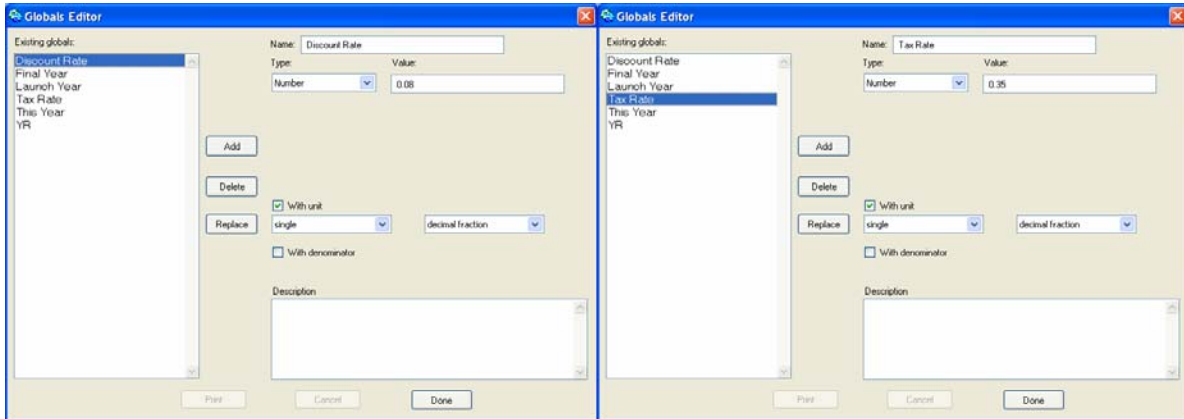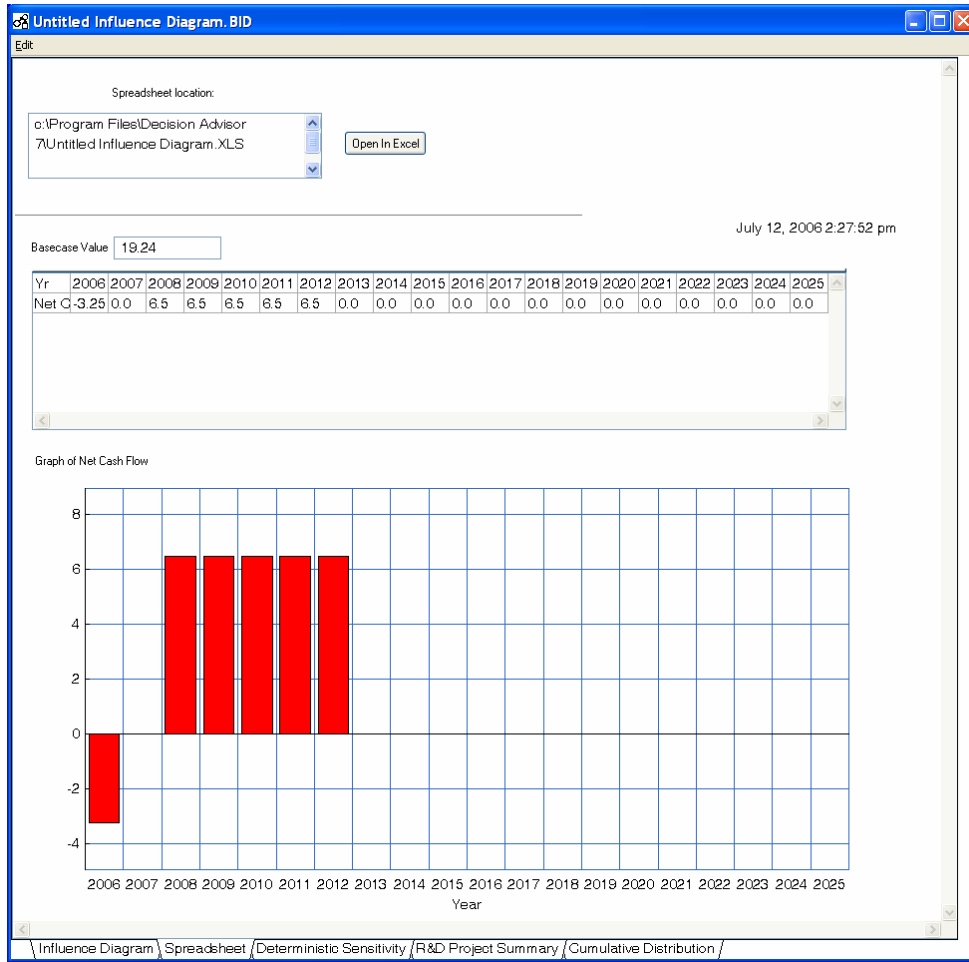
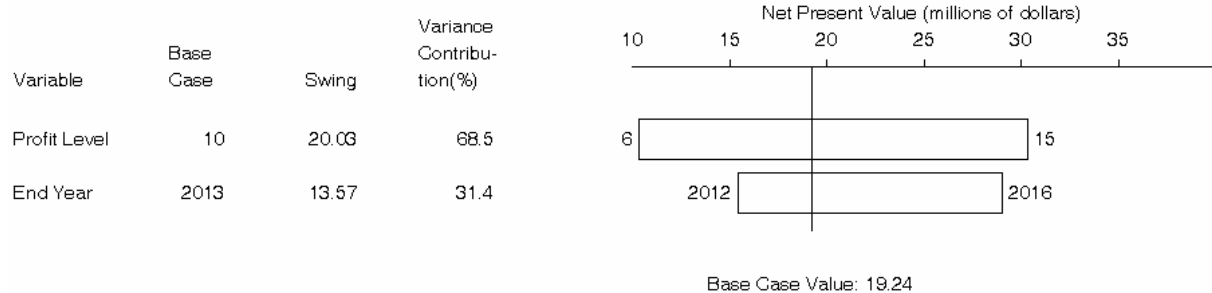24. Click the "Open in Excel" button and to view the spreadsheet.

Untitled Influence Diagram.BID - Business Model

Input Parameter	Cell Name	Value	Low	Base Case	High	Units
Switch	Switch	All				
R&D	R_Switch	TRUE				
Contribution_Given_Tech_Success	C_Switch	TRUE				
Globals						
This Year	This_Year	2006				calendar year
Discount Rate	Discount_Rate	0.08				decimal fraction
Tax Rate	Tax_Rate	0.35				decimal fraction
Launch Year	Launch_Year	2008				calendar year
Model Variables						
R&D Investment						
Meet Project Goals	Meet_Project_Goals	Success	Failure	Success	Success	
Contribution Given Tech Success						
End Year	End_Year	2013	2012	2013	2016	calendar year
Profit Level	Profit_Level	10	6	10	15	millions of dollars
Calculations						
R&D Investment						
Contribution Given Tech Success						

Outputs

R&D Investment	R_D_Investment	N/A				millions of dollars
Contribution Given Tech Success	Contribution_Given_Tech	N/A				millions of dollars
NPV	Net_Present_Value	19.24093				millions of dollars

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
			0	1	2	3	4	5	6	7	8
R&D Investment											
Meet Project Goals Inv			5	0	0	0	0	0	0	0	0
Total R&D Investment			5	0	0	0	0	0	0	0	0
Contribution Given Tech Success											
NProj Profit											
Total NProj Profit			0	0	10	10	10	10	10	0	0
Pre-Tax Cash Flow			-5	0	10	10	10	10	10	0	0
Tax			-1.75	0	3.5	3.5	3.5	3.5	3.5	0	0
Net Cash Flow			-3.25	0	6.5	6.5	6.5	6.5	6.5	0	0
Terminal Value			0								
Tax Base			-5	0	10	10	10	10	10	0	0
Tax			-1.75	0	3.5	3.5	3.5	3.5	3.5	0	0

19. Close Excel.

20. To see the results of the analysis, click the Deterministic Sensitivity tab. You will see a very simple Tornado Chart because this model contains only two commercial uncertainties. Deterministic sensitivity analysis sets all variables to their Base value and then varies each, one at a time, from High to Low, and plots the range in NPV produced by this variation. The chart will display a line for each of the uncertain variables.

| Variable	Base Case	Swing	Variance Contribution(%)
Profit Level	10	20.03	68.5
End Year	2013	13.57	31.4

Base Case Value: 19.24

21. Select the Cumulative Distribution tab. The graphic shows a (cumulative) probability distribution on Net Present Value.
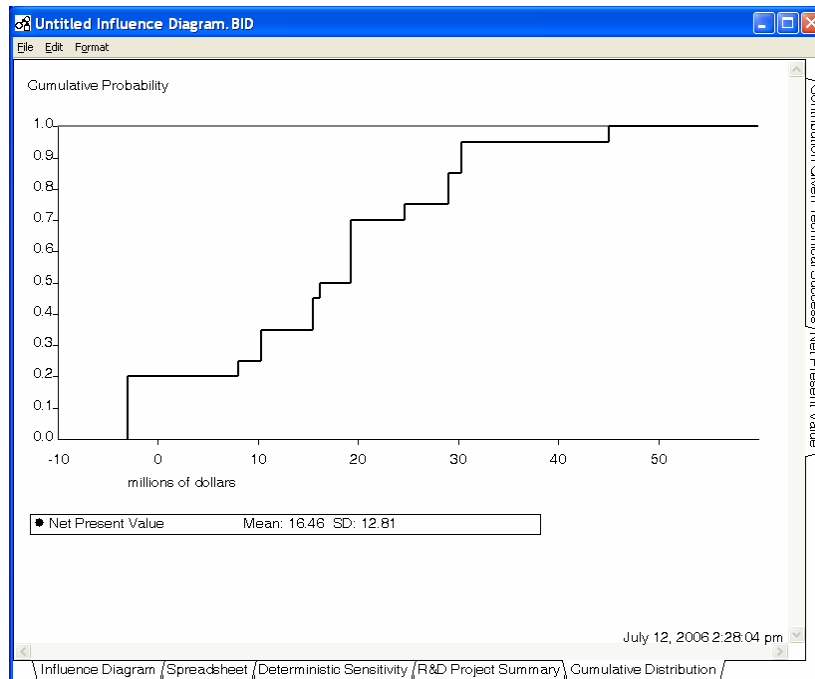
22. Click on the R&D Project Summary tab. You will see a summary that describes this uncertain venture.

| Project Name: New Project					
Probability of Technical Success: 0.8					
Variable	Expected Value	10%	50%	90%	Unit
R&D Investment Given Technical Success	3.00926	3.01	3.01	3.01	millions of dollars
R&D Investment	3.00926	3.01	3.01	3.01	millions of dollars
Contribution Given Technical Success	24.3392	13.35	22.25	33.38	millions of dollars
Expected Contribution	19.4713				millions of dollars
Potential Productivity	8.0881				
Productivity	6.47048				
Net Present Value	16.4621	-3.01	16.21	30.37	millions of dollars

23. For a final change, let us assume that you have thought more carefully about "Profit Level" and want to change the model so that "Profit Level" = "Market Size" * "Market Share". Click on the "Range" oval at the top of the palette on the left hand side of the page and drag an oval onto the diagram. Repeat to drag a second oval onto the diagram.
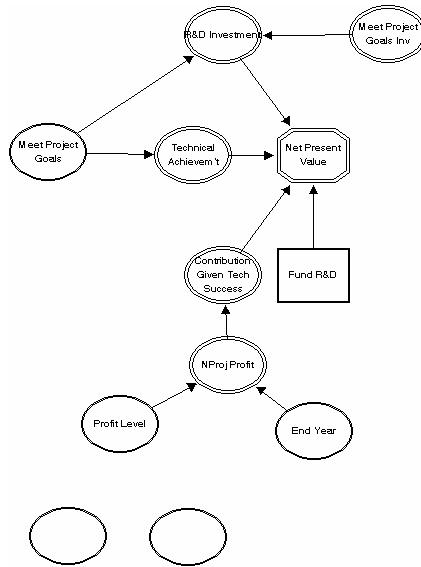
24. Double-click on the new left hand node, enter "Market Size" for the Name, and select "millions of dollars" for the units. Click the "Range" tab at the bottom, and enter the range 30, 20, 15 for the values (use the Enter key to go between entries). Click the red box with the x at the upper right of the window to close the edit box.
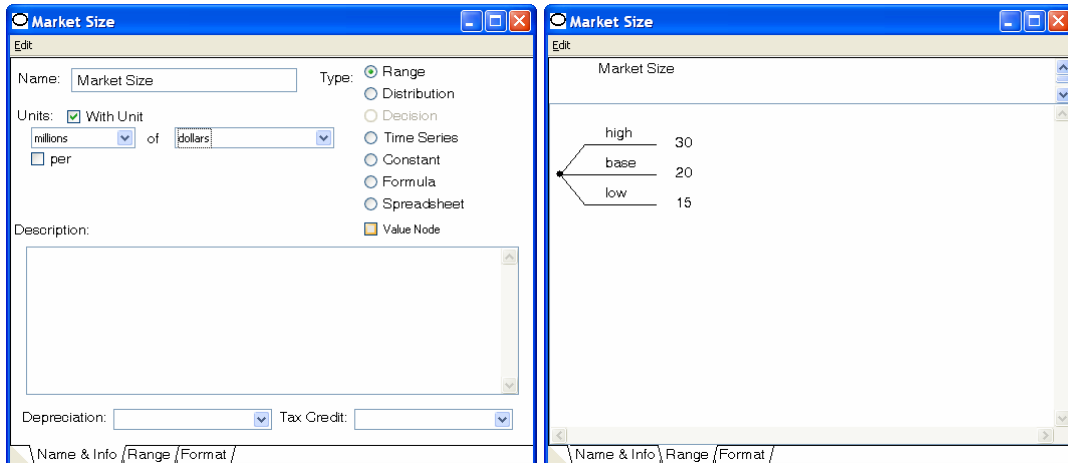
25. Double-click on the new right hand node, enter "Market Share" for the Name, and select "single of decimal fraction" for the units. Click the "Range" tab at the bottom, and enter the range .6, .5, .2 for the values (use the Enter key to go between entries). Click the red box with the x at the upper right of the window to close the edit box.
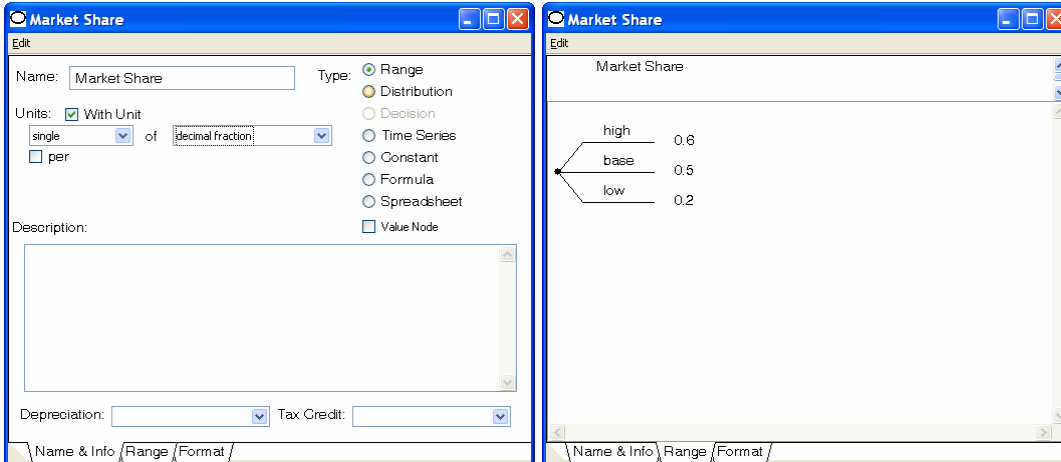
26. Click on the "Market Size" node and drag it onto the "Profit Level" node. When one node gets over the other, a line will appear, and when you release the mouse button, an arrow will be drawn from one node to the other. Repeat for the "Market Share" node.
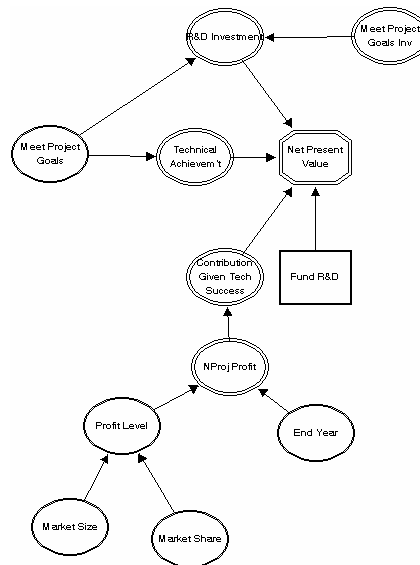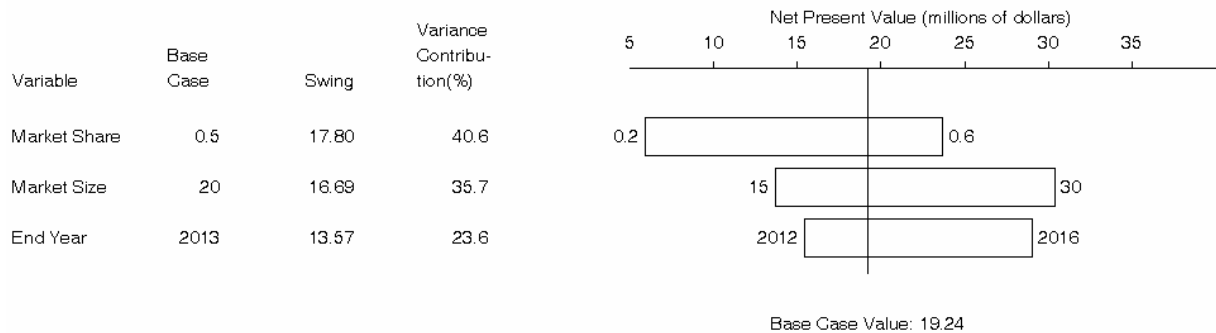

27. Double-click on the "Profit Level" node and choose the "Formula" radio button. The "Range" tab at the bottom of the box will disappear, a "Formula" tab will appear, and you will be taken to that tab. Enter "= Market_Size * Market_Share" into the box (you can enter the names by double-clicking them in the box at the upper left). Click the red box with the x at the upper right of the window to close the edit box. You will be asked whether you want to keep your changes – click *Accept*.
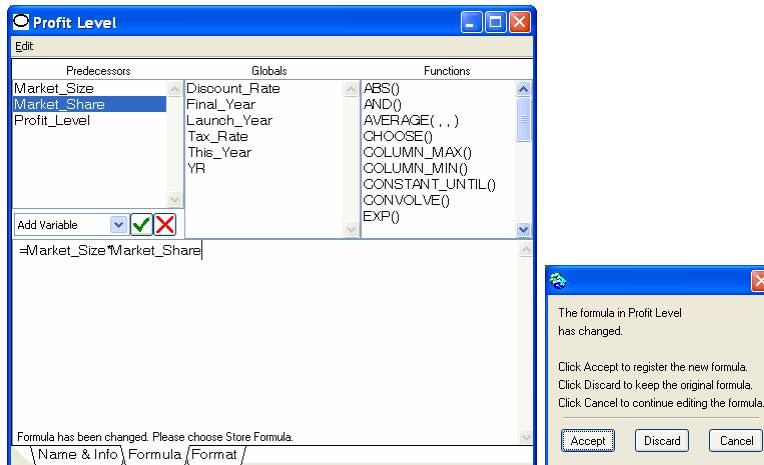
28. To evaluate, click the coach icon and click *Run Coached Analysis.* Click *Proceed* when told that the program had to discard the old model.
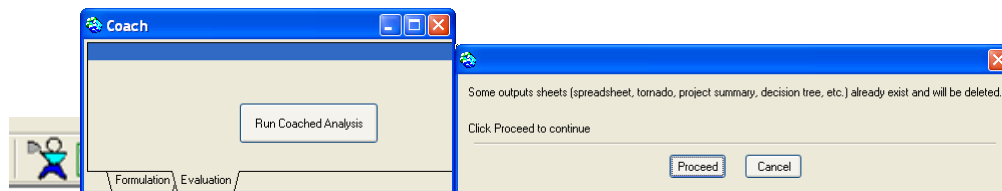
29. The results will reflect the new model. For instance, the Deterministic Sensitivity tab now shows a tornado diagram with three bars.

Variable	Base Case	Swing	Variance Contribu- tion(%)
Market Share	0.5	17.80	40.6
Market Size	20	16.69	35.7
End Year	2013	13.57	23.6

Net Present Value (millions of dollars)

Base Case Value: 19.24

Legal Notes

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