



**A
GREAT
DECISION
EVERY TIME!**



The Unleaded Amoco Decision

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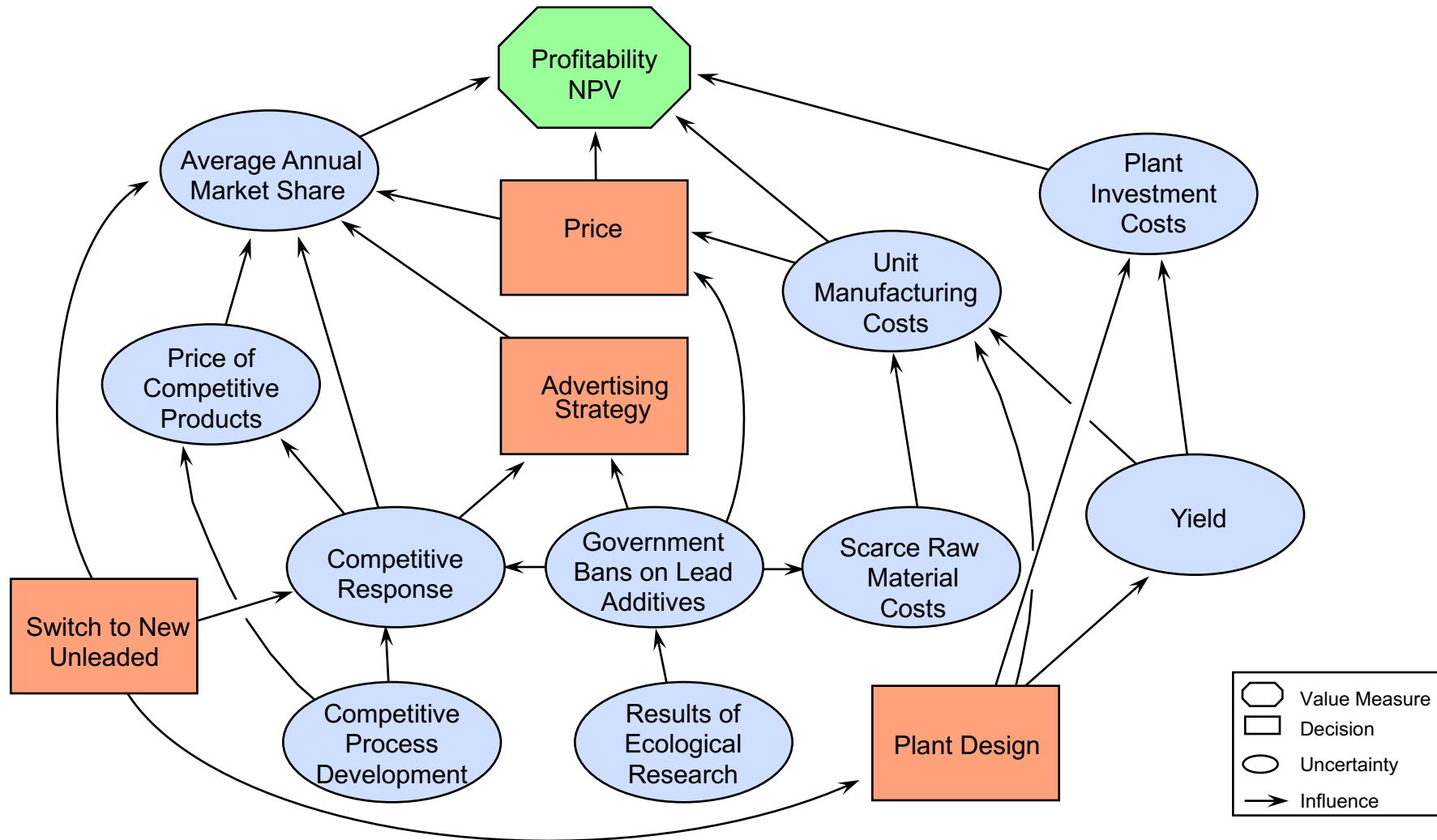
Conference of the Society of Decision Professionals
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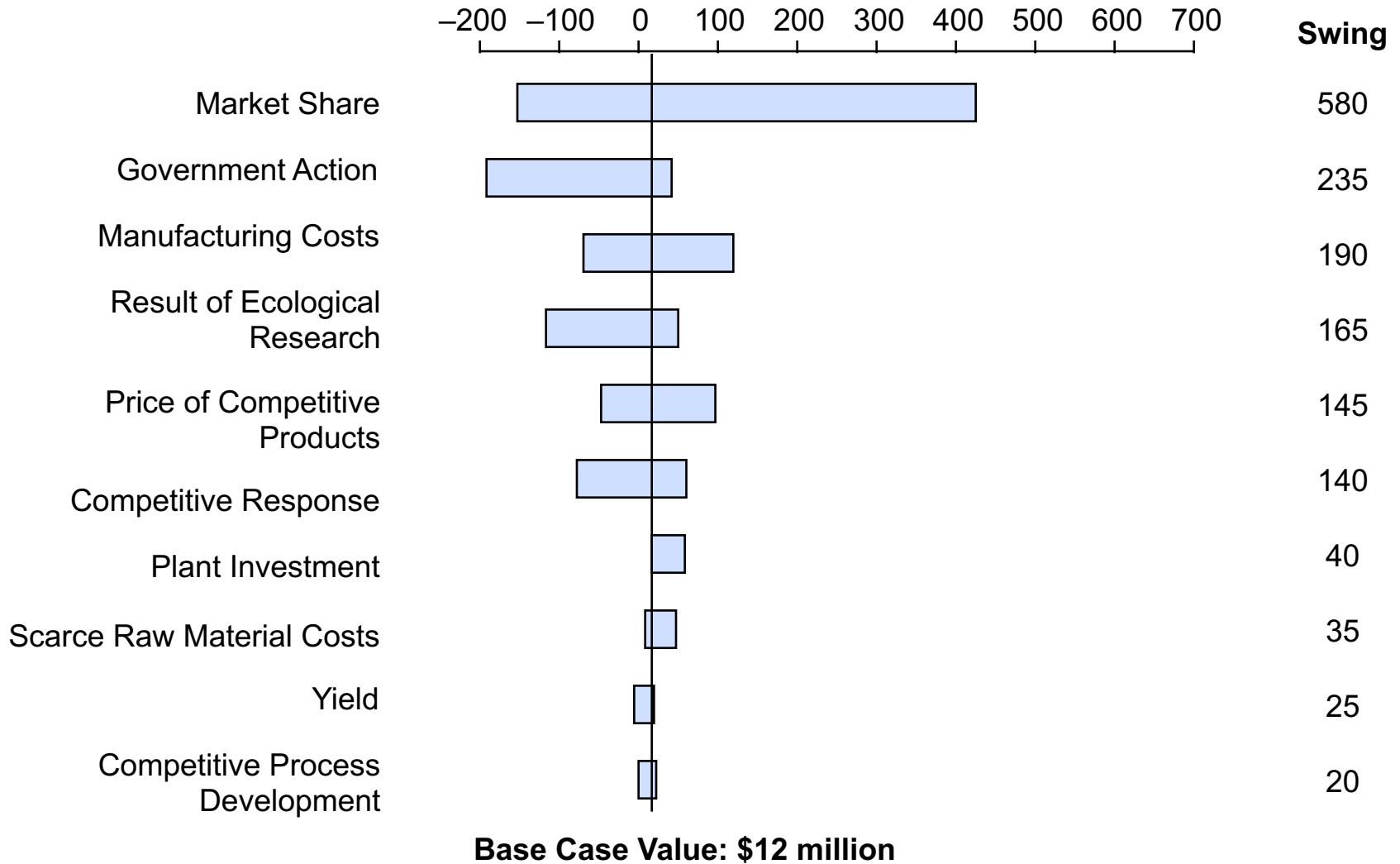
Some of the most controversial questions and issues were the following:

- When, if ever, will the government ban leaded gasoline?
- If we do switch to unleaded now,
 - What will our competitors do?
 - How will our customers react?
 - Will we hasten government action?
- Is the general public really prepared to pay for environmentally safer products?
- How much more expensive will manufacturing the unleaded gasoline be?
- In case of a ban on leaded gasoline, will competitors be able to develop their own technology or will they have to license ours?

A relevance diagram shows how these questions and issues affect business profitability.

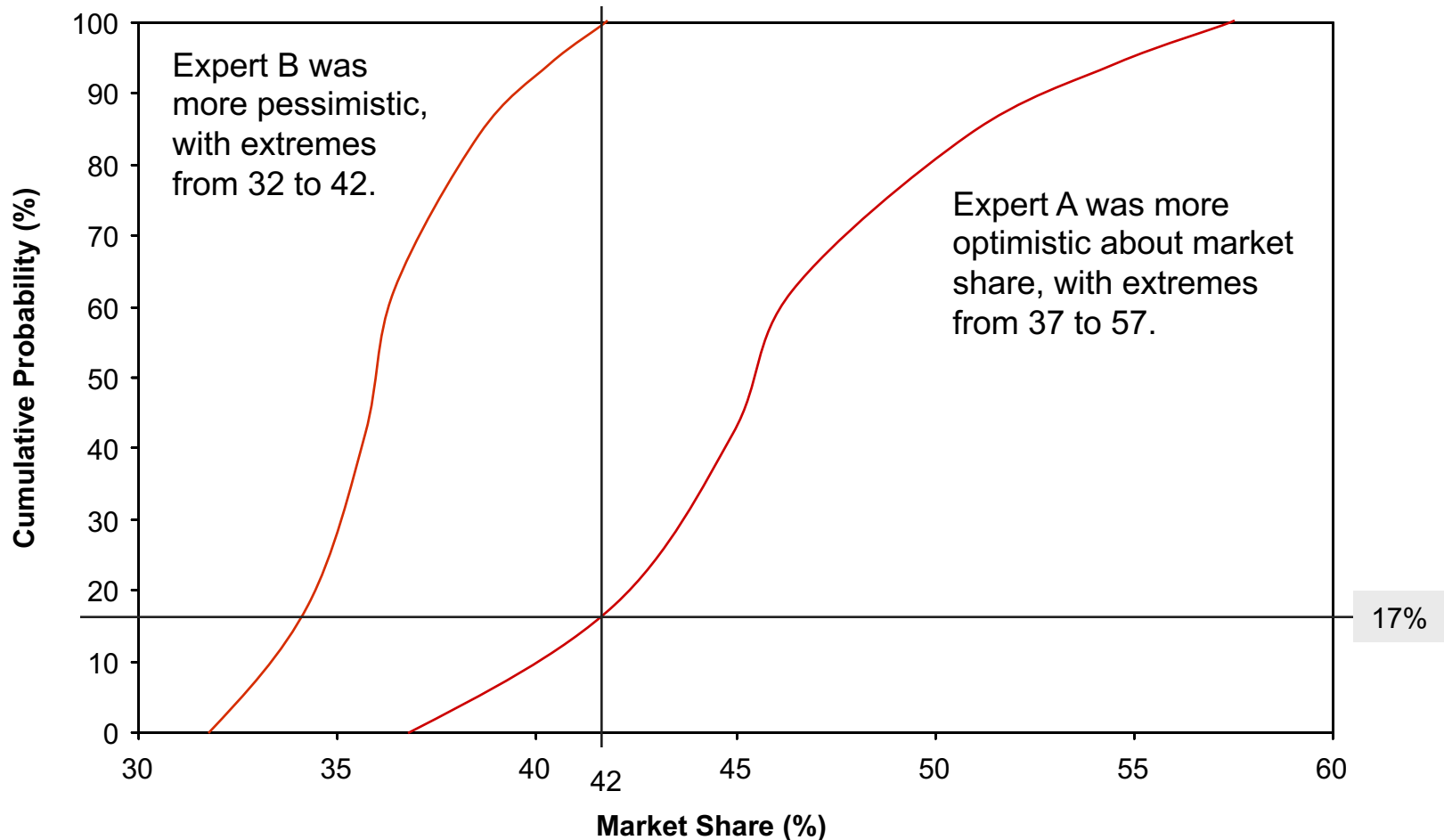


The sensitivity analysis showed that market share was the greatest “swing factor.”

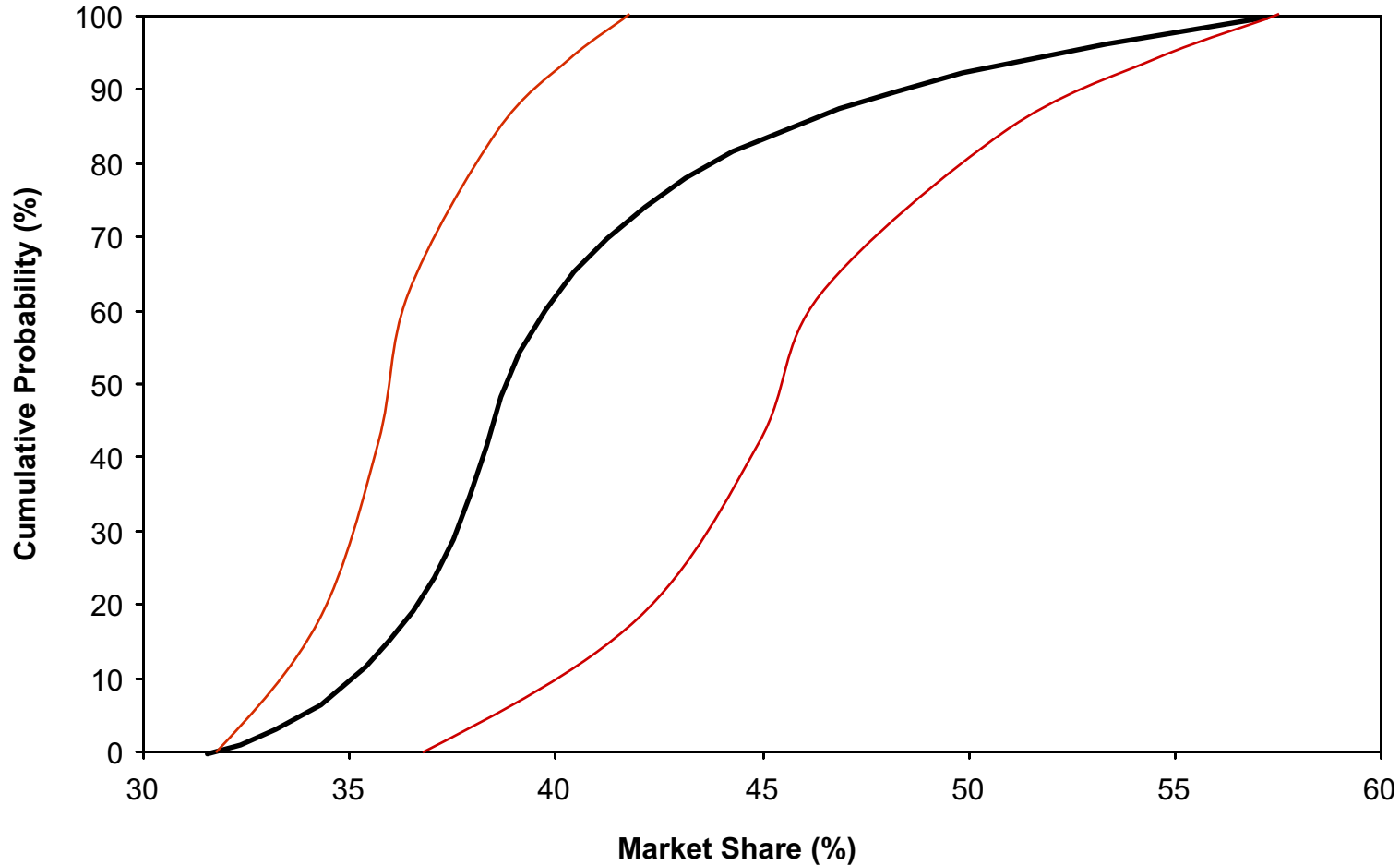


The judgments about market share differed greatly among the dozen experts.

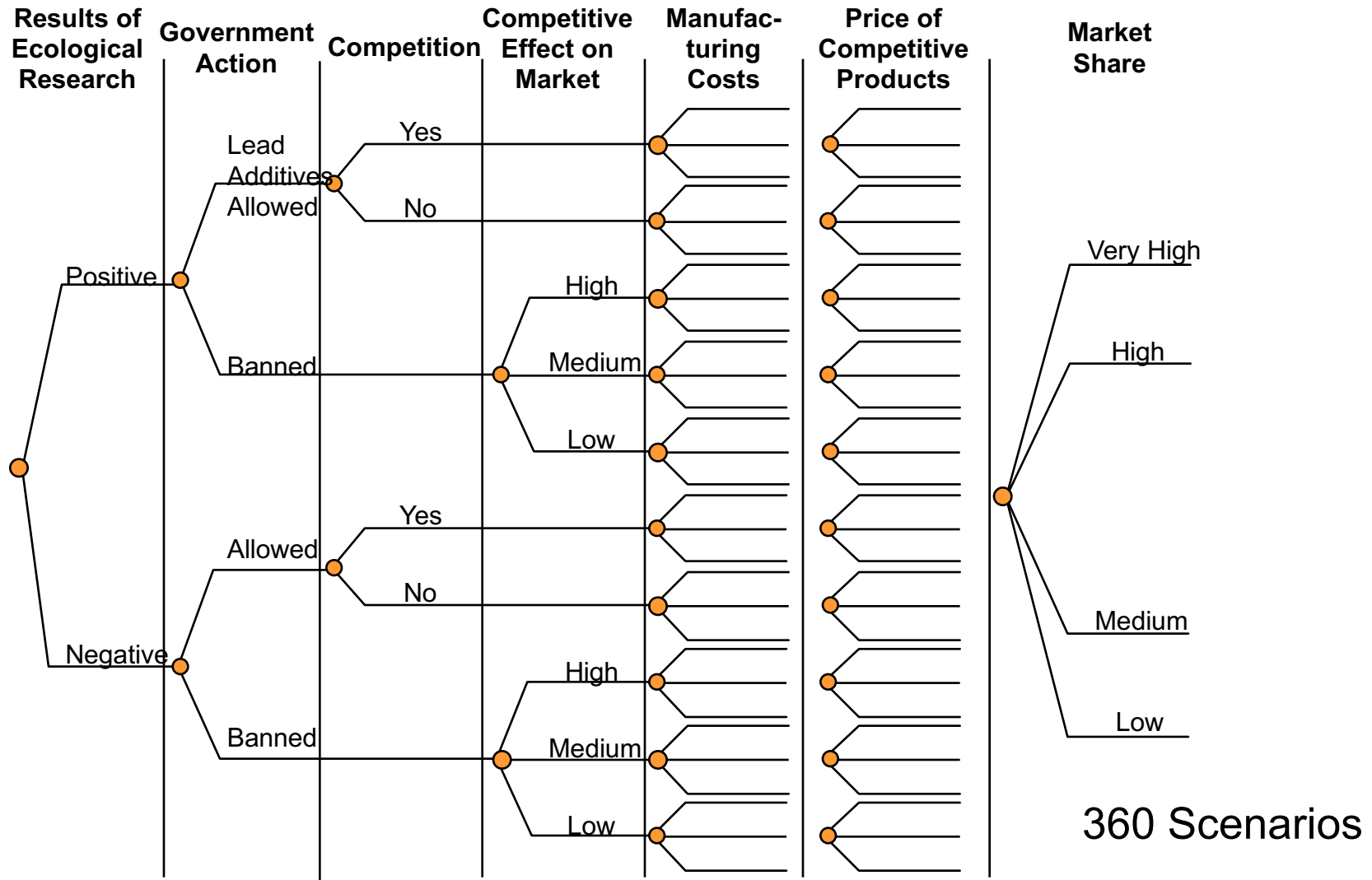
A curve to the right is a higher assessment; a more vertical curve shows a narrower range.



Ultimately the president provided his distribution.



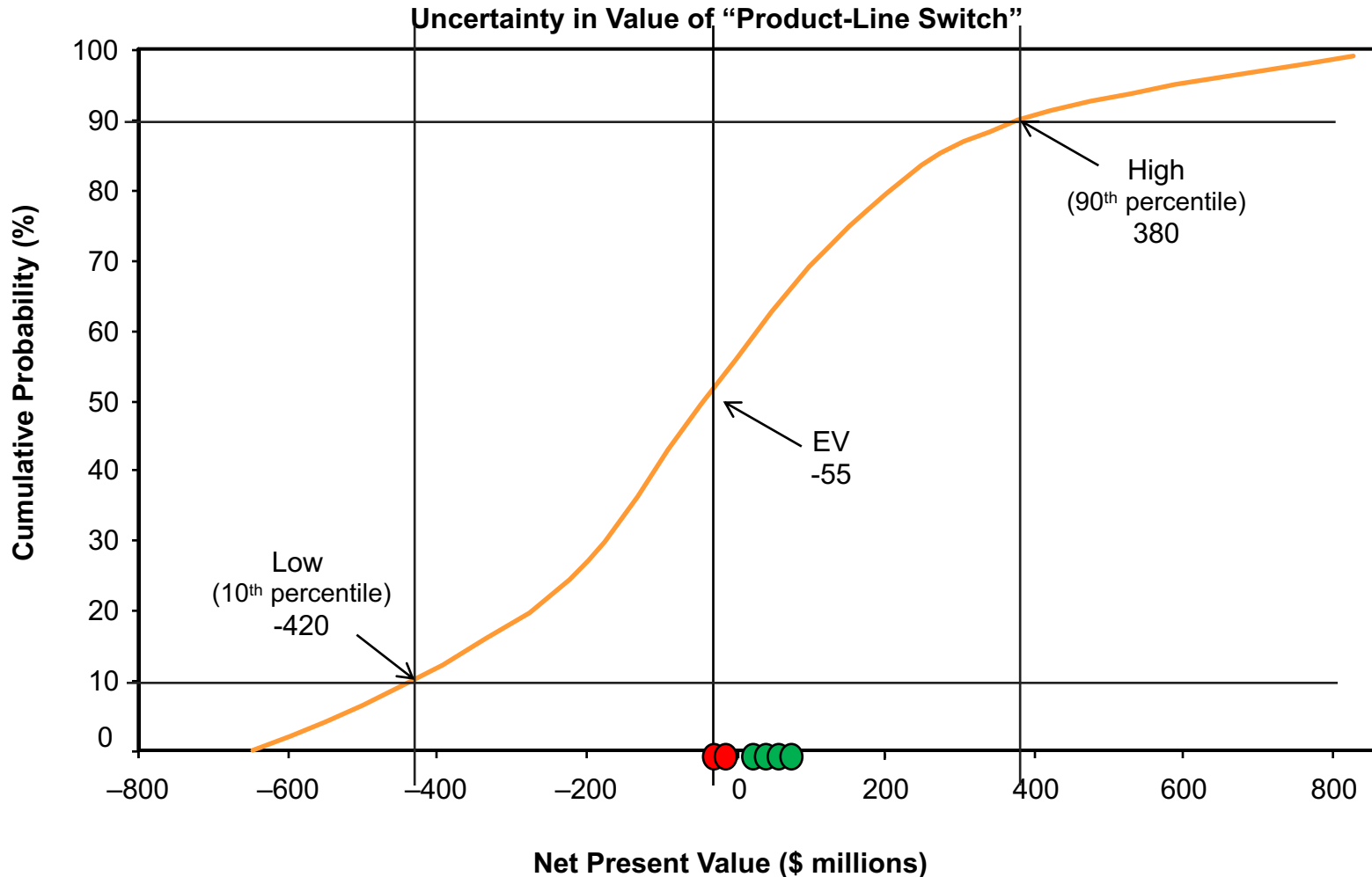
The schematic probability tree structure shows the scenarios used in the evaluation.



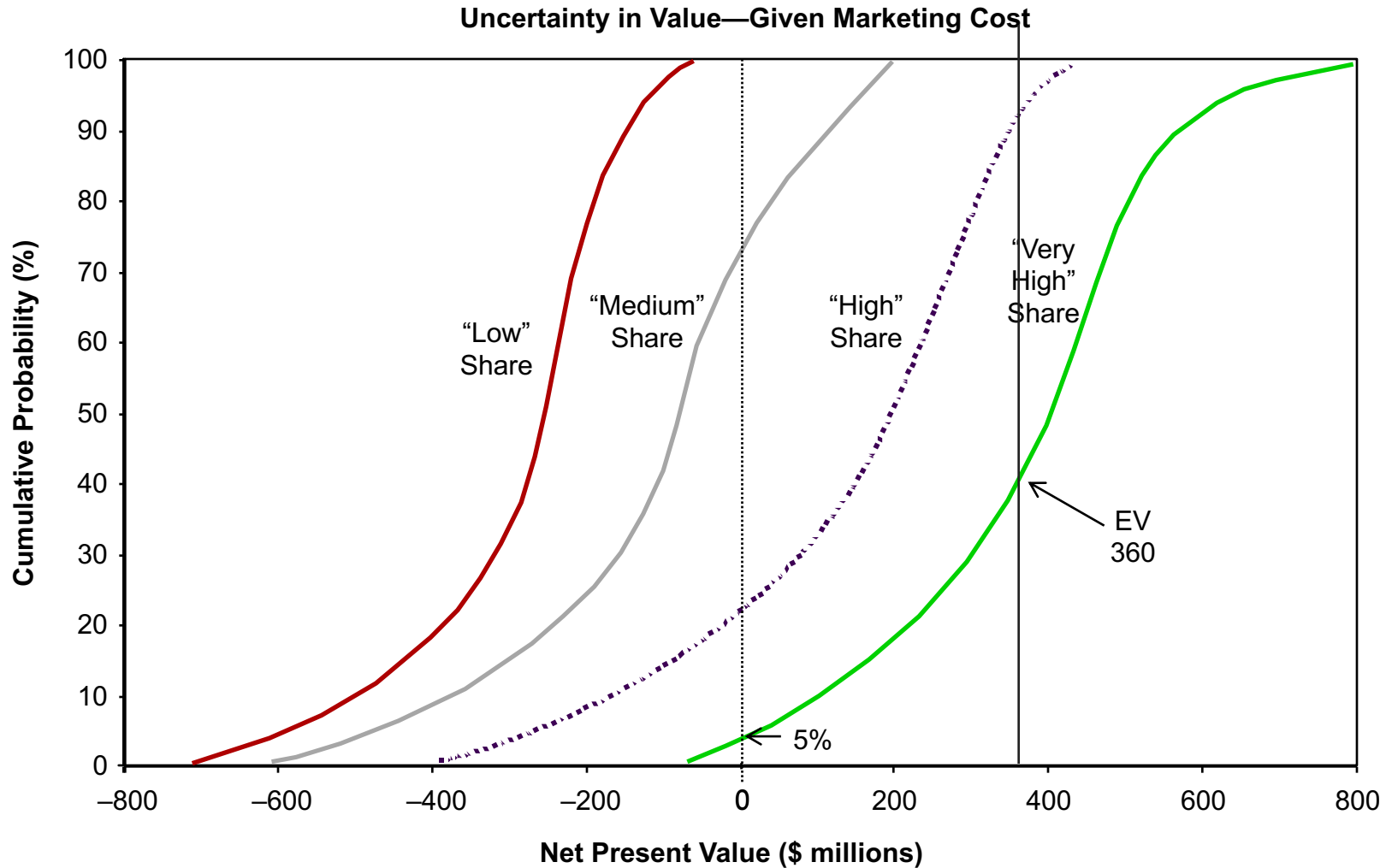
We compute the probability and NPV for each scenario.

Path Description (key uncertainties 1–7)							Probability	Net Present Value (\$ millions)
1	1	1	1	1	1	1	.00135	624
1	1	1	1	1	1	2	.00501	672
1	1	1	1	1	1	3	.00135	668
1	1	1	1	1	2	1	⋮	⋮
1	1	1	1	1	2	2	⋮	⋮
1	1	1	1	1	2	3	⋮	⋮
1	1	1	1	1	3	1	⋮	⋮
							⋮	⋮
							⋮	⋮
							⋮	⋮

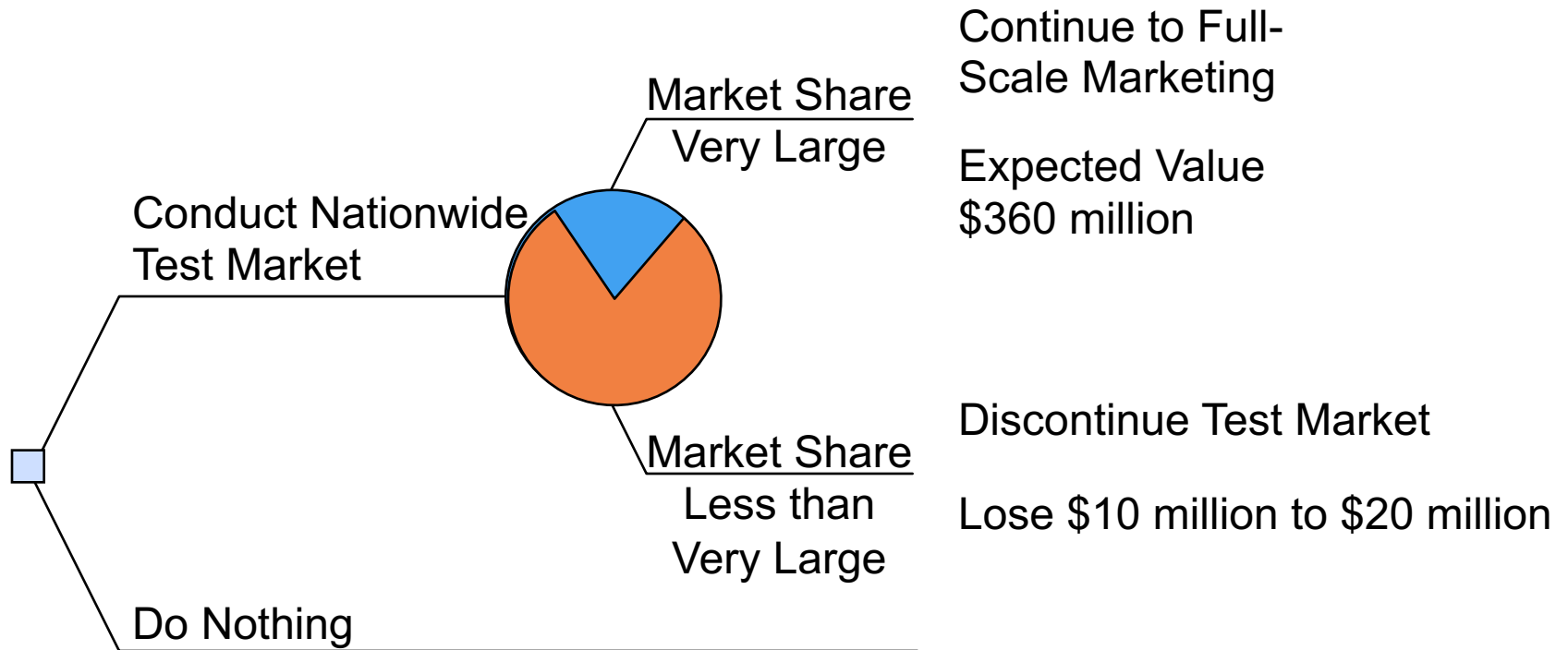
The results of the analysis showed a small negative expected value with a lot of uncertainty.



However if market share were very large, the investment would be very attractive.



A first cut at the test market decision showed it to be worthwhile.



The decision quality approach turned out to be much faster and cheaper than the task force effort as well as more comprehensive and more insightful.

- The elapsed time comparison was 3 to 1.
- The project cost comparison was 10 to 1, largely because of extensive and expensive (but economically unjustified) studies of manufacturing cost.
- In his final report to the board, the president relied almost entirely on the decision analysis presentation—because it was more concise and easier to explain!

Thank You