



How Can We Know the Answer is Right?

June, 2013



How Can We Know the Answer is Right?

Lone Star's tag line is "*The Right Answer.*"

While that sounds great, it's fair to ask, how can Lone Star know the right answer? Perhaps more important for decision makers we support, how can *they* know if the answer is right?

These two questions are at the core of getting actionable results. Decision makers can't be expected to rely on projections with dubious foundations.

The two questions (can Lone Star know, and what can our clients know) are of course related. This paper deals with both questions. The answers fall into the following categories:

- Tools
- Transparency
- Processes

Tools

Lone Star's tools, like TruNavigator™ are designed to deliver understanding, not just numbers. They provide several different ways to visualize the results of a model built using our tools. Understanding, from visualization, sensitivity analysis and other features of our modeling environment is critical to delivering answers with confidence.

Visualization is the difference between computing "a number" and understanding it. For our toolset it means a visual presentation of the model, making it easy to see the representation. It also means multiple and powerful ways to present simulation results.

Another important feature of our tool set is speed. Our tools allow near-real time "what if" analysis. This is critical to exploring sensitivity analysis, to building intuition, and to gaining confidence. Most models built with our tools run in a few seconds. Even the largest models run in a few minutes. The alternatives would be to wait hours in most cases. The slow repetition rate is deadly to building understanding and confidence. It's why we are committed to blazing fast computational engines producing thousands of Monte Carlo trials.

The legacy of these toolset features pre-dates Lone Star. Anyone familiar with the work of Dr. Ron Howard, who launched modern Decision Analysis (DA), will quickly recognize his work. They will also notice the work of other early DA pioneers. But our tools have moved on. Most DA tools are second generation products. A few are third generation. Only Lone Star uses 4th generation tools with powerful visualization, and high speed, in addition to the best legacy features of DA; sophisticated mathematics, easy to use in modern computers.

Visualization is the difference between computing "a number" and understanding it.



Transparency

Transparency means “easy to see through.” That means a model should be easy to see through, looking to the reality being modeled and looking through the model from input to output, or backward from output back to inputs. These three perspectives are three tests of transparency. If that sounds like common sense, it turns out to be sadly rare. Most modeling and simulation toolsets are not transparent in any of these three tests. Spreadsheets are a great example; most spreadsheet models are anything but transparent.

Transparency is a result of both our tools and processes. It’s also a result of a business philosophy. We believe analysis is more actionable when understandable. We serve our clients better when they can act on information we provide. That’s more likely to be true when our tools (and we) provide transparent models.

The manifestations of transparency in our models are model features;

- Visual representation of the model that is easy and natural to understand (not limited to those who can write code or have university mathematics training).
- Documentation built in to the models, and connected to the documented objects (answering questions like, ‘where did that number come from?’)
- Easy to trace calculations that can be manually checked by an examiner
- Built in audit and testing functions
- Built in model navigation aides

Processes

Many of the analysis processes in use at Lone Star are similar to good practices in a project of any kind. We have disciplined documentation, peer reviews, internal audits. But we’ve learned that delivering results that matter to clients requires more than internal discipline during the execution of a project.

It requires disciplined pre-analysis work to define clearly the issues, questions and parameters of the analysis. It requires thoughtful post-analysis work to clearly communicate and document outcomes.

Process discipline, training, documentation; these things lack glamour, but they are necessary. They build the confidence our clients have in us that we truly are delivering “The Right Answer.”

*Process discipline,
training, documentation;
these things lack glamor,
but they are necessary.*



Summary

A recent study found several causes for failed analysis efforts. They were

- Distractions (Non – relevant stuff gets in the model)
- Complexity (Model is needlessly big)
- Implementation (Automation of the Model fails or is flawed)
- Interpretation (Simulation results are understood in ways leading to improper conclusions)
- Acceptance (Decision maker rejects results)

Lone Star's Tools, Transparency, and Processes address all these challenges. Together they are the reason why customers tell us we delivered the right answer.