Maximum Transparency Modeling

The consistent creation of transparent models requires experience, talent, and hard work. Perhaps the biggest challenges are identifying what elements of reality should be modeled, how they should be modeled, and what can be safely ignored to provide maximum transparency. The computer provides useful tools to aid in these tasks, but it is ultimately the skill and creativity of the people which will determine the quality of the model and the benefits of the resultant strategy.

Models should start simple, adding realism, accuracy, and detail step by step. Adding realism to a model often means including critical information that was overlooked. Additional detail could be a new choice, uncertainty, or outcome to further explain a probability, payoff, or other existing model element. At some point, adding more details no longer increases transparency. While we would like to be transparent about everything, in reality we attempt to achieve a practical level of transparency. Maximum transparency occurs at a balance between realism and simplicity.

We would like to explicitly model all of the most relevant information, including "risks" and "qualitative information". For example, when a corporation takes on a large and risky venture, it should consider what other effects on shareholder value a large and sudden cash loss may have (e.g., higher loan rates, bankruptcy costs, etc.). The majority of a model's information is qualitative not quantitative. For example, structural information is qualitative: the choices now and in the future, the order of events, the selected relevant variables, etc. In addition, some relationship information is qualitative; like that the chances of rain tomorrow are higher than the chances of it being sunny. Qualitative information is thus linked to shareholder value through the model.

Often, detailed information may not exist or be prohibitively expensive to obtain, yet the value of non-specific potential opportunities and effects should still be modeled as payoffs. All payoffs, whether cash or otherwise, should be in terms of shareholder value, although different types of payoffs could be defined and tracked separately. Many models end with payoffs representing non-specific potential opportunities and effects since detailed information about the distant future is often scarce. These payoffs should be removed and modeled in detail as new information and insights become available as the future approaches.

Strategies currently devised with mental models could be modeled via a single payoff as a first step, and then subsequently modeled in greater detail. For example, suppose one of a firm's current high-level strategies is simply to "build the best product." This could begin as a model with a single decision with two outcomes: "build the best product" or "build a lesser product." Each of these choices would then lead to an end-of-model payoff, with the "build the best product" choice leading to the higher payoff and thus be the choice that maximizes shareholder value. It's possible that this payoff could then be modeled in more detail and that through this modeling process the model builder has an insight that each new product possibility could be analyzed separately. The model builder then replaces the former high-level strategy with a more valuable and detailed strategy that continues to maximize shareholder value but with more choices and more information.