OptQuest vs. Microsoft Excel Solver

OptQuest has important advantages over the Microsoft Excel Solver. OptQuest features that Solver lacks include the following.

- **OptQuest** has the ability to avoid being trapped in locally optimal solutions to problems that contain nonlinearities (which commonly are present in real world problems). The nonlinear solution component of Solver is only able to obtain a locally optimal solution — a solution whose quality may be substantially inferior to the quality of the solutions provided by OptQuest.

- **OptQuest** is able to handle nonlinear relationships that are not specifiable by the kinds of equations and formulas that are used in mathematical programming formulations. Excel's Solver does not apply to nonlinear problems other than those that can be expressed in "classical" mathematical programming form. Of particular practical importance, OptQuest can be applied to solve a problem whose objective and constraining relationships can only be captured by means of a simulation, which is beyond the capacity of Solver to deal with.

- **OptQuest** provides the ability to solve problems that involve uncertainties, such as those arising from uncertain supplies, demands, prices, costs, flow rates, queuing rates and so forth. Solver has no capability for handling problems of these types, though they represent applications that are crucially important in practice.

In sum, distinguishing features of OptQuest include the ability to avoid being trapped in local optima, the capacity to handle real world (as opposed to "classical") nonlinearities, and the power to handle relationships embodied in a simulation — relationships that lie at the heart of many applications in business, engineering, science and government.

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