Chapter XIII

The Internet: An End to Classical Decision Modeling?

Ray J. Paul
Brunel University, UK

INTRODUCTION: DECISION MODELING—CAN IT NOT BE?

Problem formulation, data collection, modeling, testing running, analyzing and results–these are the pre-Internet staged approaches to decision aiding, when the modeling time allowed to the analyst was to some extent determined by the fact there were few alternative approaches that were either better and/or faster. It is possible that the Internet now facilitates “cut-and-paste” modeling, the development of an acceptable approximate model, suitable for the immediate decision, constructed from bits of programs from anywhere on the Web. It is this possibility that is examined in this chapter. First we look at classical decision modeling, then at a hypothesized Internet alternative approach and lastly mention some dangers of the Internet approach, which is, what might happen to the benefits of mental activity?

CLASSICAL DECISION MODELING: CAN IT BE?

Classical decision modeling can be exemplified by discrete event simulation modeling. Giaglis et al. (1996) make the case for using simulation modeling as follows, first by defining the decision modeling objectives, and then showing how simulation matches these objectives.
Decision Modeling Objectives

It has been argued (Willcocks and Smith, 1995; Galliers, 1993) that businesses and business processes are complex systems, and therefore carefully developed models are necessary to understand their behaviour in order to be able to design new systems or improve the operation of existing ones. As businesses are essentially ‘socio-technical’ systems, we can distinguish the basic requirements of the decision makers regarding the modeling process into two separate areas: ‘technical’ requirements which refer to those needs that call for the application of engineering principles in process analysis and design, and ‘social’ requirements which refer to the needs that emerge from the social nature of business systems. These requirements include:

Technical Requirements

**Formal Modeling.** Formal engineering principles should be adopted during the modeling process in order to enable the development of models that can be readily understood and agreed upon by all parties, thus providing a common basis for decision making.

**Quantitative Modeling.** Managers need to have quantitative information that will allow for informed decision making (e.g., cost-benefit analysis) and for direct comparison between alternative system designs.

**Stochastic Modeling.** Modeling should take into account the stochastic nature of business processes, especially the way in which they are triggered by external factors and should allow for representation of and experimentation with situations where a great degree of uncertainty exists. Sensitivity analysis of business models becomes a significant issue in this case.

**Model Documentation.** Models should be easy to document for exchanging information between modelers, analysts and decision makers. Model documentation can also be used as a reference in subsequent modeling exercises and/or if the model development teams change.

**Model Adaptability/Reusability.** Models should be easily updateable to follow changes in actual processes. Thus, they can be continuously used for future modeling exercises. Reusable models could assist in reducing the cost of model building and can provide an additional means of justifying the initial investment.

**Objective-Driven Modeling.** Decision modeling is usually performed having in mind specific business goals to be achieved through the modeling exercise. The evaluation of alternative configurations is therefore highly dependent on the objectives of the particular study. Business models should reflect this requirement of decision makers and allow for output analysis that can be configured according to objectives so as to provide alternative views of measuring business performance.

Social Requirements

**Feasibility of Alternative Designs.** Modeling and decision making in business contexts should take into account such factors as legislation restrictions, user
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