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### **THE ROLE OF COMPUTER MODELS IN WARGAMES A PRACTITIONER'S VIEW**

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#### **ABSTRACT**

Models are for keeping track of the wargame, not for making decisions. The purpose of computer models is to synthesize the decisions of all teams to illustrate the "bottom line" impact-teams should not be playing against a model nor should the model constrain their options.

#### **INTRODUCTION**

A wargame ensures the military field commander or the CEO, sees events he had not considered, traps and ambushes he might have fallen into. Admiral Nimitz and his staff, while all were recognized experts in naval strategy, nonetheless wargamed the World War II battles of the Pacific during the 1930s at the Naval War College in Newport, Rhode Island. After the war, they said the only surprise they had not foreseen was the kamikazes. Complex, sophisticated computer models were not used in these extremely successful wargames.

#### **WHY WARGAMING**

There is a competitive dynamic, namely that the players (enemies, competitors, or stakeholders) are affected by each other's actions. The market, or battlefield, reaction is partly or wholly unpredictable because of rapid change, the introduction of new technologies, or shifts in market demands- none of which could be forecast with a deterministic model. The validity of the answer will be greatly enhanced if the problem is looked at dynamically over time (e.g., several years). There are too many unknowns to be amenable to a straightforward, quantitative solution-there may be too many dimensions of the problem to consider or it is impossible to capture the interactions among all of these. Most

important, wargames show what can happen in the real world. They are not academic exercises. Participants live through possible worlds, examining competitive factors that are intractable to conventional analysis and which could lead unknowingly into a fatal ambush of one's own making.

#### **MODELING WILL NOT WORK**

In these situations, typical analysis-intensive modeling will not work because it will only interpret the past and suggest how the future might evolve if, indeed, there is little change from the past. Generally, this assumption is self-defeating, as the past never really repeats itself. Models cannot predict how markets will behave when faced with changing conditions. Models that use historical analysis to plot future outcomes can be dangerously deceptive when these conditions apply. Forecasts are, in the end, simply a best guess at the future, tempered by informed judgment as to how trends may play out over time. The risk here is that it is very easy to believe the future that plays into our own set of biases. Compounding this is the absence of any way of predicting when discontinuities might logically occur or what their impact might be.

#### **CATALYST FOR CHANGE**

In a wargame, to challenge the traditional view of "reality" you must break away from current paradigms-and computer models based on these same current, if not soon to be obsolete, paradigms. To understand how someone views the world you must stand in their shoes-in business, this includes the customer for whom a model is a weak surrogate. To achieve real strength you must focus the company's full intellectual power on the problem and its solution. Market reaction cannot be left to a computer model based on yesterday's product characteristics and buying criteria. To generate new ideas you need competitive interaction. Models, at best, calculate results for "today"-a model is rarely a good crystal ball and never a good storyteller. Experience changes the way you see and think. Models, however sophisticated, can increase your knowledge of the past or present, but cannot cause you

to think creatively about the future. A coherent story emerges from game interactions that explains why things happen. Models don't do that.

### WHAT OTHERS SAY

Computer models are, of course, not all bad. Models do eliminate lengthy computations and facilitate game play and decisions. (Campion, 1995). But, models can hinder game play by introducing too much detail or allowing results-oriented decision makers to become involved in playing the model instead of the game (Oswalt, 1993). Too much detail interferes with learning objectives. As conditions change, the use of a now obsolete model becomes counterproductive. Players can come to understand a model so well that they play the model versus play the game (Rollier, 1992). As attempts are made to artificially boost model-calculated performance, the wrong lessons can easily be learned. And, a "trial and error" process of submitting decisions and getting feedback can unfortunately become the mode of play- rather than strategic thinking. Critics will fault a game for not having a theory behind it. But, if one is going to build a game around a model, then the burden falls squarely on the designer to vouch for the validity of the theory (Goodman, 1996)- today and for the future as to be played. There will always be a debate between the qualitative and quantitative focus of wargames. Game models often do not account for the qualitative differences in decision-making (Keyes and Wolfe, 1990). Instead of complex models, participants can be switched from the role of players to designers (Goodman, 1995). Phenomena are rendered explicit for review, discussions, and revision. Players then design rules to capture the essence of this phenomenon as they have come to understand it-behaving in a way that they would behave outside the context of the game. Games today often incorporate increasingly sophisticated models and problem-solving methodologies. But, a game's real value is not in the technology (Carbonara, 1997). The real value is whether the game feels real, focuses on well defined choices, and provides a direct connection between players' decisions and their performance in the market.

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### BIOGRAPHIES

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