

INTRODUCTION TO SIMULATION

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ABSTRACT

This presentation will explore some of the fundamental characteristics of discrete-event simulation modeling, examine the utility of the simulation tool on the basis of industrial experience, discuss the strengths and weaknesses of simulation, and give some suggestive examples of simulation applications.

The topic sequence follows...

...an introduction to simulation through a simple example, including possibilities for the generation of random numbers by algorithm

...the position of simulation in the spectrum of methods useful in systems analysis and design

...the relative utility of discrete-event simulation as a management science tool, based on published surveys taken among management science practitioners

...probable reasons for the high utility of the simulation tool

...the application scope of simulation

...a second example for simulation: optimization of the decision variable values in a production management context (GPSS-based approach)

...characteristics of the unaugmented FORTRAN-based approach to the production management optimization problem

...perspectives on some key simulation programming languages, including GASP, GPSS, SIMSCRIPT, and SIMULA

...components of a balanced simulation study

...perspectives on the economics of simulation