

Estimados suscriptores:

Sam Savage (Stanford University), Stefan Scholtes (University of Cambridge) y Daniel Zweidler (Shell Company) nos presentan en su artículo titulado **Probability Management** (publicado en *OR/MS Today*) un conjunto de estrategias para hacer más fácil y confiable el uso de distribuciones de probabilidad como variables de entrada en aplicaciones de Simulación (y consecuentemente, de Análisis de Decisiones). Como podemos ver, la industria petrolera (esta vez representada por Shell) sigue a la vanguardia en la asimilación de Análisis de Decisiones y modelos probabilísticos.

Les incluyo unos párrafos que describen sus propuestas. Espero que les sean útiles.

Un cordial saludo.

*Roberto Ley Borrás*

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### **Probability Management**

By Sam Savage, Stefan Scholtes and Daniel Zweidler

#### SELECTED FRAGMENTS

Planning for an uncertain future calls for a shift in information management — from single numbers to probability distributions — in order to correct the "flaw of averages." This, in turn, gives rise to the prospect of a Chief Probability Officer to manage the distributions that underlie risk, real portfolios, real options and many other activities in the global economy.

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Today, simulation does for uncertainty what the light bulb of 1880 did for darkness. (We use the word "simulation" loosely to mean any sort of stochastic analysis based on modeling probability distributions through sampling.) If properly used, it can illuminate. Simulations, however, require probability distributions for their uncertain inputs, much as light bulbs require electricity. Currently, users of simulation need to specify the type of distributions used to generate their input values. This is analogous to requiring the users of light bulbs to generate their own electricity.

Probability management is based on three underpinnings, which we will describe in terms of this analogy:

1. interactive simulation,
2. stochastic libraries, and
3. certification authority.

Interactive simulation tools play the role of light bulbs by illuminating uncertainty and risk for a wide population of managers. New technologies will run simulations nearly instantaneously each time the parameter of a business model is changed. Interactive visual feedback will provide management with an experiential understanding of uncertainty and risk.

Stochastic libraries contain certified probability distributions for use in simulations throughout an organization. They are analogous to the electric power grid. By providing a ready source of input distributions in standardized formats, both theoretical knowledge and effort on the part of the end user are greatly reduced, facilitating the use of probabilistic modeling.

Certification authority is required for the distributions in the stochastic libraries of an organization much in the way the local power authority ensures that you always get a standard voltage from your wall socket. A suggested name for this certifying authority is the Chief Probability Officer (CPO), and the person or office wearing this hat requires a combination of both statistical and managerial skills. Ultimately the CPO must find the right balance between authorizing complex multivariate statistical time series, which only a few specialists understand, versus single "average" scenarios, leading to the flaw of averages.

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