

# Modeling & Solving Stochastic Programming Problems in Supply Chain Management using *Xpress-SP*<sup>1</sup>

Alan Dormer

(email: alan.dormer@dashoptimization.com)

Alkis Vazacopoulos

(email: av@dashoptimization.com)

Nitin Verma

(email: nitin.verma@dashoptimization.com)

Horia Tipi

(email: horia.tipi@dashoptimization.com)

Dash Optimization, Inc

560 Sylvan Avenue, Englewood Cliffs, NJ 07632

(May 2005)

## Abstract

Supply chains continually face the challenge of efficient decision-making in a complex environment coupled with uncertainty. While plenty of forecasting and analytical tools are available in the market to evaluate and enhance Supply Chains' performance, the current functionalities are not sufficient to address issues related to efficient decision making under uncertainty. In this paper we discuss expanding the modeling paradigm to incorporate uncertain events naturally and concisely in a stochastic programming framework, and demonstrate how *Xpress-SP* – a stochastic programming suite – can be used for modeling, solving and analyzing problems occurring in supply chain management.

---

<sup>1</sup> Forthcoming in "Supply Chain Optimization", Editors: Joseph Geunes and Panos Pardalos, Kluwer Academic Publishers, 2005.