Editorial

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Biographical notes: Moustapha Diaby is an Associate Professor of Production and Operations Management at the University of Connecticut. He received a PhD in Management Science/Operations Research, MS Degree in Industrial Engineering and BS Degree in Chemical Engineering from the State University of New York at Buffalo. His teaching and research interests are in the areas of mathematical programming, manufacturing systems modelling and analysis, and supply chain and logistics management. He has published more than 50 refereed journal and proceedings papers, and serves/has served as a Reviewer and/or ad-hoc Editorial Team Member for many journals and government agencies.

Since the development of the simplex method by Geoges B. Dantzig in 1947, Linear Programming (LP) has been the dominant paradigm in Optimisation and Operations Research (OR) in general. Applications of LP are extensive, covering areas that are too many and diverse to enumerate due to a scope that spans all aspects of military, governmental, and industrial operations and service delivery systems that must be optimised.

The wide acceptance of the simplex method, right from its early days, was due to its ability to model important and complex management decision problems, and to produce reasonable solutions in a reasonable amount of computer time. However, the ever-increasing degree of globalisation of business enterprises has continuously presented new challenges over the past few decades. The increasing scarcity of resources combined with market requirements for high-quality, customisation, and at the same time, low-costs are making the need to optimise products and processes by looking at the entire supply chain increasingly vital. The stupendous growth of Technology has also driven a need to compete on the basis of time, and to explicitly deal therefore, with uncertainty. These challenges have called for the ability to solve large-scale and/or stochastic Linear Programming (LP) problems ever-more efficiently.

This Special Issue is about some of the recent developments in this respect. The first two papers, 'A review of LU factorisation in the simplex algorithm', and 'A review of the LU update in the simplex algorithm", (by Elble and Sahinidis) provide state-of-the-art reviews of the LU factorisation approach, which is the foundation of many of the simplex implementations geared towards large-scale systems. The third paper, 'A stochastic linear programming modelling and solution approach for planning the supply of rewards

in Loyalty Reward Programs' (by Cao et al.) takes a supply chain perspective on the emerging area (for OR) of Loyalty Reward Programs to develop a stochastic optimisation model and a (novel) methodology for solving it. Overall, we hope the Issue will be useful to researchers as well as practitioners who have interest in solving large-scale with or without uncertainty.