Realizing block planning concepts in make-and-pack production using MILP modelling and SAP APO - DTU Orbit (21/04/2019)

Realizing block planning concepts in make-and-pack production using MILP modelling and SAP APO

In the industrial application environment considered, different variants of a basic product type are produced using the same resources and following the same basic process plan. To support production planning and scheduling for this type of production system, the concept of block planning is introduced, which has gained considerable attention, particularly in the consumer goods industry. A block represents a pre-defined sequence of production orders of variable size. In order to demonstrate the practical applicability of the proposed block planning concept, we consider the production system of a major producer of hair dyes as a case study. We present two different implementations of the block planning concept. One utilizes the Production Planning/Detailed Scheduling module of the SAP APO© software. The other approach is based on a mixed-integer linear programming formulation. In contrast to the academic literature, a continuous representation of time is chosen. Thus, the number of variables and constraints could be considerably reduced. The approach suggested is computationally very efficient and provides the flexibility to model a variety of application specific features.

General information
Publication status: Published
Organisations: Department of Management Engineering, Technical University of Berlin
Contributors: Günther, H., Grunow, M., Neuhaus, U.
Pages: 3711 - 3726
Publication date: 2006
Peer-reviewed: Yes

Publication information
Journal: International Journal of Production Research
Volume: 44
Issue number: 18-19
ISSN (Print): 0020-7543
Ratings:
Scopus rating (2006): SJR 0.904 SNIP 1.356
Web of Science (2006): Indexed yes
Original language: English
DOIs: 10.1080/00207540600589127
Source: orbit
Source-ID: 192358
Research output: Contribution to journal › Journal article – Annual report year: 2006 › Research › peer-review