Decision support in hierarchical planning systems: The case of procurement planning in oil refining industries - DTU Orbit (19/12/2018)

In this paper, we discuss the development of decision support systems for hierarchically structured planning approaches, such as commercially available advanced planning systems. We develop a framework to show how such a decision support system can be designed with the existing organization in mind, and how a decision process and corresponding software can be developed from this basis. Building on well-known hierarchical planning concepts, we include the typical anticipation mechanisms used in such systems to be able to decompose planning problems, both from the perspective of the planning problem and from the perspective of the organizational aspects involved. To exemplify and develop our framework, we use a case study of crude oil procurement planning in the refining industry. The results of the case study indicate an improved organizational embedding of the DSS, leading to significant savings in terms of planning efforts and procurement costs. In general, our framework aims to support the continuous improvement of advanced planning systems, increasing planning quality in complex supply chain settings.

General information
State: Published
Organisations: Department of Management Engineering, Production and Service Management, Technical University of Denmark, Technische Universität München
Contributors: Kallestrup, K. B., Lynge, L. H., Akkerman, R., Oddsdottir, T. A.
Number of pages: 15
Pages: 49-63
Publication date: 2014
Peer-reviewed: Yes

Publication information
Journal: Decision Support Systems
Volume: 68
ISSN (Print): 0167-9236
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 4.65 SJR 1.656 SNIP 2.16
Web of Science (2017): Impact factor 3.565
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.67 SJR 1.721 SNIP 2.449
Web of Science (2016): Impact factor 3.222
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 4.16 SJR 1.87 SNIP 2.289
Web of Science (2015): Impact factor 2.604
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 4.32 SJR 2.002 SNIP 2.494
Web of Science (2014): Impact factor 2.313
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 3.42 SJR 1.504 SNIP 2.39
Web of Science (2013): Impact factor 2.036
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 3.64 SJR 1.539 SNIP 2.585
Web of Science (2012): Impact factor 2.201
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 3.22 SJR 1.219 SNIP 2.335
Web of Science (2011): Impact factor 1.687
ISI indexed (2011): ISI indexed yes