A Matheuristic for the Liner Shipping Network Design Problem with Transit Time Restrictions - DTU Orbit (22/01/2016)

A Matheuristic for the Liner Shipping Network Design Problem with Transit Time Restrictions

We present a mathematical model for the liner shipping network design problem with transit time restrictions on the cargo flow. We extend an existing matheuristic for the liner shipping network design problem to consider transit time restrictions. The matheuristic is an improvement heuristic, where an integer program is solved iteratively as a move operator in a large-scale neighborhood search. To assess the effects of insertions/removals of port calls, flow and revenue changes are estimated for relevant commodities along with an estimation of the change in the vessel cost. Computational results on the benchmark suite LINER-LIB are reported, showing profitable networks for most instances. We provide insights on causes for rejecting demand and the average speed per vessel class in the solutions obtained.

General information
State: Published
Organisations: Department of Management Engineering, Management Science
Authors: Brouer, B. D. (Intern), Desaulniers, G. (Ekstern), Karsten, C. V. (Intern), Pisinger, D. (Intern)
Keywords: (Liner shipping, Network design, Transit time)
Pages: 195-208
Publication date: 2015

Host publication information
Title of host publication: Computational Logistics : Proceedings of the 6th International Conference, ICCL 2015
Publisher: Springer
ISBN (Print): 978-3-319-24263-7
ISBN (Electronic): 978-3-319-24264-4
Series: Lecture Notes in Computer Science
Volume: 9335
ISSN (print): 0302-9743
BFI conference series: International Conference on Computational Logistics (8c1db63-01b1-4899-9db3-2b7c7f1f5891)
Main Research Area: Technical/natural sciences
Source: PublicationPreSubmission
Source-ID: 117692279
Publication: Research - peer-review › Article in proceedings – Annual report year: 2015