

A Case Analysis of an Optimization of Handling Equipment in a Container Terminal

Eric W. T. Ngai* and Bernard K. S. Cheung**

*Department of Management and Marketing
Logistics Research Centre
The Hong Kong Polytechnic University
Hung Hom, Kowloon
Hong Kong, PR China
Email: mawtngai@polyu.edu.hk

** Dept. of Math. & Industrial Engineering
CIRRELT
Ecole Polytechnic de Montreal
C.P. 6079, succ. Centre-ville
Montreal, Quebec
Canada H3C 3A7
Email: bernard.cheung@gerad.ca

Abstract

In order to optimize the container terminal throughput, it is important for terminal planners to schedule different types of handling equipment in an optimized way with providing real-time information. The real-time scheduling problem in container terminal has received little attention in the literature. This paper presents a case analysis of a real-time scheduling of handling equipment in a container terminal operation in Hong Kong. With real-time information on handling equipments in a container terminal enabled by modern IT tools, this study proposes a heuristic scheduling method to obtain close to optimal solution to this scheduling problem. A computational experiment shows that the proposed method generates highly satisfactory solution resulting in significant increases in both daily throughput and handling capability.

Keywords: *Scheduling, Real-time Operations Monitoring, Container Terminal*