

Mike Hewitt

Loyola University Chicago, Illinois, États-Unis/United States



THE TECHNICIAN ROUTING PROBLEM WITH EXPERIENCE-BASED SERVICE TIMES

Abstract: The technician routing problem is often seen in the fast-growing home services sector; e.g. revenues in the heating, ventilation, and air conditioning sector are expected to grow at an annual rate of 5.9% over the next five years. We study a technician routing problem wherein operational planning is done on a daily basis, but there are long term impacts to those decisions as today's decisions also impact efficiencies in the future.

Specifically, we present a new model of technician routing, one that includes a descriptive model from the literature on human learning to recognize that the time required for a technician to perform a task depends on his/her experience level. Consequently, our model is multi-period in order to capture the impacts of learning. We assume a planning setting wherein today's customer requests for service are known, but there is uncertainty regarding requests in future days. We present a rolling horizon solution technique that anticipates the impacts of learning on future days when performing daily planning. With an extensive computational study, we demonstrate the value of these anticipation techniques and derive policies to help organizations make daily planning decisions that are beneficial in both the short and long term.

Joint work with Xi Chen and Barrett W. Thomas.

Note : Mike Hewitt est professeur en gestion des opérations au Department of Information Systems & Operations Management de Quinlan School of Business. / Mike Hewitt is professor in Operations Management at the Department of Information Systems & Operations Management of Quinlan School of Business.

<http://www.luc.edu/quinlan/scm/facultyandaffiliates/mikehewittphd.shtml>
mhewitt3@luc.edu

MARDI / TUESDAY

10 juin 2014 /
June 10th, 2014
11h

Salle / Room 5441
Pavillon André-Aisenstadt
Université de Montréal

Ouvert à tous / Open to all

Organisateur / Organizer
Teodor Gabriel Crainic