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# Waste reduction through reallocation of goods in food retail companies

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## Abstract

Worldwide the issue of food waste is highly relevant and intensely discussed in public media and social networks. The focus is often on grocery retail, not least because it is easily accessible to the public and there is direct contact with the final consumer. The research work presented here establishes a direct link between this issue and the grocery retail and provides a solution for waste reduction in stores of a stationary food retail company. It consists of reducing the average stocks of quickly perishable goods in stores of grocery retailers. We propose a methodical transfer of quickly perishable goods between grocery stores. Our solution shows the reduction of inventories without increasing the costs in the grocery stores. The approach is to achieve a daily delivery and an internal transfer of goods between stores. As a result of the decline in average inventories, both waste volumes and total costs are reduced in stores. A realistic simulation study shows that the transfer of goods is a suitable method for the reduction of waste in the considered application area. The developed approach can be implemented in practice without loss of the customer service level.

## Keywords
Waste reduction, Retail, Transfer of goods, Perishable goods, Simulation study

## Biographies

**Larissa Janssen has** been a PhD student at the University of Oldenburg since 2012. She has been working since 2003 as a research assistant at Jade University of Applied Sciences in Wilhelmshaven (Germany). In 2007 she completed the Master of Computer Science at the state-maintained distance teaching University Hagen (Uni Hagen in Germany). Additionally, she completed the study of Mechanical-Engineering (Dipl.-Ing.) at the Technical University Omsk (Russia) in 1992.

**Jürgen Sauer** (PhD) **has been** a Full Professor at the University of Oldenburg in Germany since 2002. He habilitated at the University of Oldenburg (Germany) in the year 2002. His research lies in the field of knowledge-based scheduling. In the year 1986 he completed his studies at the University of Dortmund (Germany) in the department of Computer Science.

**Alfred Wulff** is a Professor, and Director of the Institute of Business Informatics in the Department of Management, Information and Technology at the University of Applied Sciences, Wilhelmshaven, Germany. He holds a German diploma in Mathematics. He worked for several years in large software development projects and was project manager of multinational R&D-IT projects subsidized by the European Commission. Within the scope of the

European Spacecraft program COLUMBUS (European part of the ISS) he worked for the prime contractor and was responsible for the COLUMBUS Engineering Database and the Management and Technical Information System. He has published conference papers. His research interests include database management, business intelligence, Big Data, data mining, business process management and mobile solutions.