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The Potential for Cannibalization of New Product Sales by Remanufactured Products

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The potential for the cannibalization of new product sales by remanufactured versions of the same product is a central issue in the continuing development of closed-loop supply chains. We investigate the cannibalization question via auctions of new and remanufactured consumer and commercial goods. These auctions allow us to explore the impact of offering new and remanufactured products at the same time, which provides insights into the potential for cannibalization. Our results indicate that for the consumer and commercial products auctioned, there is a clear difference in the willingness-to-pay for new and remanufactured goods. For the consumer product, there is scant overlap in bidders between the new and remanufactured products, suggesting that the risk of cannibalization in this case is minimal. The commercial product exhibits some evidence of overlap in bidding behavior, exposing a greater potential for cannibalization. We also present guidelines for incorporating these results into future P/OM models.

V. Daniel R. Guide, Jr. is an associate professor of operations & supply chain management in the Smeal College of Business, The Pennsylvania State University. His research is focused on closed-loop supply chains, remanufacturing, sustainability and industrial ecology. He is a regular contributor to numerous academic and managerial journals, including *Management Science*, *Manufacturing & Service Operations Management*, *Operations Research*, *Production and Operations Management*, *Interfaces*, *Harvard Business Review*, *California Management Review*, and other journals. Additionally, Dan serves as an associate editor at *Production and Operations Management* (and is the incoming departmental editor for Sustainable Operations), an associate editor at the *Decision Sciences Journal*, and the *Journal of Operations Management*. He also serves as departmental co-editor for supply chain issues at the *Journal of Industrial Ecology*. Dan's research on closed-loop supply chains has been supported by grants from the Carnegie Bosch Institute and the National Science Foundation. He also regularly partners with global organizations (including US Navy, Hewlett-Packard, Robert Bosch Tools NA, Alcatel-Lucent, Xerox, Kodak and other firms) on a variety of closed-loop supply chain and sustainability problems.

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