The University of Illinois at Chicago
IDS 532: Introduction to Operations Management
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UIC BUSINESS

ASSIGNMENT

Merton Truck Company

The Merton Truck company faces a common issue in many production and service industries, a product mix decision. For instance, National Cranberry Cooperative handled two types of products; wet berries and dry berries. They then had to allocate their resources to these berries. Some resources were dedicated to a particular product, while some were shared.

Shared resources pose complicated problems for the firm, since each product may consume different amounts of the shared resources while also contributing different revenues toward fixed costs. It is certainly the case that one may not want to sacrifice production of one product for another just because one contributes more toward fixed costs. Furthermore, the best utilization of the firm's resources toward a good product mix should drive the firm's marketing strategy — what mix of products will result in the most profit for the firm?

The Merton Truck Case is a simple, but realistic exercise to illustrate this product mix decision. Below are some introductory questions for you to turn in. In class we will explore these issues more deeply.

Questions

1. What is the total contribution toward fixed costs if only Model 101 is built?
2. What is the total contribution toward fixed costs if only Model 102 is built?
3. What is the total contribution toward fixed costs using their current mix of 1000 Model 101 trucks and 1500 Model 102 trucks?
4. Can you demonstrate a product mix that improves the total contribution?

NOTE: "total contribution toward fixed costs" is simply (total revenues - total variable costs). That is, this is a measure of how the firm is contributing toward its fixed costs. The "marginal contribution" is marginal revenue - marginal variable cost, i.e. the contribution for a single unit.