

Executive Summary

The Remanufacturing Industry: Anatomy of a Giant is the first comprehensive view of the nature of firms in the remanufacturing industry. That the industry is large and economically important has been recognized for a number of years, but a study of the firms that make up the industry and the “inner workings” of these firms has not been attempted before on a broad scale.

With the cooperation of executives in 274 companies and the help of a quartet of student assistants over the past 2 1/2 years, we have assembled a mass of data on the industry. The report, which is 179 pages in length, covers topics such as the nature of the firm, sales and marketing, product design and process issues, workforce, cores (the raw material of remanufacturers), capital investment, costs, and strategic barriers and opportunities in the industry. The basis for our findings is an eleven-page questionnaire that was filled out by each of the 274 randomly selected respondent firms. Their responses totaled over 28,000 separate data records.

As an example of the analyses presented in the report, this table, in the Workforce section, shows the range of sales, employment, and sales per employee for all firms that gave both sales and employment figures (a total of 256 firms).

Year 2000 Sales and Employment Statistics				
Annual Sales (\$ Range)	Firms	Total Sales (Dollars)	Total Employees	Sales per Employee
All Ranges	256	1,591,192,172	7,113	\$ 223,702
0 - 99,999	21	1,077,000	29	\$ 37,723
100,000 - 499,999	75	19,291,653	339	\$ 56,992
500,000 - 999,999	36	22,981,559	254	\$ 90,657
1,000,000 - 1,999,999	42	55,931,346	602	\$ 92,986
2,000,000 - 4,999,999	41	117,850,677	909	\$ 129,649
5,000,000 - 9,999,999	19	117,098,937	720	\$ 162,637
10,000,000 - 24,999,999	12	166,000,000	768	\$ 216,146
25,000,000 and above	10	1,090,961,000	3,494	\$ 312,238

General conclusions arising from the study are that firms engaged in remanufacturing are *diverse* in locations, products, and markets; *multifaceted*, in that remanufacturing is done in conjunction with a group of related business activities; *predominantly small, independent, and privately owned*; and *competitive with original equipment manufacturers (OEMs)*, but also dependent upon them. OEMs, where they participate, are among the largest remanufacturers in terms of both sales and employment. Remanufacturing operations are *labor intensive*, critically dependent on a supply of labor, and likewise dependent on a reliable supply of good cores at reasonable cost. Remanufacturers tend to be *responsible* long-term members of their communities. They are “*American*,” in that they are oriented to domestic markets and they do their work domestically. Remanufacturing is not only a *source of income* for employees and

owners, but it is also an income source for a large supply, distribution, and service network.

Threats to the industry come in the form of new products that have become inherently more durable and reliable, requiring fewer rebuilds during a product's lifetime, and from new inexpensive products, largely imports, that make remanufacture uneconomic. Further threats come from anticompetitive tactics on the part of OEMs, some of whom have sought to use patent and copyright laws to stop remanufacture of their products. Lack of public sensitivity to the economic and ecological contributions of the industry makes it difficult to garner legal or regulatory support to counter these threats.

Despite constraints, public indifference, and a high attrition rate among the firms, respondents to this survey reported growth in annual revenues, even during the poor economy that has prevailed in this country in recent years.

We hope that through a better understanding of the nature of the industry, companies will find new opportunities for growth, and that this country will maintain a level playing field for firms who extend the life of our investment in durable goods through remanufacture.

June 30, 2003
Department of Manufacturing Engineering
Boston University
15 St. Mary's Street
Brookline, Massachusetts 02246

William Hauser
wmhauser@bu.edu

Robert T. Lund
lund@bu.edu