

manufacturers do not wish to divulge market share information, interviews conducted by Johnson, Marcus, Campbell, Sommers, Skumatz, Berk, Petty, and Eschbach (1981) suggest that two manufacturers, Universal Manufacturing Corporation and Advance Transformer Company, control almost 90% of the fluorescent lighting ballast market. Because of the structure of the industry, it is difficult for small companies to enter the marketplace and be competitive. There is also little incentive for the major companies to develop new technologies, especially if the innovation will require large capital investments. Innovations are likely to be duplicated by competitors at less cost than was paid by the original developer and market shares are unlikely to change significantly (Lawrence Berkeley Laboratory, 1981).

The major manufacturers continued to reject the idea of adding the solid-state ballast to their product line throughout the 1970's. One reason for their resistance was that for each solid-state ballast sold, one traditional ballast would not be sold. Facilities for the production of traditional ballasts were already built and paid for. Production of the solid-state ballasts required new capital investment that could be used more profitably in other ways. Thus, major manufacturers had no financial incentive, but they did have some disincentives to begin production of solid-state ballasts. Many of the major firms expressed their belief in the nonviability of the product during the period (1977-1981) when the LBL prototype development, testing, and demonstration efforts took place. Given the disinterest, nonparticipation, and even hostility to the product development efforts shown by the major manufacturers, the solid-state ballast clearly would not have reached its present level of market penetration without DOE-sponsorship of the LBL effort.

The LBL/DOE program was highly successful because it forced the industry to adopt an innovation by contracting development work to small