Abstract

This research work deals with the investigation of Product Cannibalization in view of Remanufacturing as a business prospect in contemporary manufacturing. It also explores various benefits and issues related to Remanufacturing, especially in the context of a remanufactured product as well as its counterpart new product.

Few relevant and important motivating factors that encourage remanufacturers to produce the remanufactured products are obtained with the help of a number of case studies conducted in few manufacturing firms. The results of T-tests and Coefficient of Correlation indicate that the cost saving due to remanufacturing is an important factor. Profit potential, customer demand and availability of cores (i.e., End of Life products) are some of the important factors that have to be addressed by industries involved in Remanufacturing operations.

In addition to the case studies conducted, using data collected from eBay online tool and a properly structured questionnaire, some important issues about customers' willingness to pay towards remanufactured product etc. were explored and analyzed. The statistical analyzes conducted on primary data indicates that quality, Price saved due to a remanufactured product and willingness to pay for a remanufactured product on the part of customer are not related.

Product cannibalization is a very important issue explored in this research and hence the relationship of WTP, Price and Quality of a product with the product cannibalization has been checked by conducting a Chi-Square test. The Online auction data received through eBay is discrete and hence non-parametric tests like Wilcoxon two-sample and Kolmogorov–Smirnov two-sample tests were conducted for analysis (Guide and Li, 2010). It has been established that the customers' willingness to pay (WTP) is less for a remanufactured product as compared to its new counterpart product.
It is interesting to find the number of bids received for a new product in the presence and absence of a remanufactured product. Number of bids is not shown to have any impact due to the presence or absence or a remanufactured product. Through the auction end bid, some valuable information are obtained and the value of end bid of a new counterpart product in the presence and absence of a remanufactured product is not shown to have an impact and hence these results suggest that the customer segments of remanufactured and new products are different and therefore, cannibalization should not be a concern.

Through eBay analyses and tests, it has been proved that the remanufactured product does not cannibalize the sale of its counterpart product and through the survey questionnaire responses, slightly varying opposite results are obtained. Many remanufacturing experts feel that the sale of a remanufactured product will cannibalize the market sale of new product and the same is true to a very negligible extent. It has also been proved that the cannibalization due to the sale of remanufactured product and WTP, quality & Price are not shown to be directly related.

This Research also indicates that due to the fear of new product cannibalization caused due to the sale of a remanufactured product, many Original Equipment Manufacturers (OEMs) are not tempted to go for remanufactured products (Atasu, 2010). Hence, this study is very useful to industries as it encourages them to start remanufacturing as a secondary business option to improve the product life cycle by grabbing maximum market share. It has also been proved that the customers are segmented and customers, who are buying the remanufactured products and new counterpart products, are different, emphasizing that the remanufactured product does not cannibalize the sale of its new counterpart product.