



An Insight into Used-Products Remanufacturing

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Abstract – Nowadays, remanufacture of used-products is gaining importance amongst many manufacturers as well as third party companies. This paper identifies the main drivers for remanufacturing to be product take-back legislations, environmental concerns and economic benefits. This paper also identifies the four main remanufacturing processes to be inspection & grading, disassembly & inspection, component reprocessing and reassembly. Finally, this paper presents several examples of remanufactured products and the two markets for selling them. This paper provides valuable insights on remanufacturing to potential remanufacturers, researchers and the general public. Remanufacturing in the long run can save materials, cost and the environment. **Copyright © 2015 Penerbit Akademia Baru - All rights reserved.**

Keywords: Used-products; product recovery; Remanufacturing

1.0 INTRODUCTION

Nowadays, remanufacturing is an important activity in many manufacturing companies, where independent or third-party business companies are also reaping the economic benefits of remanufacturing. The oldest and strongest remanufacturing sector is the automotive sector [1], [2], where the alternator has the highest remanufacturing rate [3]. Other industries where remanufacturing is gaining scientific significance are single use-devices for hospitals, such as wheelchairs and hearing aids [4], cellular phones [5], and truck tyres [6]. Generally, remanufacturing refers to an industrial process in which used/worn-out/broken products (henceforth called used-products) are transformed into "new products" [7]. In this paper these "new products" refer to remanufactured products to differentiate them from a completely new product.

Remanufacturing could be sometimes confused with other similar product recovery options like repair, refurbish and recondition. Repaired, refurbished and reconditioned products are very close to remanufactured ones and these terms can frequently be considered synonymous with each other [8]. Despite their similarities, the weightage and meanings of the terms are different with respect to functionality and performance. For example, to repair a broken product means to correct specified faults in a product. If the repaired products have warranties, the warranty does not cover the whole product but only covers the component that has been replaced. In refurbishing process used-products are cleaned up, nonworking parts are replaced, tested, repackaged and made available for resale. Refurbished products have warranty that is less than that of a new product. For reconditioning, a used-product is cleaned up and tested extensively with possible repair before repackaged for resale at a satisfactory working condition, with warranty less than that of a newly manufactured equivalent, in which the warranty applies to all major wearing parts. Finally, recycling describes the processing of