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Sommario/riassunto

Economic growth and rising levels of consumption in developing and developed countries has been observed as being deeply coupled with natural resource usage and material consumption. The increasing need for natural resources has raised concerns regarding issues such as resource scarcity, undesirable environmental impacts due to material extraction, primary production, and suboptimal product disposal, and social or political tensions. Product End-of-Life (EoL) options, such as reusing or recycling, attempt to limit or reduce the amount of waste sent to a landfill, providing strategic means to decouple the link between economic growth and resource usage. These EoL options have the potential to close material loops, further utilizing wastes as resources, reducing environmental impacts, conserving natural resources, reducing material prices, and providing job opportunities in developing countries. Remanufacturing, on the other hand, is a unique EoL option due to increasing the number of life cycles of a product before final disposal. First, recurring environmental benefits, such as emission and raw material extraction avoidance are obtained with each

additional product life cycle. Second, individual resource efficiency yields increase through product remanufacture. Resource efficiency or, using more with less will continue to compound with each additional life cycle. Third, recirculating products decreases the demand and dependency for primary resource production, further closing the material loop and creating a more circular economy. In addition, remanufacturing can initiate more preferable EoL options such as recovery, recycling, and waste reduction. While remanufacturing offers numerous benefits, there is significant lack of literature and books covering the fundamentals of operations, technologies and business models. The proposed book will provide in-depth coverage of remanufacturing fundamentals and its strong link to circular economy and resource efficiency.