# A holistic framework for evaluation and selection of remanufacturing operations: an approach

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**Abstract**
Lack of efficient evaluation methods to help decision makers in making informed decision regarding in-house technology investments, outsourcing technology, and manual activities in the remanufacturing industry has raised serious concerns in the selection process of technologies based on company size and resources. This has resulted in the inability of decision makers to broadly assess the scope of alternative technologies against remanufacturing processes. Thus, it has resulted in the choice of a common solution based on inconsistencies and uncertainties. This paper proposes a holistic framework that can assist decision makers in evaluating the remanufacturing operations by offering better understanding of the performance and potential capabilities in the selection of appropriate technology. The salient feature of the proposed framework is its utilization of the fuzzy logic method as guiding tool to analyze criteria for technology selection in order to make informed decisions on whether to invest or outsource a technology or use labor-intensive operations to the specific process. The paper also highlights importance of the technology assessment framework in aligning and consolidating the dedicated thinking for the life cycle of the particular technology. The major contribution of the framework is its integration of obsolete and disposal phases with the acquisition and adoption phases. Therefore, during technology assessment, decision makers are guided by a step-by-step iterative process on technology requirement verification.

**Keywords**
Holistic framework
Assessing remanufacturing technology
Technology evaluation
Technology selection method