

## **Abstract**

This research applies conventional Ant Colony Optimization (ACO) to the problem of selecting suppliers for components types of Hard Disk Drive (HDD) manufacturing. The objective of this problem is to maximize the total yield of HDD under the limited budget and supplier rating constraint. This problem is consider only main component with expensive cost and HDD model based on a series system with multiple-choice constraints incorporated at each subsystem. This problem can be formulated as a nonlinear binary integer programming problem and characterized as an NP-hard problem. This work only considers the raw materials yield after failure analysis and does not include machine and method factor. The data in this study is obtained from an undisclosed HDD manufacturer. The ACO is developed to solve this problem using the best parameter settings. Then, the simulation is performed with different budgets and the results show that the ACO can solve the problem with high efficiency.