Multi-task mode operates in modern manufacturing systems and it can be used in different sections of machines to perform different tasks or functions. This kind of machining is already utilized in a rising amount of jobs related to manufacturing, particularly in competition facing companies in low cost market.

This problem is arises when the newer version may not be feasible but since the manufacturing units for various components are working it is wasting the time, energy and the resources of the company.

The thesis focuses on three basic aspects of Industrial control system:

The first phase presents the impact of Multi Objective Optimization, resulting in creation of knowledge base helpful in maximizing profit.

Secondly the extension of knowledgebase using Neuro Fuzzy approach.

Third phase deals with the extension of Multi Objective Optimization in setting the priority and machine scheduling.

The phase starts with the work by development of Intelligent Hybrid Systems by integrating the two systems creating a hybrid tool which has the ability to gather information, process it and the comprehension of new knowledge is crucial to understanding of such systems.

The Presence of the multiple type of conflicting objectives (such as simultaneously maximization product reliability and minimizing the cost of fabrication) is very natural in many problems and it can be solved by the interesting optimization problem. Since not only single solution can be evaluated as an most favorable solution among the multiple objectives that are of conflicting nature, thus it results in multi objective optimization problem that serves as an alternate to various trades off most favorable solutions.

The most real world naturally involved the optimization problems and search for multiple objectives. The radical theory discussed above is not only applicable to a single objective, while the rest of the
objectives hold equal importance. Diverse solutions among diverse objectives may lead to creation of trade off (Conflicting scenarios). A explanation that is in excess (in a better sense) with respect to single objective that needs a compromise in various objectives.

The manufacturing systems performance is greatly affected by its configuration. For this kind of solution, it is a template of all probable solutions that give a trade off residing within the objective functions that are not similar to each other. We have developed a Tool in which a case of Mobile handset manufacturing process is considered. By setting the priorities and weights. Once the user has entered all the details he will be provided with the Feasibility status as well as the Priority for Machine scheduling. It also provides the economic comparison with the previous product launched in market so that one can determine the profit on that product.

Finally, a relationship between Maximize Profit Perception and Knowledge creation is derived. The knowledge generated by the Heuristic solver is being desired through “Factor of Production” leading to generation of trade-off between vector of decisions like L, K, R and S which can be controlled by the user vector of external impact not under users control along with set of feasible decisions.