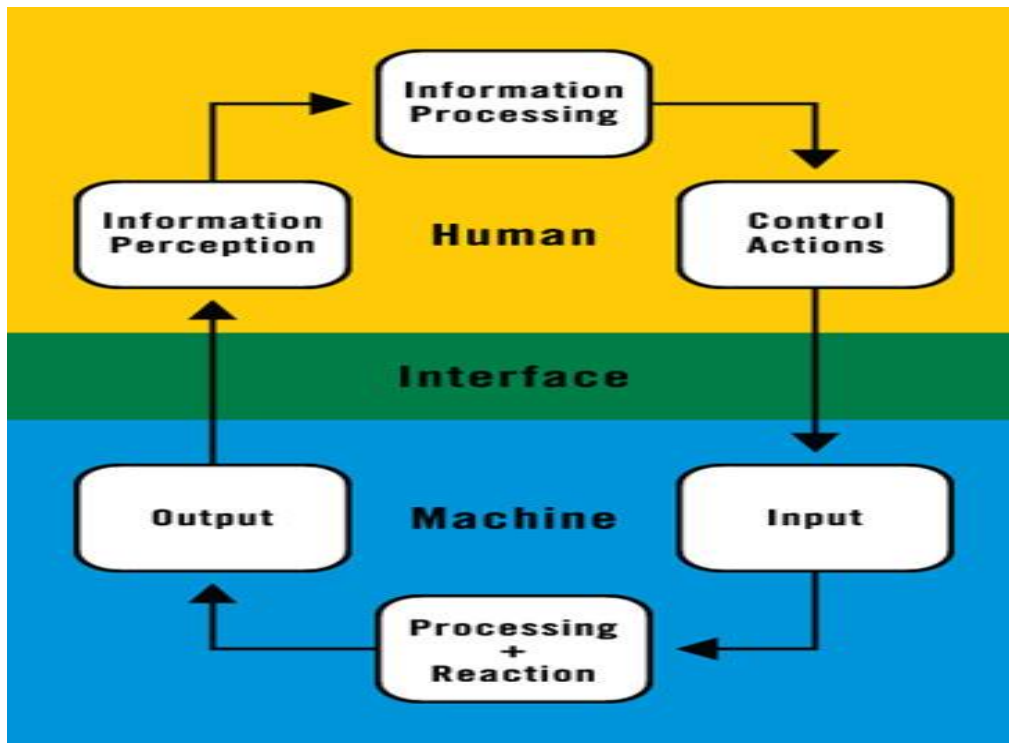


## Introduction

Manufacturing study is a general term for those processes and techniques which are used in all its context, some factors as measurement and marking out instruments, machines, operators, designers and management which lead to the investigate the desired aim of manufacturing processes. **Manufacturing** is the process of converting raw materials into products, it consist of the design of the product and the selection of raw materials so the sequence process to the product will be manufactured. It is the backbone of any industrialised country and the importance of manufacturing is economic activity. A country's level of manufacturing activity is directly related to its economic health. Generally, the higher the level of manufacturing activity in a country is the higher the standard of living of its people.

Manufacturing processes can be divided into two groups, primary manufacturing processes and secondary manufacturing processes. **Primary** processes provide the raw materials or the basic shape and size to the work as casting, forming, powder metallurgy, etc. **Secondary** manufacturing processes are aims to obtain desired product with final shape and size with exact dimension of surface characteristics, as materials removal processes. All of the products mentioned are made by various processes that we call manufacturing as Casting or Moulding, Machining or Cutting, Forming or Deforming, Assembly etc.

In order to create a competitive manufacturing system, it must be a well-established cooperation between human and the machine, which is the basis of the **relationship** between technology and an operator. The human participation as a successful management of equipment and organization of work, in other word the human participation in manufacturing processes is contributing an essential contribution to achieving the optimal aim of this relationship.



**Figure1. Relation between the Human and Machine**

The mechanical or chemical steps used to create any product with large quantity are termed *production processes*, generally involves the use of raw materials, machinery and human power to create a final products with exact dimensions and desired shapes. In addition to the process for shaping of raw materials, finishing operations are used to obtain the desired final quality. These operations include: Cleaning, Painting, Plating, Polishing, Deburring, Heat treatment etc.