

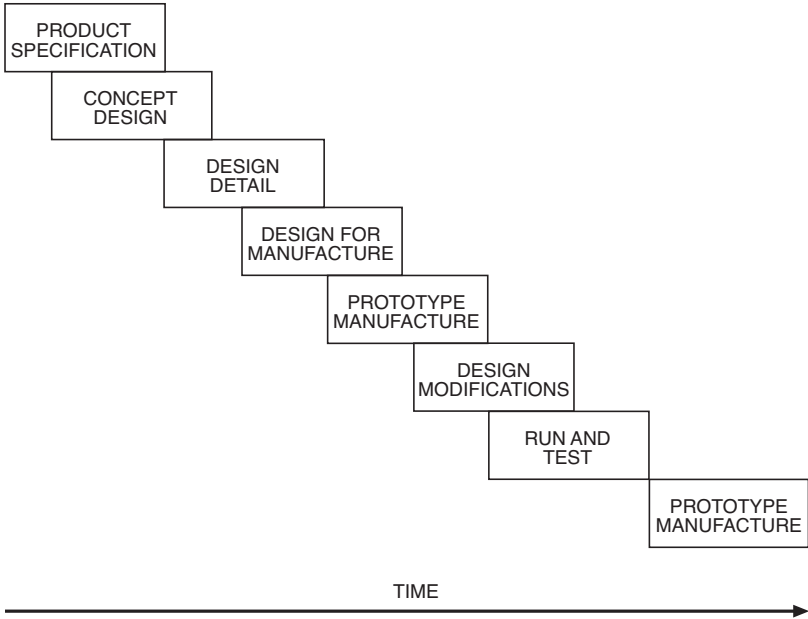
CONCURRENT ENGINEERING

What is concurrent engineering?

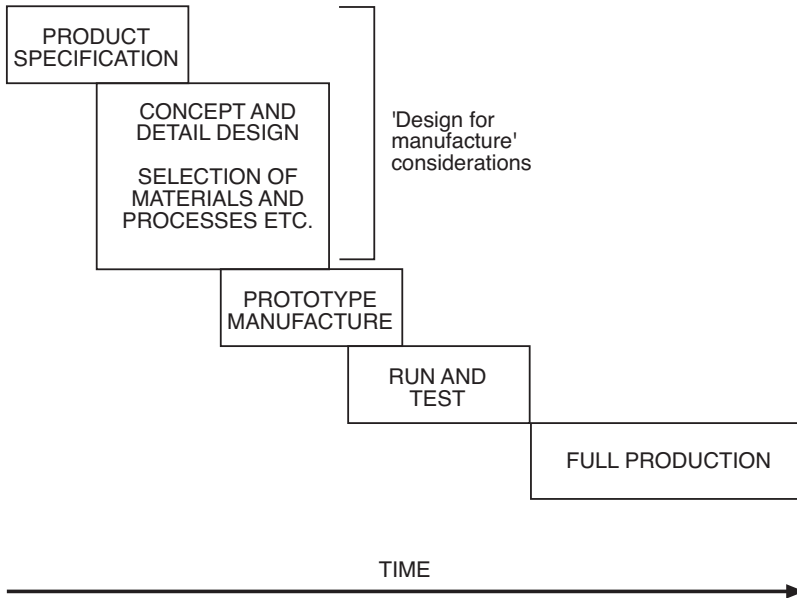
Concurrent engineering (sometimes called '*simultaneous engineering*'), is an integrated approach to the design and manufacture of new products. It uses multi-function teams to research, design, develop, manufacture, purchase, supply and market all work in parallel, from the first idea through to the final launch of the product in the marketplace.

The successful implementation of concurrent engineering requires a major shift in the culture of a company. It demands a commitment to change and this must have its roots amongst the most senior management of the company. Without this commitment, concurrent engineering has little chance of success, or of bringing about a change in business performance.

Traditionally, design and manufacturing have taken place sequentially.



Concurrent engineering tries to ensure that all relevant problems associated with the design and manufacture of a new product are tackled in parallel. This means that the design can be modified dynamically.



This means that the time between the design idea and actual manufacture is much reduced as problems are identified more quickly, and materials, machinery and labour can be organised well in advance of the planned production start date.

Amongst the benefits of concurrent engineering are:

- *quality is built in*
- *engineering changes are reduced*
- *new product times cut by as much as 75%*
- *assembly times cut by as much as 50%*
- *reduction in the number of component piece parts*

The concept of concurrent engineering fits completely with that of Total Quality Control (TQC), Just as in TQC and TQM (Total Quality Management) quality becomes everyone's business, and so in concurrent engineering the design becomes the concern of all departments.

To maximise the benefits of concurrent engineering, the use of CAD/CAM - Computer Aided Design and Manufacture - must be exploited.

With the correct combination of hardware and software, design and stress engineers and process engineers can work in parallel. Fewer prototypes need to be built and lead times can be cut drastically.

The use of CAD/CAM systems is inevitable for companies wishing to achieve world class standards in both lead time and quality. Their use enhances the use of concurrent, or simultaneous engineering practices.

