



# Design for Excellence

**Developing competitive new products. Getting it right first time!**

**The critical elements of specifying, designing and developing new products must include the overall system thinking of the manufacturing process itself, in order to get the right product to the customer in the shortest possible time.**

**To enable this, it is imperative that marketing, manufacturing and engineering work together as a team from product concept through to production.**



It is widely recognised that the main influences on the final product cost are usually set very early in the product development. Typically, 70% to 80% of the final product cost has already been determined during the first 5% of the development cycle. (Fig 1.)

The design process is the key area where profit can be created, and in the past not enough emphasis has been applied to the concurrent engineering design techniques which are available.

Plextek consultants have the experience and knowledge in using these methods to give maximum efficiency in our own designs and to help reduce the cost of clients' existing designs.

We can carry out a Design for Excellence (DFX) study on your design prior to production, or we can help with a competitor analysis study.

Plextek designed products are developed through a process of continuous design reviews so that design iterations are kept to a minimum, thus 'Time to Manufacture' is minimised.

Efficient design costs are achieved by constant collaboration between ourselves and our clients, ensuring information sharing between all parties, including the potential end manufacturers and the material suppliers.

Plextek's consultants have the experience and expertise to get your product idea into a well designed real product, which can be manufactured in the most cost effective and efficient manner.

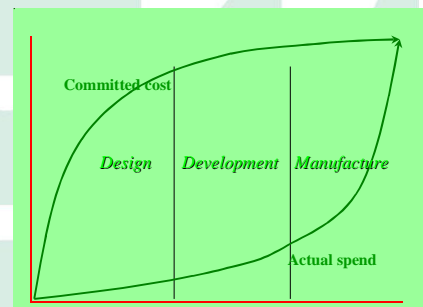


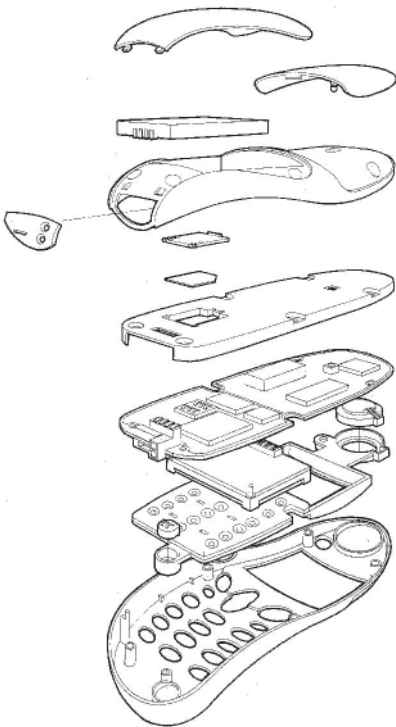
Fig 1 Committed Product Cost Curve

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Plextek Limited, London Road,  
Great Chesterford, Essex, CB10 1NY, UK  
Telephone: +44 (0)1799 533200  
Fax: +44 (0)1799 533201  
Website: <http://www.plextek.co.uk>  
Email: [mktg@plextek.co.uk](mailto:mktg@plextek.co.uk)

Communications Technology  
Consultants

The example below shows a recent designed product where the emphasis on 'Z' axis assembly was paramount for efficient automated assembly.



Other examples of Plextek's designs include parts for a car theft telemetry system, with innovative use of integrated connector housings into castings and the elimination of metal parts within remote utility meter reading units.

Plextek are able to utilise emerging technologies, processes and use rapid prototyping techniques to minimise time to produce samples or even production representative parts.

Many of Plextek's clients already have their own design rules. These rules are generally based on a common ground, but typically there are certain criteria to which individual clients have to adhere. Inclusion of these rules is maintained throughout the design cycle and provides an easy flow of information in a form with which the client is familiar. This will often include the use of specific drawing packages and formats.

Plextek's manufacturing consultants can be allocated to a product in a New Product Introduction ( NPI ) role to provide the total solution, which will incorporate:

- Documentation transfer.
- BOM control.
- Critical component monitoring.
- Process development.
- Test technology transfer.

Incorporation of these aspects will ensure the smooth transition and technology transfer from design to manufacture.

Design For Environment or Eco-Design is being increasingly legislated for. Since 1992 the European states have been developing the Eco-Management and Audit Scheme ( EMAS ), and the implications of this can only become more encompassing. Public, and in general world concern is growing on the subject of the resources of the world, the efficiency of product design and its recycleability must become paramount for companies who want to maintain their commitment to the environment whilst staying ahead of pending legislation and their competitors. Because of this, the analysis of Product Life cycle is becoming more and more paramount. Plextek can build in these requirements in terms of efficient design to whatever level you may require.

For further information, please contact the Marketing Department:  
Telephone: +44 (0)1799 533200  
Email: [info@plextek.co.uk](mailto:info@plextek.co.uk)



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