**COST REDUCTION STRATEGIES**

There are many facets to reducing costs for a product, starting from indirect cost in marketing the product to the cost of winning the order, through the direct cost of manufacturing and testing the units, back to the indirect cost of delivering and installing the equipment through to the downstream cost of product support and CLS contracts.

Even if you cannot reduce costs at all stages, by understanding those costs you are able to capture them and ensure they are factored into the product selling price to ensure you recoup those costs and make a profit.

Cost can be reduced by reviewing the following areas:-

**Critique Design**

* Removing any superfluous parts from the product that are not essential to its operation. Removing a part removes the cost of the part itself and all the associated assembly time and indirect cost of purchasing and handling the part.
* Ensure parts are Designed For Manufacture (DFM) - e.g. increasing cutter diameter to reduce machining time, removing unnecessary features and processes.
* Look for part commonality to increase volumes and achieve price break points.
* Are the parts designed to suit the capability of your intended supplier (no point designing a part for 5 axis CNC if they do not have the machine, and need to move the part from turning/milling/fitting with all the associated set up and handling costs)

**Reduce Material Cost**

* Look at the material types including grades to see if cheaper alternatives could be used
* Can a material change remove a more costly post process (alum alloy with surtec and paint vs plain stainless 316)
* Are parts optimising stock billet sizes (reducing waste)
* Are manufacturers nesting parts to maximise the yield from the stock material
* Can waste material be recouped and offset against part cost at the supplier level

**Review Manufacturing Processes**

* Review that the right manufacturing process is being used for each part
* Review investment in tooling etc. to reduce Unit part Cost (UPC) casting, molding , forming, etc. and evaluate the breakeven point against the current manufacturing methods and the level of investment required and projected pay back against projected orders
* Review finishing processes (Smooth semi-gloss paint accentuates any base material or paint defect and anodising and plating are expensive additions)

**Supply Chain**

* Review whether they are making the parts in-house. If they are sub-contracting, is it cost effective.
* Review whether the parts are placed with the manufacturer who are best placed to manufacturer those parts cost effectively.
* Implement quality protocols to reduce reworks and associated management cost and delays to the build programme.
* Know the price break point of all parts - evaluate price break points vs investment vs cost/duration of holding inventory against the projected sales to maximise economies of scales.

**Assembly Costs**

* Ensure full inventory of parts prior to build to reduce down time (especially if cell or linear assembly techniques are adopted)
* Streamline the build process - set up dedicated cells and avoid unnecessary movement of parts
* Utilise jigs, fixtures & tooling to reduce build time and improve build consistency/quality
* Communize on fixings to reduce assembly times and associated with tool changes.

**Reduce Overheads**

A pound saved on the overhead is a pound to the bottom line

* Review the overhead cost of each discipline
* Hold less inventory (Just in time can only work with predicted production rates)

**Understand Indirect Costs**

* Project/Build Management
* Shipping and delivery charges
* Consumables - adhesives etc.
* Packaging materials and the associated cost of wrapping the product between build phases and sites.
* Order placement
* Stock control
* Paperwork

**Labour Costs**

* Understand the labour cost to assemble all the piece parts, sub-assemblies and top level assemblies. Record over multiple builds and volume to tease out hidden costs and inefficiencies.
* Understand the cost difference between making different volumes of product. It is more cost effective to build higher volumes of product so ensure your profit margin is not paying for the low volume premiums.
* Match your labour to the required function. If you have expensive skilled labour avoid using them on semi skilled activities unless they are not being utilised elsewhere.
* Try to smooth out labour demands, it may be better to operate at minimum staffing levels and pay overtime or bring in temporary staff when there are needs in labour demands than under utilise a permanent work force for long periods of time.
* If you require temporary staff or need to outsource certain functions, ensure you factor in any premium labour cost into your costs.

**Understand Downstream Costs**

* Product test and qualification
* Product certification
* Product documentation/materials
* Continuous improvement programme
* Product Support
* Warrantee Costs
* Marketing Costs
* Resellers discounts