

## Cost of Quality

A major source of costs which may be controlled are those relating to the area of Quality. As we discuss quality, we must understand in our industry, there are two definitions of quality.

Manufacturing's definition of quality says that **"Quality is the exact and continuous adherence to specification."**

Sales and retail definition of quality has to do with the "touchy-feely" side of the product. If it does not sit to the approval of the buyers "Educated Butt", the product might be considered 'poor quality'. If the frame does not have dowels, the product might be considered 'poor quality'. If the cushion is less than 7 inches thick, the product might be considered 'poor quality'.

Many thought that the ISO (International Standards Organization) 900x's were going to herald in a new era of quality. Perhaps it will in time. I recall a salesman telling me he sure wished we would hurry up and get ISO installed so we would quit leaving the legs out of sofas. (Legs were screwed on.) I had to explain that with ISO, we might only ship 3 legs with a sofa, but we would ship 3 legs consistently with each sofa.

ISO can not be installed anywhere, nor can any quality improvement program be installed, unless the heart and soul of the "Big Cohuna in the Corner Office" is completely behind the initiative.

If the head honcho is focused on profits, and if the belief is that profits are tied to delivery of product, then time and effort will not be spent on quality. The company's focus will only be to ship more product. Again, no matter how much lip service the CEO gives to quality, the organization will not build a product to specification until the CEO completely believes that production to specification is a very, if not the most, important ingredient of profit.

Focus on sales, production and delivery, with lip service to quality, works until the retail buyers don't buy. I had people in an upholstery company tell me proudly, that their cost of quality was only 3% of sales, and it had been that for several years. They implied, their quality was good, and their quality was consistent.

If your sales are \$12,000,000, and you spend 3% fixing quality related problems, this means you ONLY spend \$360,000 for quality problems. Those problems are the ones you can find on your P&L. Now if you are earning 2% profit, this 3% in quality costs equates to the profit on \$18,000,000 in sales. Yet your sales were only \$12,000,000.

Let's say you spent \$100,000 in making your product right, training your people to make it right, developing the products so they can be made right; and, you are able to reduce your cost of quality by \$125,000, you will increase your profit on the \$12,000,000 in sales from \$240,000 to \$365,000 or a **52% increase in profits without selling one more piece**. Your profits go from 2% to 3%.

The hidden costs of quality which do not show up on your P&L immediately are the costs associated with loss of a customer due to quality problems. How much harder and expensive is it to get a new customer than it is to take care of an old customer. These costs also surface when it is determined your profit level is not high enough to afford the bank to give you a lower interest rate. Your cost of sales is higher because of the amount of effort it will take to convince a buyer your product has any greater benefits than does your competitor. Your cost of turn over in personnel is higher, because, basically people want to spend their life doing something of value, not just shipping product they know is junk.

From a product definition, how do we obtain quality? First, the professional seller goes into the market and researches what the market wants, and what the market's perception of value ( or quality) for a product at a certain price incorporates. A list of **features** for a potential product is then developed and listed. The product should be in this fabric, with these cushions, the stripes should match on the back also. The springs should be such, the frame should be such, and the joints should be constructed in this manner. The show wood should be finished like this, etc.

This information is then brought back into, what I refer to, as the product definition and communication hub for the company. You might call it Product Development, or you might call it Sarah and Joe's area. In this area, the "Touchy - Feely" definition of quality (or value) is translated to a manufacturing quality standard.

What are the components of the manufacturing standard?

1. Exact frame drawings with each part drawn separately. The more standard a frame can be made, the less expensive the frame becomes. The trick is to make a standard frame look different.
2. A cutting pattern with parts labeled, for each type of fabric to be used. A pattern for stretchy fabric, a pattern for non stretch fabric, etc. (This is worth several articles.)
3. Sewing drawings are made with detail as to how parts are sewn together. Video tapes are also effective. A new sewing person can be trained to sew a product while watching a well done video of the job. These sewing videos can also be converted to videos that can be shown on a computer screen. The stitches per inch, type of thread, and seam width standards are incorporated into the sewing specifications along with any other information which will insure the product can be assembled consistently to specification..
4. Frame assembly drawings and videos are made. Frame staple placements, glue type and amount is determined and specified. The types of wood or wood products allowed are specified.
5. Filling specifications are made with weights of fiber given along with the methods that will be used to control these weights in production.

6. Assembly specifications and instructions with video of the assembly will be made.
7. Packaging specifications, with video, are made.
8. A Bill of Materials is created.
9. A detailed estimated labor analysis by man hour is made. Normally, this will explain and give the times expected for each detail of each assembly operation. This is a good check to insure the other instructional specifications are correct.

The Bill of Material must not contain a part which has not been placed on the purchasing Item Master. The Item Master contains a detailed description of each specific part which has been accepted in your company, and which will be allowed to be used in your product. Thus, if there is a part ordered from a new vendor, the part must meet the specifications or it can not be used. When a part is received in the plant, a random sample must be compared to the specification to insure the part complies and that the vendor's quality is also consistent.

These documents can now be scanned into a computer and stored on magnetic or optical media for review and maintenance of change records for history of the product. I know a manufacturer who was accused of producing a product which caught fire and destroyed a house. (In the minds of our legal friends, chairs just spontaneously burn. Yeah - Right.) The manufacturer could not produce records of exactly how the chair was constructed. So, guess what?

If the information is stored electronically, it can be reproduced anywhere in the world. Storage of this information electronically, rather than on paper kept in file cabinets or spread out all over the plant, makes it easier to insure the most current methods and materials are used in production. Should there be a catastrophic event such as a fire, the company has the ability to recover rapidly if the documents are available from back up stored off site.

Once the specifications for a product are fully developed, you have the definition for a quality product. Now to get it assembled using the specifications is another matter. If you pay 'piece work' so the **quantity** of production is rewarded, with nothing included for quality, I doubt you will ever achieve any degree of adherence to specification. If you say 7 stitches per inch, the machine sews faster at 5 stitches. If your specification calls for spacing staples 1 per inch, 1 per 3 inches makes the job go faster. Eliminate the glue, and beat the clock. To break the monotony of an assembly job, some 'piece work' assembly people just try to see how far they can deviate without getting caught.

Several manufacturers attempt to overcome this problem with inspectors. I saw one manufacturer which had inspectors inspecting the inspection of other inspectors, and a third tier, yep - you got it, inspecting the chief inspectors. What does an inspector cost? I believe about \$30,000 per person (with benefits). If you motivate your people to build the product to specification, and eliminate the need for just one inspector, at 2% profit, it is the same as adding \$1,500,000 in

sales.

How do you get the attention of the assembly people? First, ***if it is not measured, it will not happen.*** This means you need to have a control on each piece which will identify the person(s) responsible for the assembly of the product. Should a product come back or be found in the field to be misassembled, then the people responsible have earnings taken away, or are negatively recognized. Those assembly people with little or no defects are rewarded by recognition. There are several cost effective methods to track and maintain information about a product.

In the assembly process, you will always find better methods (you better!), or faster methods which necessitate a change in the specifications. Prior to implementation of the change, unless an emergency is declared, no one is allowed to change the specs, until it has been processed back through your central quality clearing area (Product Development). Leaders in manufacturing believe they have the 'power' to make immediate changes without having to go through the system. As people watch the leaders and emulate them, the 'power' filters down until we have the custodial staff making changes without going through the system. This leads to a destruction in the system which controls quality in manufacturing.

If you ever leave an opening so someone can say "John said do it this way because the specs are wrong", you are on the slippery slope back to no quality control in your organization.

Do you know your cost of quality by product? By fabric? By production line, By sewing area? By truck driver or common carrier? Do you know which clerical person took the order by phone? Can you monitor the cost when an improvement is made so you know if the improvement is justified?

Do you have the records to be able to spot statistically where your problems are occurring or, do you make massive changes in a product, and jump through hoops, when a major account calls in and advises the CEO that an arm broke on one chair?

Of course, the level of customer expectations must be met with consistency throughout the entire company. What is your specification for the number of times a phone is allowed to ring before it is answered? What is the maximum amount of time a customer must wait for a parts order? When is a customer notified a fabric is no longer available?

You might think this program is too expensive. But what if you can put another 1.5% on the bottom line? What if your customer receives the product without defect or damage every time, and can 'cross-dock' your product while they are 'deluxing' your competitors product? Is your product built with consistency to specification worth more money? After all, the retailer does not have to spend any more money getting your product ready to sell. The retailer just sells your product, delivers your product, and collects the money from a satisfied customer.

I would certainly think a savvy retailer will pay more for a product which comes in, goes out, and sticks -- every time. Your 2% profit should go to 4%. In previous articles, we have shown you how to take a couple of percent in reduction of costs of markets. Now, I'm sure you're up to 5% profit after taxes. Right?

At least one thing should be understood. It is much easier to make more profit by consistently producing and shipping to specification, than it is to try to reduce your direct labor cost in your products by an equal percentage.