

Example of a Development Project

Door Knobs

What the Customer Wants

- Red, White and Blue
- Child of 5 can open them
- Dog proof
- Cheap
- Quantity: 50

What does this mean for the Developer

- Red, White and Blue
 - What are the ranges of each color to satisfy this need?
- Child of 5
 - Size of knob
 - Minimum torque needed to turn knob
- Dog Proof
 - What materials can be used to be resistant to dog gnawing on the the knob?

After some research

- Color Requirements
 - Pure Hue $\pm 5\%$
- Child Requirements
 - 4 " diameter
 - .25 pound-inches
- Dog Requirements
 - No wood
 - Must support Child Requirements
 - Possibilities: Use plastic with compressive strength greater than 14,000 psi

How do I build it

- Design of knob
- Fabrication of door knob
- Materials list
- Costs
 - Compare different characteristics which meet needs of customer and is cost competitive.
 - Product costs and developmental costs
 - Manufacturing costs

How do I prove that I met what the customer needs

- Test the color using a matching scheme or a spectrophotometer
- Test the door knob with a caliper
- Test the torque with a torque wrench
- Test the material composition and strength

Can I easily make it

- Can I manufacture 50 units?
- How do I assure that the 50 units meet the needs of the customer?
- How much must I invest on the equipment needed to make the 50 units or should I contract it out to others?

Will I be successful?

- Meet customer needs
- Meet cost targets to make a profit
 - Fixed costs, plant costs, and variable costs
- Prove to the customer that the product meets their needs