

# Product design and decision making tools

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In Its life cycle, Identify the Issues Likely to confront the operations manager, and his or her possible actions. Product Alpha has annual sales of 1, 000 units and a contribution of \$2, 500; it is in the introductory stage. Product Bravo has annual sales of 1, 500 units and contribution of \$3, 000; it is in the growth stage. Product Charlie has annual sales of 3, 500 units and a contribution of \$1 , 750; it is in the decline stage.

Sort descending this list by looked at the individual dollar contribution and total annual dollar contribution. Product Bravo Product Alpha Product Charlie  
 Contribution \$3, 000 \$2500 \$1 , 750 Annual sales 1, 500 units 1, 000 units 3, 500 units Life cycle Growth Introduction Decline Sales Look at the table and graph, product Charlie at decline stage of life cycle and know this product will be end in the certain period from now. The products are not up to date, not suitable for this era (technology era). Thus, the customers turn to the competitor products because they come out with new and fresh idea.

Therefore, this product must produce in the small quantity while it has the demand and also as organization responsibility for certain people that can't adapt new 1 | P a GE products. Besides that the organization must plan to terminate offering. For product Alpha, it seat at the introduction of life cycle, so for this product, it didn't have any problem to produce in a large quantity if it get the good response from customers but if the response from customer is bad or not well, produce the product in the small quantity.

Because, these products are new in market, not all customers know about it and also still need some changes. Additionally in this stage, should to do ore on research, product development, process modification and enhancement

and supplier development. In addition, the advertising to introduce or promote this product to customer must do it well. Furthermore, the life cycle of product Bravo is growth. In this stage, the product is become stable, because the customers already know about the products.

Thus, by add more on quantities to accommodate the raise in product demand. Last but not least, the advertising also must do for create the demand. Question 5. 11 The product design group of Floors Electric Supplies, Inc. , has determined that it needs to design a new series of switches. It must decide on one of three design strategies. The market forecast is for 200, 000 units. The better and more sophisticated the design strategy and the more time spent on value engineering, the less will be the variable cost. The chief of engineering design, Dry.

W. L. Berry, has decided that the following costs are a good estimate of the initial and variable costs connected with each of the three strategies: a) Low-tech: a low technology, low-cost process consisting of hiring several new Junior engineers. This option has a fixed cost of \$45, 000 and variable-cost probabilities of 0. 3 for \$0. 55 each, 0. 4 for \$0. 50 and 0. For \$0. 45. B) Subcontract: a medium-cost approach using a good outside design staff. This approach would have a fixed cost of \$65, 000 and variable-cost probabilities of 0. Of c) High-tech: a high-technology approach using the very best of the inside staff and the latest computer-aided design technology. This approach has a fixed cost of \$75, 000 and variable-cost probabilities of 0. 9 of \$0. 40 and 0. 1 of \$0. 35. What is the best decision based on an expected monetary value (MOVE) criterion? (Note: We want the lowest MOVE, as we are dealing with costs in this problem. ) page (0. 30) (0. 40) \$45, 000 + (200, 000 x \$0.

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$0) = \$145,000$  Low technology  $\$45,000 + (200,000 \times \$0.55) = \$155,000$   
 $\$45,000 + (200,000 \times \$0.45) = \$135,000$  Subcontract  $(0.70) \$65,000 +$   
 $(200,000 \times \$0.5) = \$155,000$   $(0.20) \$65,000 + (200,000 \times \$0.40) =$   
 $\$145,000$   $(0.10) \$65,000 + (200,000 \times \$0.35) = \$135,000$   $(0.90)$  High  
 technology  $\$75,000 + (200,000 \times \$0.40) = \$155,000$   $\$75,000 + (200,$   
 $000 \times \$0.35) = \$145,000$  Low technology :  $(0.3) \$155,000$   $(0.4) \$145,$   
 $000$   $(0.3) \$135,000$ !  $\$145,000$  subcontract:  $(0.7) \$155,000$   $(0.2) \$145,$   
 $000$   $(0.1) \$135,000$ !  $\$151,000$  High the choice that will be choosing is the  
 lowest MOVE. That means the lowest potential costs to us. So, low  
 technology is the best. Page Question BOOM Prepare Bill of Material of a  
 yellow wooden pencil with eraser.

Omega sums Stella Bill of Material (MM) for eraser Description Black color ink  
 Quantity ml Rubber sums Stella NORA 01 3 gram Bill of Material (MM) for  
 yellow wooden pencil NORA 02 Number Yellow color paint Wooden 2 Carbon  
 Bill of Material (MM) for yellow wooden pencil with eraser 10 ml 1 gram  
 Plastic Case Studies (Product Design at Regal Marine) 1 . How does the  
 concept of product life cycle apply to Regal Marine products? The concept of  
 product life cycle that Regal Marine uses is continuously under pressure o  
 introduce new products.

Also continuously introduces innovative and high- quality new boats. The life  
 cycles that Regal apply are relatively few years. Less than four to five years  
 before a boat is out of design (laggard) and life cycle is ended. With life  
 cycles as short as three years, a steady stream of new products is need. 2.  
 What strategy does Regal use to stay competitive? Strategy that Regal use  
 to stay competitive is differentiation of products. Regal constantly present  
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the new innovative, new design and high-quality boats to keep on competitive in the luxury performance boat market. 3.

What kind of engineering savings is Regal achieving by using CAD technology rather than traditional drafting technology? By using CAD, Regal are saving in term of cost and time. Also, it let a variety of designs and the tests are economical. By using it, labor in (drafting) engineering department also can be reducing. 4. What are the likely benefits of the CAD design technology? Benefits of the CAD design technology are saving time, costs, straightforward and faster rather than traditional. Also by using this technology, we can see the design in AD, AD, simulations, and check or edit the design immediately.