Problem Statement

Bono Company produces a variety of products in its large production facility. The company uses a just-in-time approach and only keeps about half a day's worth of inventory of all input materials. The company uses its reputation for reliable on-time delivery and flexibility as a competitive weapon and charges a premium price for its products because of its service capabilities.

Bono Company currently makes 20,000 units of Part U-2 for use in other products. It can make the part in-house or buy it from Edge Corporation for $60 per unit. Edge Corporation has a reputation for making high-quality parts but delivering orders 5-7 days late about 70% of the time.

If Bono outsources (purchases) Part U-2, the company can avoid only 50% of the fixed costs associated with the part. Bono Company's data for in-house production of Part U-2 are:

Direct materials	$30 per unit
Direct labor	19
Variable overhead	11
Fixed overhead	20
Total	$80 per unit

Finally, Bono Company expects that Part U-2 will remain technologically viable for five years before newer products will make it obsolete. Bono Company pays taxes in the 40% tax bracket and the company's opportunity cost of capital is 5%.

For this analysis, let Option A be Making Part U-2 and Option B be Outsourcing Part U-2.

Requirements

A. Calculate the net relevant cash flow effect of this decision and indicate whether it is in favor of Making or Outsourcing.

B. Prepare a Cost-Benefit Comparison Equation (CBCE) for Bono Company's decision regarding whether to outsource Part U-2. Label all parts of the equation clearly and be as specific as possible, given the information in the problem, when you describe each part.

C. Indicate whether you recommend that Bono Company Make or Outsource Product U-2, and why you believe your recommendation is in the best interests of Bono Company. Be sure your CBCE is consistent with your recommendation.

Cash Flow Analysis (Stage 1)

Resource	Make	Outsource
Direct materials	$30 per unit × 20,000 units = $600,000	$0
Direct labor	$19 per unit × 20,000 units = $380,000	$0
Variable overhead	$11 per unit × 20,000 units = $220,000	$0
Fixed overhead	$10 per unit × 20,000 units = $200,000	$0
Purchase price	$0	$60 per unit × 20,000 units = $1,200,000
Total	$1,400,000	$1,200,000

Adjustments for taxes and time

The Stage 1 analysis indicates a $200,000 difference in favor of Outsourcing.

Since Bono pays taxes at the 40% rate, $200,000 in annual savings increases income by the same amount, increasing the tax bill by $80,000. So the annual net cash flow improvement is $120,000 = $200,000 × (1 – 0.40)

Since Bono Company expects Part U-2 to be viable for only five more years, we need the present value over five years of a $120,000 cash flow improvement:

$120,000 × 4.3295 = $519,400

(The present value of a five-year annuity of $120,000 at 5%, where 4.3295 is from the present value of an annuity table.)

*It is also OK to include $20 per unit under the "make" column and $10 per unit under the "Outsource" column because the difference in fixed overhead is $200,000 either way, and it is the difference that is relevant.

Cost-Benefit Comparison Equation (Stage 2)

(1) Net cash flow effect of making part U-2 relative to outsourcing part U-2	+	(2) Net qualitative benefits of making part U-2	?	(3) 0
($519,400)	+	**The value of maintaining control of the availability of Part U-2 and not risking late shipments to customers due to waiting for parts** + **The value of maintaining workforce and/or community relations** – **The opportunity cost of not using the fixed-asset resources for other purposes.**	?	**0**

Students can recommend either "make" or "outsource" but full credit requires them to articulate what the recommendation implies about their subjective valuation of the qualitative factors:

Make: "I recommend continuing to make the part because the present value of the net qualitative benefits is greater than $519,400."

Buy: "I recommend outsourcing because the present value of the net qualitative benefits is less than $519,400."