



MANAGEMENT ACCOUNTING FOR BUSINESS

FIFTH EDITION

COLIN DRURY

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Business 5e*
By Colin Drury
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Part Two: **Information for decision-making**

Chapter Four: **Measuring relevant costs and** **revenues for decision-** **making_**

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Relevant costs and revenues

- The relevant financial inputs for decision-making are future cash flows that will differ between the various alternatives being considered.
- Therefore only relevant (incremental/differential) cash flows should be considered.
- Relevant costs and revenues are required for special studies such as:
 1. Special selling price decisions.
 2. Product-mix decisions when capacity constraints exist
 3. Decisions on replacement of equipment.
 4. Outsourcing (Make or buy) decisions.
 5. Discontinuation decisions.
- Decisions should not be based only on items that can be expressed in quantitative terms — Qualitative factors must also be considered.



Special pricing decisions



- Special pricing decisions are typically one-time only orders and/or orders below the prevailing market price.

Example 1 (A short-term order)

Monthly capacity for a department within a company = 50 000 units

Expected monthly production and sales for next quarter at normal selling price of £40 = 35 000 units

Estimated costs and revenues (for 35 000 units):

	£	£
Direct labour	420 000	12
Variable costs	350 000	10
Manufacturing non-variable overheads	280 000	8
Marketing and distribution costs	105 000	3
Total costs	1 155 000	33
Sales	1 400 000	40
Profit	245 000	7

The excess capacity is temporary and a company has offered to buy 3 000 each month for the next three months at a price of £20 per unit. Extra selling costs for the order would be £1 per unit.





- Evaluation of the order (£'s monthly costs and revenues)

	(1) Do not accept order	(2) Accept order	(3) Difference (Relevant costs)
Direct labour	420 000	420 000	
Variable costs	350 000	380 000	30 000
Manufacturing non- variable overheads	280 000	280 000	
Extra selling costs		3 000	3 000
Marketing /dist. costs	105 000	105 000	
Total costs	1 155 000	1 188 000	33 000
Sales	1 400 000	1 460 000	60 000
Profit	245 000	272 000	27 000





- Only variable costs, the extra selling costs and sales revenues differ between alternatives and are relevant costs/revenues.
- Two approaches to presenting relevant costs — Present only columns 1 and 2 or just column 3.
- Since relevant revenues exceed relevant costs the order is acceptable subject to the following assumptions:
 1. Normal selling price of £40 will not be affected.
 2. No better opportunities will be available during the period.
 3. The resources have no alternative uses.
 4. The fixed costs are unavoidable for the period under consideration.
- Note that the identification of relevant costs depends on the circumstances.





Example 1 (A longer-term order)

- Assume now spare capacity in the foreseeable future (Capacity = 50 000 units and demand = 35 000 units) and that an opportunity for a contract of 15 000 units per month at £25 SP emerges involving £1 per unit special selling costs.
- No other opportunities exist so if the contract is not accepted direct labour will be reduced by 30%, manufacturing non-variable costs by £70 000 per month and marketing by £20 000. Unutilised facilities can be rented out at £25 000 per month.





- Evaluation of the order (£'s monthly costs and revenues):

	(1) Do not accept — <u>orders</u>	(2) Accept the <u>orders</u>	(3) Difference <u>(Relevant costs)</u>
Units sold	35 000	50 000	15 000
	£	£	£
Direct labour	294 000	420 000	126 000
Variable costs	350 000	500 000	150 000
Manufacturing non- variable overheads	210 000	280 000	70 000
Extra selling costs		15 000	15 000
Marketing/dist.costs	<u>85 000</u>	<u>105 000</u>	<u>20 000</u>
Total costs	939 000	320 000	381 000
Revenues-facilities rental	25 000		25 000
Sales revenues	<u>1 400 000</u>	<u>1 775 000</u>	<u>(375 000)</u>
Profit	<u>486 000</u>	<u>455 000</u>	<u>31 000</u>





- Company will be better off by £31 000 per month if it reduces capacity (assuming there are no qualitative factors).
- You can present only columns 1 and 2 or just column 3 (note the opportunity cost shown in column 3).
- In the longer-term all of the above costs and revenues are relevant.





Product mix decisions with capacity constraints

- Limiting or scarce factors are factors that restrict output.
- The objective is to concentrate on those products/services that yield the largest contribution per limiting factor.

Example

Components	X	Y	Z
Contribution per unit	£12	£10	£6
Machine hours per unit	6	2	1
Estimated sales demand (units)	2 000	2 000	2 000
Required machine hours	12 000	4 000	2 000
Contribution per machine hour	£2	£5	£6
Ranking per machine hr	3	2	1

Capacity for the period is restricted to 12 000 machine hours.





- Profits are maximized by allocating scarce capacity according to ranking per machine hour as follows:

	Machine hours used	Balance of machine hours available
Production		
2 000 units of Z	2 000	10 000
2 000 units of Y	4 000	6 000
1 000 units of X	6 000	–

The production programme will result in the following:

2 000 units of Z at £6 per unit contribution	12 000
2 000 units of Y at £10 per unit contribution	20 000
1 000 units of X at £12 per unit contribution	<u>12 000</u>
Total contribution	<u>44 000</u>

- Note that qualitative factors should be taken into account.





Decisions on replacement of equipment

- The original purchase cost of the old machine, its written down value and depreciation are irrelevant for decision-making.

Example

WDV of existing machine (remaining life of 3 years)	£90 000
Cost of new machine (expected life of 3 years and zero scrap value)	£70 000
Operating costs (£3 per unit old machine) (£2 per unit new machine)	
Output of both machines is 20 000 units per annum	
Disposal value of old machine now	£40 000
Disposal value of new and old machines (3 years time)	Zero





- Total costs over a 3 year period are as follows:

	(1)	(2)	(3)
	Retain	Buy	Difference
	£	£	£
Variable operating costs:			
20 000 units at £3			
per unit (3 yrs)	180 000		
20 000 units at £2			
per unit (3 yrs)		120 000	(60 000)
Old machine book value:			
3-year annual			
depreciation charge	90 000		
Lump sum write-off		90 000	
Old machine disposal value		(40 000)	(40 000)
Initial purchase price			
of new machine		<u>70 000</u>	<u>70 000</u>
Total cost	<u>270 000</u>	<u>240 000</u>	<u>(30 000)</u>





- Note that the depreciation charge is not a relevant cost.
- Columns 1 and 2 or just column 3 can be presented but it is more meaningful to restate column 3 as follows:

Savings on variable operating costs (3 years)	60
000	
Sale proceeds of existing machine	<u>40</u>
<u>000</u>	
	100
000	
Less purchase cost of replacement machine	<u>70</u>
<u>000</u>	
Savings on purchasing replacement machine	<u>30</u>
<u>000</u>	





Outsourcing (make or buy decisions)

- Involves obtaining goods or services from outside suppliers instead of from within the organization.

Example

A division currently manufactures 10 000 components per annum.

The costs are as follows:

	Total (£)	Per unit (£)
Direct materials	120 000	12
Direct labour	100 000	10
Variable manufacturing overhead costs	10 000	1
Fixed manufacturing overhead costs	80 000	8
Share of non-manufacturing overheads	<u>50 000</u>	<u>5</u>
Total costs	<u>360 000</u>	<u>36</u>

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A supplier has offered to supply 10 000 components per annum at a price of £30 per unit for a minimum of three years. If the components are outsourced the direct labour will be made redundant. Direct materials and variable overheads are avoidable and fixed manufacturing overhead would be reduced by £10 000 per annum but non-manufacturing costs would remain unchanged. The capacity has no alternative uses.





- Assuming there is no alternative use of the released internal capacity arising from outsourcing annual costs will be as follows:

	(1) Make (£)	(2) Buy (£)	(3) Difference (£)
Direct materials	120 000		120 000
Direct labour	100 000		100 000
Variable manufacturing overhead	10 000		10 000
Fixed manufacturing overheads	80 000	70 000	10 000
Non-manufacturing costs	50 000	50 000	
Outside purchase cost incurred/ (saved)	<u> </u>	<u>300 000</u>	<u>(300 000)</u>
Total costs incurred/ (saved)	<u>360 000</u>	<u>420 000</u>	<u>(60 000)</u>





- Columns 1 and 2 can be presented or just column 3 which shows that the relevant costs of making are £240 000 compared with £300 000 from outsourcing (buying).
- Where the released internal capacity arising from outsourcing can be used to generate rental income or a profit contribution the lost income or profit contribution represents an opportunity cost associated with making the components.
- Assume that the released capacity from outsourcing enables a profit contribution of £90 000 to be generated. The relevant costs of making will now be:

Relevant costs (described above)	£240 000
Opportunity cost (Lost profit contribution)	90 000
Total relevant costs of making	<u>330 000</u>

Outsourcing is now the cheaper alternative.





Discontinuation decisions

- Routine periodic profitability analysis by cost objects provides attention-directing information that highlights those potential unprofitable activities that require more detailed (special studies).
- Assume the periodic profitability analysis of sales territories reports the following:

	Southern	Northern		Central	Total
	£000	£000	£000	£000	
Sales	900	1 000	900	2 800	
Variable costs	(466)	(528)	(598)	(1 592)	
Fixed costs	<u>(266)</u>	<u>(318)</u>	<u>(358)</u>	<u>(942)</u>	
Profit/(Loss)	<u>168</u>	<u>154</u>	<u>(56)</u>	<u>266</u>	

- Assume that special study indicates that £250 000 of Central fixed costs and all variable costs are avoidable and £108 000 fixed costs are unavoidable if the territory is discontinued.





- The relevant financial information is as follows:

	Keep Central open £000	Discontinue Central £000	Difference £000
Variable costs	1 592	994	598
Fixed costs	<u>942</u>	<u>692</u>	<u>250</u>
Total costs to be assigned	2 534	1 686	848
Reported profit	<u>266</u>	<u>214</u>	<u>52</u>
Sales	<u>2 800</u>	<u>1 900</u>	<u>900</u>

- Columns 1 and 2 can be presented or just column 3 which shows that the relevant revenues arising from keeping the territory open are £900 000 and the relevant (incremental) costs are £848 000. Therefore Central provides a contribution of £52 000 towards fixed costs and profits.

