EXAMPLE 9.5

Case A

One of the divisions within Rhine Autos is currently negotiating with another supplier regarding outsourcing component A that it manufactures. The division currently manufactures 10 000 units per annum of the component. The costs currently assigned to the components are as follows:

	Total costs of producing 10 000 components (£)	*Unit cost (£)*
Direct materials AB	120 000	12
Direct labour	100 000	10
Variable manufacturing overhead costs (power and utilities)	10 000	1
Fixed manufacturing overhead costs	80 000	8
Share of non-manufacturing overheads	50 000	5
Total costs	360 000	36

The above costs are expected to remain unchanged in the foreseeable future if the Rhine Autos division continues to manufacture the components. The supplier has offered to supply 10 000 components per annum at a price of £30 per unit guaranteed for a minimum of three years. If Rhine Autos outsources component A, the direct labour force currently employed in producing the components will be made redundant. No redundancy costs will be incurred. Direct materials and variable overheads are avoidable if component A is outsourced. Fixed manufacturing overhead costs would be reduced by £10 000 per annum but non-manufacturing costs would remain unchanged. Assume initially that the capacity that is required for component A has no alternative use. Should the division of Rhine Autos make or buy the component?

Case B

Assume now that the extra capacity that will be made available from outsourcing component A can be used to manufacture and sell 10 000 units of component Z at a price of £34 per unit. All of the labour force required to manufacture component A would be used to make component Z. The variable manufacturing overheads, the fixed manufacturing overheads and non-manufacturing overheads would be the same as the costs incurred for manufacturing component A. Materials AB required to manufacture component A would not be required but additional materials XY required for making component Z would cost £13 per unit. Should Rhine Autos outsource component A?

As in earlier exhibits, the third approach is to list only the relevant costs, cost savings and any relevant revenues. This approach is shown in column (3) of Exhibit 9.3 (Section A). This column represents the differential costs or revenues and it is derived from the differences between columns (1) and (2). In column (3), only the information that is relevant to the decision is presented. This approach shows that the additional costs of buying component A are £300 000 but this enables costs of £240 000 associated with making component A to be saved. Therefore the company incurs an extra cost of £60 000 if it buys component A from the outside supplier.

We shall now explore what happens when the extra capacity created from not producing component A has an alternative use. Consider the information presented in Example 9.5 (Case B). The management of Rhine Autos should now consider the following alternatives:

1. make component A and do not make component Z;
2. outsource component A and make and sell component Z.

EXHIBIT 9.3 Evaluating a make-or-buy decision

Section A – Assuming there is no alternative use of the released capacity

	Total cost of continuing to make 10 000 components (1) (£ per annum)	*Total cost of buying 10 000 components (2) (£ per annum)*	*Difference = Extra costs/ (savings) of buying (3) (£ per annum)*
Direct materials AB	120 000		(120 000)
Direct labour	100 000		(100 000)
Variable manufacturing overhead costs (power and utilities)	10 000		(10 000)
Fixed manufacturing overhead costs	80 000	70 000	(10 000)
Non-manufacturing overheads	50 000	50 000	
Outside purchase cost incurred/(saved)		300 000	300 000
Total costs incurred/(saved) per annum	360 000	420 000	60 000

Extra costs of buying = £60 000

Section B – Assuming the released capacity can be used to make component Z

	(1) Make component A and do not make component Z (£ per annum)	*(2) Buy component A and make component Z (£ per annum)*	*(3) Difference = Extra costs/ (benefits) of buying component A (£ per annum)*
Direct materials XY		130 000	130 000
Direct materials AB	120 000		(120 000)
Direct labour	100 000	100 000	
Variable manufacturing overhead costs	10 000	10 000	
Fixed manufacturing overhead costs	80 000	80 000	
Non-manufacturing overheads	50 000	50 000	
Outside purchase cost incurred		300 000	300 000
Revenue from sales of component Z		(340 000)	(340 000)
Total net costs	360 000	330 000	(30 000)

Extra benefits from buying component A and using the released capacity to make component Z = £30 000

It is assumed that there is insufficient capacity to make both components A and Z. The appropriate financial information is shown in Exhibit 9.3 (Section B). You will see that the same costs will be incurred for both alternatives for direct labour and all of the overhead costs. Therefore these items are irrelevant and the same amount can be entered in columns (1) and (2) or they can be omitted from both columns. Note that direct materials AB (£120 000) will be incurred only if the company makes component A, so an entry of £120 000 is shown in column (1) and no entry is made in column (2). However, if component A is bought from the supplier the capacity will be used to produce component Z and this will result in a purchase cost of £130 000 being incurred for materials XY that are required to produce product Z. Thus £130 000 is entered in column (2) and no entry is made in column (1) in respect of materials XY. Also note that the sales revenue arising from the sale of component Z is shown in parentheses in column (2). A comparison of the totals of columns (1) and (2) indicates that that there is a net benefit of £30 000 from buying component A if the released capacity is used to make component Z.

REAL WORLD VIEWS 9.3

Manufacturing rethinks outsourcing

The economic recession has resulted in original equipment manufacturers (OEMs) seeking to drive down costs by re-examining their manufacturing strategy, with many companies increasing their level of outsourcing, writes Ronnie Darroch, Plexus regional president (EMEA) in *Electronics Weekly*. He argues that OEMs can be of benefit to electronic manufacturing service (EMS) providers (like Plexus who provide electronics design, manufacturing and after-market services to companies with high complexity products) as OEMs undertake strategic reviews and decide to outsource manufacturing to an EMS provider. Outsourcing all or a portion of their manufacturing allows OEMs to convert internal fixed costs to external variable costs, leaving it more able to deal with changes in end market demand, particularly during periods of economic instability. This can create a win–win for both companies with growth opportunities for the EMS provider and the OEM left to focus on its core competencies.

Questions

1 How can outsourcing change the cost structure of an organization?
2 What are the major benefits and limitations of outsourcing?

Reference

Darroch, R. (2013) 'Manufacturers rethink outsourcing, says Plexus, president EMEA', *Electronics Weekly*, 11 June, p. 4. Available at www.electronicsweekly.com/news/business/viewpoints/manufacturers-rethink-outsourcing-says-plexus-president-emea-2013-12/

Instead of presenting the information in columns (1) and (2), you can present the relevant costs and benefits as shown by the differential items in column (3). This column indicates that the extra costs of buying component A and using the released capacity to make component Z are:

	(£)
Outside purchase cost incurred	300 000
Purchase of materials XY for component Z	130 000
	430 000

The extra benefits are:

	(£)
Revenues from the sale of component Z	340 000
Savings from not purchasing materials AB	120 000
	460 000

The above alternative analysis also shows that there is a net benefit of £30 000 from buying component A if the released capacity is used to make component Z.

DISCONTINUATION DECISIONS

Most organizations periodically analyse profits by one or more cost objects, such as products or services, customers and locations. Periodic profitability analysis can highlight unprofitable activities that require a more detailed appraisal (sometimes referred to as a special study) to ascertain whether or not they should be discontinued. In this section, we shall illustrate how the principle of relevant costs can be applied to discontinuation decisions. Consider Example 9.6. You will see that it focuses on a decision