

Context – B & R Engineering Ltd

James Broadfield founded Broadfield Engineering, just outside Birmingham, in 1946. In 1962, Paul Rose joined the flourishing business as a partner and it was renamed B & R Engineering. It is near to its main customers, the Midland car industry and its raw material suppliers, the steel industry, making this an ideal location.

In 1984, Paul's son, Andrew, joined the business straight from school at 16. Today, following the retirement of both James and Paul, Andrew is the Managing Director and sole shareholder of B & R Engineering Ltd at its new bigger factory also just outside Birmingham.

B & R Engineering Ltd specialises in the manufacture of machine press tools and prototype parts. Its main customers are component companies that produce components, such as gear boxes, clutches and brake assemblies, for the motor car industry nationally and internationally (see chart).

B & R Engineering Ltd employs a Works Manager, Accountant, 5 machine tool makers, 3 CNC operators, 1 workshop technician and 1 part-time office clerk.

Specialist machine press tool making is in a highly competitive worldwide market. In recent years, many British companies have looked to the Far East, China and Korea, to purchase their machine press tools but some companies are returning to manufacturers in the UK.

B & R Engineering Ltd has invested heavily in CAD/CAM using American software which has been specially developed for its needs. It believes in and operates TQM.

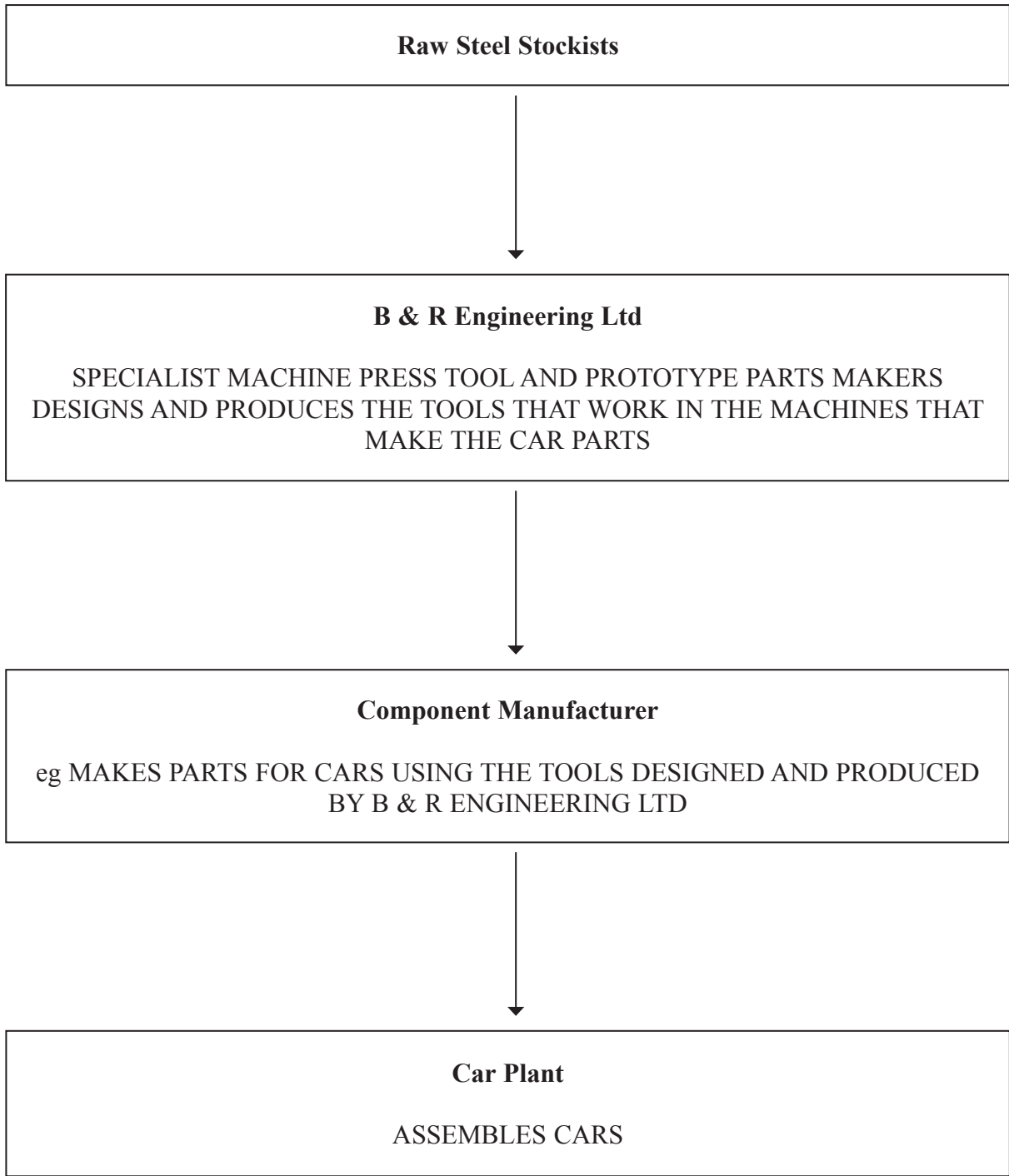
Its mission statement is – 'to become a market leader by continuous investment in the most advanced technology in the world.' It has a 20-year plan to achieve this aim through the objectives of increasing profits and growth of its market share.

Andrew Rose says: "We have very high staff retention and while this is partly due to the good salaries paid, a lot of this is down to our approach to the business. We believe that our staff share our values and are proud of the quality of their work. This is very important because without their support we would not be as successful as we are. We are one of the quiet little businesses just getting on with things. Our success is based on successfully marrying new technology with a happy workforce".

B & R Engineering Ltd tries to attract well qualified machine tool makers. It offers apprenticeships and sponsorship as well as attending graduate job fairs.



The following chart shows where the business fits into the chain of production for the car manufacturing industry.



Answer ALL questions.

For each question, choose an answer A, B, C or D and put a cross in the box (☒).
Mark only one answer for each question. If you change your mind about an answer,
put a line through the box (☒) and then mark your new answer with a cross (☒).

1. (a) (i) Revenue and overheads are shown in a

- A bank statement
- B invoice
- C balance sheet
- D profit and loss account

(ii) If B & R Engineering Ltd wanted to buy steel it could use

- A trade credit
- B a salary
- C capital
- D shares

(iii) B & R Engineering Ltd's costs that stay the same when output increases are known as

- A variable
- B total
- C direct
- D fixed

(iv) The department responsible for recruitment is

- A human resources (personnel)
- B finance
- C marketing
- D production



(v) An organisation which represents employees is a

- A credit union
- B trade union
- C labour union
- D customs union

(5)



(b) (i) What is meant by a bonus?

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(1)

(ii) Give an example of a start-up cost for a business.

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(1)

(iii) What is a receipt?

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(1)

(iv) What do the letters 'plc' at the end of a business name stand for?

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(1)

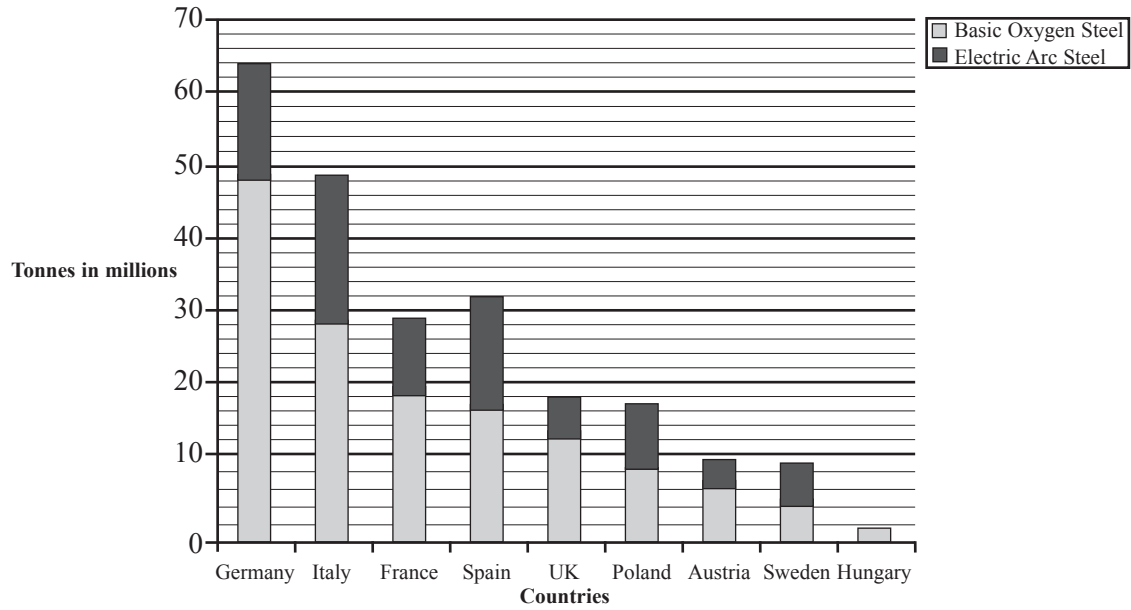
(v) Name **ONE** example of an industrial action that could be carried out by workers.

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(1)



European Steel Production 2008



The above chart shows the total number of tonnes of steel produced in Europe in 2008.

(c) (i) Which country produced the most basic oxygen steel?

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 (1)

(ii) Which country produced 6 million tonnes of electric arc steel?

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 (1)

(iii) Calculate the total electric arc steel produced in Germany, Italy, France, Spain and the UK.

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 (1)



(v) Explain **ONE** problem B & R Engineering Ltd might have if it buys steel from other countries.

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(3)

Q1

(Total 20 marks)

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B & R Engineering Ltd buys its steel in bulk. This means it can keep its costs down.

(b) How would buying steel in bulk help B & R Engineering Ltd keep its costs down?

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(3)



B & R Engineering Ltd has invested a lot of money in CAD (Computer Aided Design) and CAM (Computer Aided Manufacture).

(c) (i) Discuss **ONE** advantage of using CAD.

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(ii) Discuss **ONE** advantage of using CAM.

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(3)



Job production is used at B & R Engineering Ltd.

(d) (i) What is meant by job production?

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(2)

(ii) Explain an advantage **OR** a disadvantage of job production to B & R Engineering Ltd.

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(3)

Q2

(Total 20 marks)

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B & R Engineering Ltd uses the cost plus pricing method when pricing its products. One machine press tool costs £10 000 to produce with a mark up of 25%.

(b) (i) Calculate the price of this machine press tool to the customer.

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(2)

(ii) Identify why businesses use cost plus pricing.

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(2)



Price and product are important parts of the marketing mix of B & R Engineering Ltd.

(c) (i) Identify **TWO** other parts of the marketing mix.

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(2)



4. Extract from the Profit & Loss Account of B & R Engineering Ltd for the year ended 31 March 2008.

	£
Sales revenue	900 000
Cost of sales	400 000
Gross profit	?
Expenses	380 000
Net profit	?

$$\frac{\text{Gross profit}}{\text{Sales revenue}} \times 100$$

$$\frac{\text{Net profit}}{\text{Sales revenue}} \times 100$$

(a) (i) Using the above Profit & Loss Account, calculate the gross profit and net profit for B & R Engineering Ltd.

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(2)

(ii) Using the above Profit & Loss Account, calculate the gross profit ratio and net profit ratio for B & R Engineering Ltd.

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(2)



