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| University of Leicester logo | MA1254 – Business Challenge |

Belvoir Dairies Limited

# Background

Belvoir Dairies Limited (BDL) is a producer of high quality cheese for specialist cheese shops, delicatessens and similar outlets. It operates two dairies on the edge of the Vale of Belvoir (pronounced bee-vər) in North East Leicestershire, and it produces three types of cheese:

* *Blue Belvoir*, a traditional blue veined cheese similar to Blue Stilton. This is BDL’s premium product.
* *White Belvoir*, a crumbly white cheese, made in the same way as Blue but without the blue veining.
* *Red Belvoir*, a hard cheese similar to Cheddar but coloured red by the addition of annatto, a natural red dye.

The company has recently appointed a new CEO who believes BDL is underperforming. She has invited you to examine BDL’s operations and suggest improvements.

# Cheese making

BDL makes cheese by using a setting agent, rennet, to separate milk into curds (the solid part) and whey (the liquid part). The curds are drained and pressed into special cylindrical moulds called hoops, then allowed to mature until they form cheese. On average,

it takes 10 litres of milk to produce 1kg of cheese and each hoop weighs 8kg.

In the case of Blue Belvoir, a harmless blue mould culture (Penicillium roqueforti) is added to give the distinctive blue veining. In the case of Red Belvoir, annatto is added to give it the distinctive red colour.

Blue and White are ready for sale after about 9 weeks and must be sold within 2-3 weeks of being ready if they are to be at their best. Red, being a harder cheese, stores better and can be sold at 3-12 months.

# Markets

As already noted, BDL sells most of its output to specialist retailers. There is also a market for intermediaries who sell on to high-end restaurants and similar outlets or for export, and a small amount is sold through the dairy shop to personal callers. Products are dispatched by courier, except for personal callers, with the customer paying carriage.

Sales are highly seasonal, with a significant proportion of Blue and White sold in the run up to Christmas. Sales of red show a similar trend, to a lesser extent. As Blue and White must be sold at peak maturity, they are produced to meet expected demand. Red, being a harder cheese that stores well, is produced from the milk remaining after the required Blue and White have been produced.

The current target levels of sales and selling prices are:

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| --- | --- | --- |
|  | Annual sales (tonnes) | Average selling price (£ per kg) |
| Blue | 450 | 10.50 |
| White | 300 | 7.00 |
| Red | 450 | 7.00 |

BDL’s Sales Department believes that the market for White and Red is fully supplied and that it would not be possible to increase prices profitably. However, they consider the market for Blue to be more price sensitive. Their estimate is that sales would respond to price changes as follows:

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| --- | --- | --- |
| Selling price (£ per kg) | Annual sales (tonnes) | Income (£) |
| 12.00 | 350 | 4200 |
| 10.50 | 450 | 4725 |
| 9.00 | 650 | 5850 |
| 7.50 | 900 | 6750 |

# Raw materials

The principal raw material is fresh milk. Currently, BDL collects milk from a local co-operative of dairy farms using its own tanker, which has a capacity of 35,000 litres. BDL has undertaken to buy the full output from these farms for the next 5 years. This averages 12 million litres a year, for which BDL pays 26p per litre.

BDL’s Commercial Director believes it should be possible to purchase an additional 3 million litres a year from farms further afield. However, since BDL’s tanker is currently utilised in full capacity, the extra milk would have to delivered to BDL’s dairies, at a transport cost of about 4p per litre delivered.

Milk, being a natural product, is variable in quality. For the purposes of cheese making, the key quality concern is the butterfat content, since this forms the majority of the curds from which the cheese is made. The average butterfat content of its milk supplies is 4%, but can range from 3% to 5% depending on the weather and other conditions.

In addition to milk, BDL also buys small quantities of Penicillium roqueforti, rennet, and other materials**.**

# Operations

BDL’s dairies are at Upper Basset and Lower Basset (Upper and Lower for short). Each dairy operates 7 days a week for 52 weeks a year, as there is little capacity to store the raw milk. Upper only produces Blue and White because it does not have the blending vats to produce Red. Instead, Lower produces all three cheese types.

The split between the types of cheese produced at each dairy is largely determined by the dairy configuration. There is some variation from day to day, but for planning purposes one can assume that the splits are:

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| --- | --- | --- | --- |
|  | Blue | White | Red |
| Upper 450 | 55% 247.5 | 45% 202.5 | - |
| Lower 750 | 25% 187.5 | 15% 112.5 | 60% 450 |

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| --- | --- | --- | --- |
|  | Blue | White | Red |
| Upper 8.65/0.8 = | 55% 4.76 | 45% 4.03 | - |
| Lower 14.42 | 25% 3.61 | 15% 2.16 | 60% 8.65 |

Finally, Upper can potentially process 6 million litres per year, whereas Lower can potentially process 9 million litres per year. At present, both plants are operating at about 80% capacity.

# Finance

For accounting and pricing purposes, BDL’s Finance Department splits the costs of each plant as follows:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Blue | White | Red |
| Upper | 60% | 40% | - |
| Lower | 30% | 25% | 45% |

However, the basis for these figures is not clear, and the CEO would like to have assessed whether this is a realistic allocation for pricing purposes. To this end, she has had more details collected about weekly throughputs, milk quality, costs and so on. This information is summarised in the attached spreadsheet.

# Task

The University of Leicester has appointed you as consultants and invites you to analyse BDL’s operations in light of the information above and the spreadsheet attached. The CEO has requested to be informed on the analysis’ results and recommendations for change in a 10 minute presentation. She has also requested a 5-page report for BDL’s technical staff, as well as a journal that documents the work performed by the consultants.

Since BDL is a very important industrial partner, the University of Leicester urges you to provide sufficient and convincing justifications for the analysis, your recommendations for change, and the resulting benefits for BDL.

How they operate

Best way