Final article:

Pattisson, N. and Lindgreen, A. (2004), "Successes and failures in the dairy industry: South West England and North West France", *British Food Journal*, Vol. 106, No. 6, pp. 422-435. (ISSN 0007-070X)

For full article, please contact LindgreenA@cardiff.ac.uk

Successes and Failures in the Dairy Industry:

South West England and North West France

Naomi Pattisson[1]

Harper Adams University College, the UK

Adam Lindgreen[2,3]

Eindhoven University of Technology, the Netherlands

Harper Adams University College, the UK

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[1] Naomi Pattisson: Telephone: + 44 – (0) 1243 375 263. E-mail: naopattisson2@hotmail.com.

[2] Address for all correspondence: Adam Lindgreen, Department of Marketing, Faculty of Technology Management, TEMA 7, Eindhoven University of Technology, Den Dolech 2, P.O. Box 513, 5600 MB Eindhoven, the Netherlands. Telephone: + 31 – (0) 40 247 3700. Fax: + 31 – (0) 40 246 5949. E-mail: a.lindgreen@tm.tue.nl. The author is a visiting reader with Harper Adams University College.

[3] Both authors contributed equally. They would like to thank the Royal Bath and West of England Society for its financial support towards this research. They give thanks to the dairy companies and dairy association interviewees in both France and the UK. In particular, the authors wish to thank the following people: Michael Bessey, Stephen Bradley, Barry Hawkins, Patti Hinsull, Jean-Baptiste Philippot, and Philippe Ruffio for their time and advice. Thanks also to the editor and the anonymous reviewers who provided guidance on a previous version of the article.

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Abstract

The UK milk industry has been in a state of rapid evolution following the dissolution in 1994 of the Milk Marketing Boards. We examine dairy processing companies, milk collection co-operatives and milk groups in the south west of England to assemble reasons for success and failures and compare them with north west France, with similar traditional dairying. Our findings suggest the following opportunities as the best development potential for the dairy industry in South West England: mature Cheddar, specialty cheeses, suitable territorial cheese varieties and other fresh cheeses; dairy desserts; and yoghurts, fromage frais and crème fraiche. A second tier of opportunities could take place through new on-farm processing; expansion of the product range of existing companies; expansion of the Davidstow Creamery as a producer of mature Cheddar; and new 'green field' site developments by new entrants.

Key words: dairy industry, successes, failures, South West England, North West France.

Introduction

With the 1994 dissolution of the Milk Marketing Boards, the milk industry in the UK has been in a state of rapid evolution (Bessey and Wilson, 1999; Fearne and Bates, 2000; Monopolies and Mergers Commission, 1999; Wilson *et al*., 1999). The consequent formation of dairy farmers' co-operatives for milk collection purposes only; farmers' marketing groups; and mergers, acquisitions, plant closures and bankruptcies (both publicly and privately owned dairy companies) has meant that supply and demand have moved towards equilibrium. This has caused significant losses of jobs, as processors become exposed to competitive forces from at home and abroad. New processor company entrants have arrived to the UK from Ireland and Denmark. The French processors have preferred to increase their exports to the UK, and New Zealand dairy products have continued to set good standards at attractive prices. Also, the supermarkets in the UK and France are continuing to consolidate and intensify their competition. The UK supermarkets have been able to do this because the milk market has been oversupplied and because world commodity prices for butter, cheese and skimmed milk powder have remained low due to oversupply. It is against this background that dairy processing companies in the South West England are examined, and compared with the North West France, with similar traditional dairying, in an attempt to identify reasons for success and failures.

Organisation of the article

The structure of the dairy industry in the UK and France is considered prior to discussing with references to the international concepts of 'success' and 'failure'. Moving on, the methodology is described only briefly, as most readers will be familiar with the case study method. The findings are structured around country conditions and company conditions. Actions are outlined that will determine whether a company experiences success or failure. The dairy industry's strengths, weaknesses, opportunities and threats in the South West England are considered, and market development opportunities are identified. Lastly, limiations to the study discussed and directions for future research are outlined.

The Dairy Industry in the South West England and North West France

The milk industry in the UK is in a state of rapid evolution. For example, the number of dairy farmers in the South West England has decreased by more than 30 per cent over the seven-year period 1993-2000 (Table 1). Whilst some areas in England (e.g., the South West England) have experienced net increases in milk quota of more than ten per cent, other areas (e.g., Devon) have seen net decreases of up to 10 per cent. Quota has even decreased by more than 10 per cent in smaller areas such as at the foot of Cornwall and in north and south coastal areas of Devon.

Table 1. Reduction in UK-registered milk producers by county

	1993	1994	2000	$\Delta_{1993\text{-}2000}$ [%]
Dorset	842	819	726	14
Somerset	1,648	1,611	1,088	34
Devon	2,460	2,407	1,800	27
Cornwall	1,501	1,460	1,400	33

Sources: The Dairy Council (1994, 2000); DTZ Pieda Consulting (2000); MAFF (2000).

1,400 dairy farms in the South West England produce a total of 490 million litres of milk annually of which around 345 million litres is processed by 19 local dairy processors. With

300 million litres, Dairy Crest at Davidstow dominates the dairy-processing sector, whilst a large number of smaller processors produce specialty cheeses, creams and ice creams. The industry provides direct employment for 3,500 local people, and supports a further 5,600 jobs in the area and throughout the UK. The value of milk sales at the farm gate is £ 78 million, while the value of sales from dairy processors is £ 132 million.

The structure of the dairy industry in France is much different from that of the UK (Broussole *et al*., 1994; Centre national interprofessionnel de l'économie laitière, 2000; Guillouzo *et al*., 2000; Mennesson, 2000; Philippot, 1989). The quota in France remains tied to the land or is absorbed into a government-controlled reserve. Following the Second World War, both co-operatives and privately owned dairy companies were instructed by the French government to collect all milk within their area; to make a basic range of butter, cheese and liquid milk to local inhabitants; to assist in alleviating shortages; and to build a stronger local industry. By the 1960s, the government relaxed its control, and dairy companies could react accordingly or remain locally based. With quotas introduced in 1984, some processors found themselves short of milk, hence over-capacity in manufacturing plants and financial trouble. As supermarkets' buying power increased, prices dropped because as competition to supply the retail groups strengthened. Also, as intervention prices dropped and quality standards rose, some co-operatives' profits were curtailed so that they disappeared, merged or sought private company management.

The French dairy processing industry also differs substantially from its UK counterpart (Broussole *et al*., 1994; Centre national interprofessionnel de l'économie laitière, 2000; Guillouzo *et al*., 2000; Mennesson, 2000; Philippot, 1989). There is less emphasis on the liquid milk market and more on manufacturing specialist cheese; there is a larger number of small dairy enterprises; and farmer co-operatives play a major part in the national processing effort. The decrease in the number of French dairy farmers has been up to 23 per cent for the 1993-1998 period (Table 2). French co-operatives collect 11 billion litres of milk annually from mainly smaller farms, which constitute half of all French farmers. This corresponds to some 50 per cent of the national total milk production. In contrast to privately owned dairy companies, many dairy co-operatives suffer from lower levels of profitability, self-financing and advertising and marketing expenditure, as well as higher milk collection costs. France has good dairy institutional support from trade associations and representative bodies, but relations between farmers and processors with the retail sector have been worse than in the UK.

Table 2. Reduction in French registered milk producers by region

	1993	1998	$\Delta_{1993\text{-}1998}$ [%]
Brittany	29,755	23,570	21
Basse Normande	18,394	14,188	23
Haute Normande	5,521	4,388	21
Pays de la Loire	20,549	16,528	20

Sources: Centre national interprofessionnel de l'économie laitière (2000).

Methodology

We chose to examine several dairy processing companies in South West England in an attempt to assemble reasons for a dairy company's success and failure, and to compare the said reasons with North West France, with similar traditional dairying. We decided to use a qualitative multiple case study design because it was not possible to distinguish the phenomena under investigation from the context in which they were being studied (Yin, 1994).

The selection of companies was by personal recommendation from people people with knowledge of the industry and from financial data available in Bessey and Wilson (1999). Each company manager was interviewed using a structured questionnaire to elicit information to answer various criteria listed in references as giving indications of company success. An overview of the data requested at the interviews has been given in Appendix A. Confidentiality of some data was promised, where owners of smaller companies in particular felt that competitors might benefit from publication of certain facts. In other cases some companies were reticent in revealing financial data, either because they had not got it to hand or preferred not to. For a list of the dairy companies and organisations visited for personal interviews, please refer to Table 3.

Table 3. Dairy companies and organisations visited for personal interviews

UK	France
Large companies (more than £ 100 million in turnover): - Unigate at Chard, Somerset - Dairy Crest at Davidstow, Cornwall Medium-sized companies (£ 10 - 100 million in turnover): - Yeo Valley Group at Blagdon, Somerset - Wyke Farms at Bruton, Somerset - Alvis Bros at Redhill, Bristol Small companies (less than £ 10 million in turnover): - Rodda's Creamery at Redruth, Cornwall - Quicke, J. G. & Partners at Newton St Cyres, Devon Milk collection co-operatives and milk groups: - Peninsula Milk Processors' group at Okehampton, Devon - Milklink co-operative at Plymouth, Devon - Tamar Flow at Camelford, Cornwall	Co-operatives: - Groupe Even at Ploudaniel - Groupe Cana at Ancenis, Pays de la Loire - Laïta at Brest, Bretagne - La Co-opérative Isgny Sainte-Mère at Isgny-sur-Mer, Normandy - Nestlé, at Liseux, Calvados and Nestlé at Marne la Vallée Small privately owned dairy company: - E. Graindorge: Fromagerie at Saint Désir, Lisieux

The findings are discussed using the international concepts of 'success' and 'failure' and structured around country conditions and company conditions. As illustrated in Figure 1, country conditions, alone and together, can have an influence on a company's ability to compete in specific industries and market segments (Porter, 1990). Company conditions include the market, acocunting practice and quality control (Grunert *et al*., 1997; Penrose, 1995; Porter, 1990).

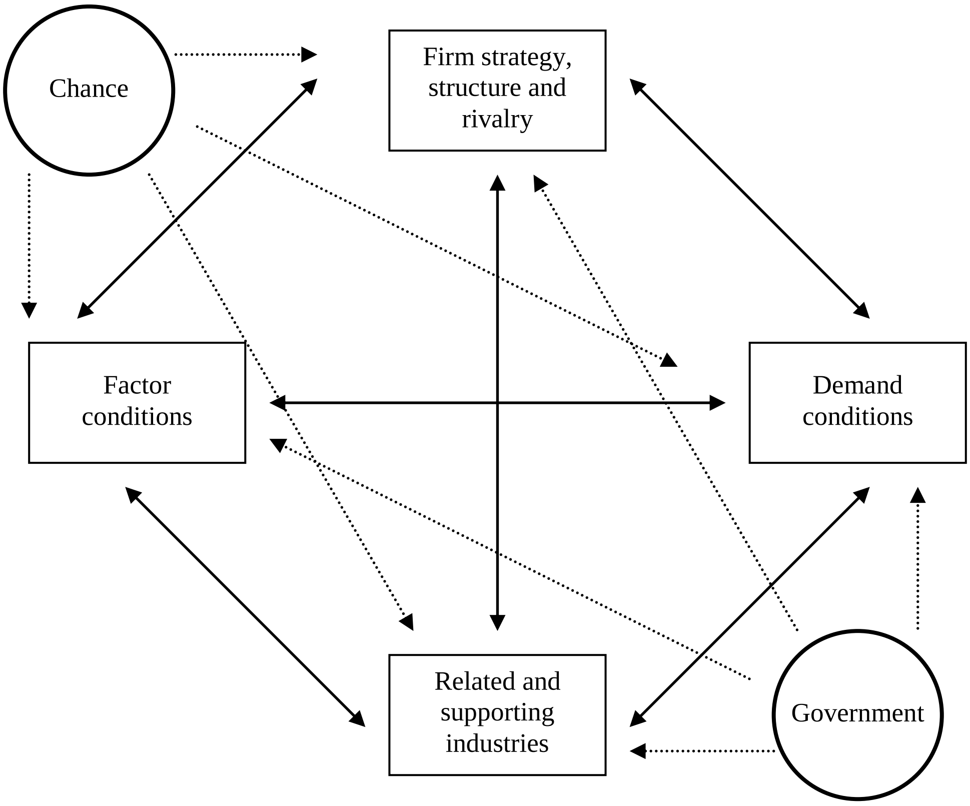

Figure 1. The diamond

Source: Porter, M. E. (1990), *The Competitive Advantage of Nations*, Macmillan Press, London.

The analysis of interview data was carried out using well-know methods (Eisenhardt, 1989; Miles and Huberman, 1994). In Appendix A the coding scheme can be seen. The essential characteristic of a case study is that it is discursive, and that readers often find the lengthy description of results exhausting. Because of this, we decided to change from a traditional reporting style with many quotations to one of tables summarising the overall findings (see Dairy Crest in Appendix B). Similar tables for the other companies have been omitted, as the length of report otherwise would have been too excessive. With these tables and the country conditions previously discussed, it was possible to reach the following findings for success of dairy firms.

Discussion of Country Conditions

Factor conditions

- Skilled labour is available in both regions. Companies near Bristol in England and Caen in France mentioned that skilled labour was expensive due to local competition. Low comparative salaries are common in the dairy industry, certainly in England, due to rural locations, and the nature of repetitive factory work, as well as possible association with farm wages and sometimes the predominance of female labour. A company at the extremity of Cornwall commented that, with increasing employment in the area around Redruth, higher wages were now necessary to attract and retain staff. The regions of Cornwall, Devon and Dorset (in England) and Brittany (in France) are supported strongly by tourism in holiday seasons. Moreover, South West England is heavily favoured for retirement and desertion by young people of working age.

- Infrastructure (roads, rail service) is currently superior in North West France. The UK rail service has been extremely unreliable over the last years, particularly to Cornwall. Good trunk roads are sparser in the south west region of England compared with the two good motor routes through Brittany and major routes from the ports of Cherbourg and Caen (Ouistreham) down to Paris. This affects the feeling of geographical isolation at the extremities of the regions.

- With regards to natural resources (climate, farm land) rain is usually not a limiting factor, except in Brittany and, from time to time, in Cornwall where soils are shallow so that grass silage must be fed in July and August. Water shortage is more extreme in Pays de la Loire. Daylight length is marginally longer, and earlier, in France resulting in more reliable maize cob ripening for silage. There is rougher moorland (good for grazing) in Cornwall and Devon than in North West France. Soil fertility in parts of Somerset and around the south east of Bristol is as good as that in Normandy.

- Capital is possibly more available in France, at lower interest rates, than in England. However, it has also been noted that there is reluctance on the part of small English businesses to move banks to obtain better prices. They prefer instead to have loans and current accounts from the same bank.

- Fuel is more expensive in the UK due to the taxes applied. However, the March 2001 budget made some minor concessions to prices of certain types of fuel and levels of road tax.

- With regards to knowledge resources, in the Pays de la Loire (around Angers) and in other locations in North West France there are concentrations of food industry companies making biscuits, wine, charcuterie, specialist cheeses and other high added value regional food products. Hence the level of knowledge of specialist food processing is locally high in France. Knowledge of food exporting is widely found in France.

Firm strategy, structure and rivalry conditions

- The general point is that for several of the French production-orientated dairy co-operatives their structure is very complicated and tangled, which inhibits rapid change to adapt to new circumstances. English dairy co-operatives and marketing groups are currently in a state of flux, being enmeshed in a continuing process of evolution from the cessation of Milk Marque's operation in 2000.

- Domestic competition for dairy processors is probably equally tough in both countries, with so few large and powerful supermarkets calling the shots in the retail markets. The manager of the processing factory of Nestlé in France admitted that it was easier and more comfortable to deal with UK supermarkets that with French, as the former paid slightly better and were more loyal to their suppliers.

Demand conditions

- The French consume more cheese and yoghurt per person than the British who in turn consume more liquid milk. However, catering and restauration consumption data mask some of these individual household consumption data, which are collected in different ways in each country. The trends over the past five years are a useful market indicator, rather than the accuracy of the volume consumed. Also, not all the dairy products consumed, apart from liquid milk, could have been imported. In the UK, liquid milk, cream, condensed milk, butter and margarine consumption have decreased over the last ten years. In France, consumption of liquid milk and butter has decreased, whilst cheese is slowly increasing, and fresh dairy desserts rapidly increasingly. Please refer to Table 4.

Table 4. Annual consumption of dairy products, kilograms per person

	UK				France			
	1990	1997	1998	1999	1989	1997	1998	1999
Liquid milk	125.3	119.7	118.5	118.2	80.4	75.5	75.5	74.1
Cream	3.8	3.2	2.9	3.2	2.99	3.8	3.9	4.1
Butter	3.6	3.0	2.9	3.2	8.5	8.3	8.3	8.3
Cheese	8.2	9.5	9.7	9.7	22.3	23.4	23.6	23.7
Yoghurts and other fermented milk	-	6.7	6.6	6.8	15.9	19.1	19.6	20.2
Dairy desserts	-	1.2	1.4	1.6	5.91	6.9	7.3	0.55

Source: Centre national interprofessionnel de l'économie laitière (2000) and Dairy Council (2000).

Related and supporting industries conditions

- The direct suppliers to dairy processing companies are farmers supplying the milk and suppliers of added ingredients such as fresh fruit, packaging materials and transport.

- The most obvious differences between English and French is the unsettled state of English farmers after a period of low milk prices and associated economic difficulties, their higher average age (58 years in the UK, 46 years in France) and their larger farm size. The recent antagonistic attitude between UK farmers, processors and supermarkets has made for unstable milk prices, which gives an unstable and fluctuating environment in which processors only with difficulty can plan their supply and costs of raw material. It also may inhibit rapid expansion of small and medium-sized companies, whilst mergers and acquisitions speed up general industry consolidation. In France, acquisitions, mergers and bankruptcies in milk collection and processing have been occurring earlier and longer (Philippot, 1989). Therefore the situation in France is further forward on the basis on integration of milk supplies and stability between suppliers and dairy processors.

- Supplies of fresh fruit (for yoghurts and desserts), 'starters' for making cheeses, edible enzymes and other biological additives such as stabilizers or vitamins are probably available to both national industries on an equal basis.

- Packaging and labelling costs and materials may differ according to each country's adherence to usage of recyclable materials. However, neither French nor UK authorities oblige dairy processors to use recyclable packaging materials, unlike German authorities.

Government conditions

- The UK government has made two significant moves, which have affected the national dairy industry, namely (1) the dissolution of the statutory Milk Marketing Boards in November 1994 and (2) the application of the recommendations of the Monopolies and Mergers Commission report in July 1999, which resulted in the cessation of the national dairy farmer co-operative Milk Marque in spring 2000 and its three regional divisions.

- The French government has made several moves to regulate relationships between food processors and supermarkets. In some cases this has led to circumnavigation of the legal restrictions so that supermarkets buy milk, other raw materials and packaging direct and contract processors to make own brand dairy products for them thus only buying a service from the processor. The French government has also shortened the maximum working day (35 hours) such that employers are obliged to take on more staff and absorb the costs themselves; the UK may have an advantage here.

- France has higher main corporate tax rates (36.7 per cent) compared to the UK (30 per cent). However, the UK government taxes individuals at a higher income tax rate of 40 per cent than the French government (32.5 per cent). The corporate tax rate would disadvantage France from the point of view of potential inward investors and favour the UK. The personal income tax would favour French employers and managers by comparison, but French council taxes on their homes have been traditionally higher than those in the UK. Overall taxes in France represent 49.3 per cent of GDP compared to 40.9 per cent in the UK giving France the advantage of a superior infrastructure, better education and other publicly funded sector performance. On the other hand, French bureaucracy and red tape is generally more confining and inhibiting than that in the UK, which leans more to a 'free enterprise' culture.

Chance conditions

- Matters such as technological breakthroughs and innovations made in the dairy industries of each country are referred to in individual case studies.

- The external political development of the EU affects both France and the UK, but depends on how each government embraces new directives. For example, there is both a central EU Food Standards Agency, newly formed, and an older French organisation designed for a similar purpose, whilst the UK version has only recently begun operating. Another case is that national reactions to *Listeria* in cheese differ, the French population being more accepting than the British of cheese made from unpasteurised milk.

Discussion of Company Conditions

Market

- If a smaller company enters an added value market where it can make an impression, particularly if demand exceeds supply, then success is possible. Examples include Alvis Brothers' recent manufacture of organic cheese, Yeo Valley's production of organic yoghurt and Quicke's use of traditional recipes in making high quality Cheddar cheese.

- An old established firm can build and maintain a reputation in what was originally a niche or even just a local market, e.g. Rodda's Cornish clotted cream. Moreover, service to the retailer must attend the production of a new product if success is to be assured. This is what Yeo Valley did with its investment in up-to-date IT, regional depots to store product on its way to supermarkets and attention to detail. Advertising should remain in balance with supplies, but no company in this sector has apparently erred on the side of too much publicity.

- Growing markets exist in the UK, for example sheep and goat's milk cheese. Increasing imports from France (such as French feta and Roquefort cheeses) of several hundred tonnes per year and from Greece (such as Greek feta) offer an opportunity for substitution by South West English producers if they can match the price. Like-for-like growth in UK supermarkets in sales of these cheeses has recently been 22 per cent year on year.

Accounting

- There are evidence that the successful companies pay attention to profit in relation to sales and do not chase sales at any price. Several of the smaller cheese manufacturers have learned this (Wyke Farms, Alvis Brothers and Quicke), but perhaps this was due to prevailing trends in the industry at that time or the learning by farmers of the importance in the food trade of profit and expansion.

- Farmers still owning land have the advantage of knowing that they can cover their borrowings. The cost of raw materials will always be an important factor. The rising cost of milk threatened in the UK will not help hard-pressed expanding cheese companies who may not recoup the increases through retailers. All companies should take advantage of the EU Structural Funds expressed nationally as the England Rural Development Plan 2000-2006. The Cornish companies Dairy Crest, Milklink and Rodda were aware of this and have plans to apply for the funds.

Quality control

- The UK public is aware of animal-borne diseases that can affect humans (*Salmonella*, *Listeria* and BSE) and will not take kindly to any carelessness whether it is organic food or traditional farm food preparation. Conventional food processing is monitored carefully according to the Food Act 1999, and such standards will apply elsewhere.

- In North West France the companies interviewed sold into a market, which is at a more advanced stage of its evolution. Reasons for success, however, were similar in some respects and included the following ones.

Market

- Where high added value products were made efficiently and sold into reputable markets (e.g., UCL Isigny, Graindorge and Nestlé desserts), success is attainable and can be retained with the appropriate effort and attention to detail. France is around 115 per cent self sufficient in milk; hence export markets for dairy products have been explored since the 1960s and considerable skills acquired in this field. There is a tradition of the French being interested in new cheeses and desserts, with less concern over price. However, the competition is severe for this prized market and co-operatives, which succeed in this field, do not wish for distraction from unhappy or disruptive farmer members. Where the co-operatives are production led (e.g., La Cana, Groupe Even and Laïta), then making commodities is inevitable, with a lower return per litre of milk used.

Accounting and structure of company

- These two are linked in the complicated network of alliances and structures, which exist in many of the large agrifood co-operatives in North West France. If such co-operatives are too heavily staffed administratively, as they merge, with too many processing plants, then they will eventually not be able to pay the farmer members the going milk price for the region, and the latter will defect. As competition for market share increases, with the burgeoning power of the French supermarkets, commodity cheese and butter prices will be driven further down.

Those smaller co-operatives in niche markets should survive and prosper. Time will tell for the others.

Conclusions, Limitations and Future Research

Conclusions

The article has provided insights into whether UK farm-based cheese processors have sufficiently concentrated on the food processing business to grow it competitively, or whether the old ones divide their attention between the enterprises. Whilst farming may supply the raw materials and the collateral for borrowing loans it will surely not grow as fast as a well-structured organic cheese processing plant, as evidenced by the growth of Yeo Valley's yoghurt business growing to over £ 100 million turnover, which the farm enterprise never will. Also, the cost of disposing of whey seems a continuing question to be examined. With volatile pig prices, perhaps feeding it to produce weaners and fatteners will not always be the best option. If technological advances could reduce the cost and scale of whey drying this could offer another alternative.

The article has also contributed with insights into French case studies. The failures in dairy company performance over the last 10 years are a simply side effect of the process of industry evolution under the increasing pressures of supermarket buying power and the exit of dairy farmers from the industry. The factor of quotas is less important now, although it was more serious in France in the 1980s, as 14-17 per cent reduction in the overall quota starved out certain processors of raw materials. Lastly, if dairy companies neglect to watch product innovation, added value products, good accounting, quality control, entrepreneurial spirit and managing risk, then they will also have difficulty in surviving.

With regard to managerial implicaitons, Table 5 summaries the strengths, weaknesses, opportunities and threats of the dairy sector in South West England.

Table 5. SWOT analysis of the dairy sector in South West England

<u>Strengths</u> • High-quality milk supply • Davidstow • Higher and further education • Cornish identity and brand image	<u>Weaknesses</u> • Variable farm assurance standards • Weak marketing of locally made products • Limited product range and processing base • Lack of entrepreneurial spirit • Peripherality • Fragmented and weak economic development support infrastructure
<u>Opportunities</u> • Funding • Market opportunities • New product development • Supply chain development • Tourism linkages	<u>Threats</u> • Agenda 2000, CAP and quota • Falling milk prices • High Sterling exchange rate • Intense competition

The following opportunities arguably offer the best development potential for the dairy industry in South West England:

- Mature Cheddar, specialty cheeses, suitable territorial cheese varieties and other fresh cheeses;
- Dairy desserts; and
- Yoghurts, fromage frais and crème fraiche.

The liquid milk market, ice cream and organic products provide a secondary tier of opportunity. Pursuit of these opportunities could take place through the following four routes:

- Through new on-farm processing;

- By expanding the product range of existing companies;
- By expanding the Davidstow Creamery as a producer of mature Cheddar; and
- Through new 'green field' site developments by new entrants.

It is also interesting to notice that a survey of the major customers of Cornish dairy businesses revealed the following:

- Cornish dairy products are very popular with customers, with the traditional and rural image of the area acting as an important promotional factor;
- There is potential to sell more dairy products from the area;
- Distribution is not perceived to be a problem from the customer's point of view; and
- The only real weaknesses in the sector are poor product marketing and the rather limited range of products on offer.

Lastly, the funding system should be mentioned. In broad terms, funding is available for the following activities:

- New product research and development;
- New and improved methods of processing;
- Marketing;
- Capital projects; and
- Business development advice.

At this stage, although there has been much support for the dairy industry, access to the fund presents a significant challenge, as applicants will have to meet certain eligibility criteria. The dairy industry should seek the support of the Farm Business Advisory Service and the Agriculture Development Scheme, whilst processors should consult Taste of the West, the

Institute for Grocery Distribution's Food Project, the Small Business Service and the further and higher education sector. In order to support the structure of the dairy industry throughout the region it is important to understand what the organisations are that offer relevant support services and research projects to the benefit of the dairy industry, as well as to integrate these organisations into the delivery mechanism, where relevant, and disseminate this information to potential beneficiaries.

Limitations

The companies have been used as representatives of their size category upon which the final conclusions have been drawn. Limitations of the size of the sample and choice of interviewees must necessarily restrict the scope of the final conclusions. Also, the interruption to UK farming and the export of dairy products due to the outbreak of foot-and-mouth disease (February 2001 onwards) has been ignored, as the final effects only now are starting to be known. Lastly, two large UK companies interviewed included the Unigate Dairy and Cheese division at their factory in Chard, Somerset and the Dairy Crest division at Davidstow, Cornwall. The fact that these companies were being merged (at the time of the research) might have influenced both managers' responses, as it was known that there would be several factory closures in the coming rationalisation.

Future research

The production-orientated co-operatives with their diverse interests in supplying animal feed, seed, equipment and frozen food, as well as in processing meat and milk, have a traditional place in the French rural economy, which itself is important to the French urban population and to the national GDP. The question then is at what stage the French government might intervene to preserve these organisations, or whether they will be left to struggle, continue to merge, form even further alliances and sink under the weight of the additional administration. As farmers earn less, the number of farmers decreases, the value of shareholdings in the co-op decreases and the processing plans age, will the co-ops be obliged to raise capital on the Stock Exchange and become beholden to institutional investors? This would follow the examples of Dutch and Danish co-operatives (Campina Melkunie and Arla Foods), but would require a radical change in French social and political co-operative traditions.

References

Bessey, M. and Wilson, B. (1999), *UK Milk Report 1999-2000*, Eden Publishing, Norfolk.

Broussole, C., Brulè, G., Gouin, S., Lèon, Y., Philippot, J. B., Roger, L., Ruffio, P., and Sauvèe, L. (1994), *L'industrie laitière de l'ouest de la France*, Chambre Regionale d'Agriculture de Brètagne, Rennes.

Centre national interprofessionnel de l'économie laitière (2000), *L'economie laitière en chiffres*, Paris.

Dairy Council (1994), *Dairy Facts and Figures*, London.

Dairy Council (2000), *Dairy Facts and Figures*, London.

DTZ Pieda Consulting (2000), *Cornwall Dairy Sector: Strategy and Action Plan*, Edinburgh.

Eisenhardt, K. M. (1989), "Building theories from case study research", *Academy of Management Review*, Vol. 14, No. 4, pp. 532-550.

Fearne, A. and Bates, S. (2000), *Co-operative Milk Marketing Report*, Milk Development Council, Cirencester.

Grunert, K., Harmsen, H., Meulenberg, M., Kuiper, E., Ottowitz, T., Declerck, F., Traill, B. and Göransson, G. (1997), "A framework for analysing innovation in the food sector". In Traill, B. and Grunert, K. (Eds.), *Product and Process Innovation in the Food Industry*, Blackie Academic & Professional, London.

Guillouzo, R., Perrot, P., and Ruffio, P. (2000), *La croissance contractuelle des co-opératives agro-alimentaires bretonnes sur la période 1987-1997*, Service Economie – Chambre d'Agriculture de Bretagne, Rennes.

MAFF (2000), *England Rural Development Plan 2000-2006: South West Region*, London.

Mennesson, G. (2000), *Characteristics of the French Dairy Industry and Market with a View on the Co-operatives*, unpublished MSc thesis, Imperial College at Wye.

Miles, B. and Huberman, A. M. (1994), *Qualitative Data Analysis: An Expanded Sourcebook*, 2nd ed., Sage Publications, Thousand Oaks, California.

Monopolies and Mergers Commission (1999), *Supplier of Raw Milk: A Report on the Supply in Great Britain of Raw Cow's 'Milk'*, London.

Penrose, E. (1995), *The Theory of the Growth of the Firm*, 3rd edition, Oxford University Press, Oxford.

Philippot, J. B. (1989), *Strategies des entreprises laitières et quotas – le cas de l'Ouest de la France*, Angers, France.

Porter, M. E. (1990), *The Competitive Advantage of Nations*, Macmillan Press, London.

Wilson, B., Bessey, M., and Bradley, S. (1999), *Dairy Industry Newsletter: UK Milk Report 1999/2000*, Eden Publishing, Cambridge.

Appendix A. Interview guide.

Topic	Issues
History of company	• Year of establishment • Founding companies (organisations) • Significant developments in the history of the company
Directors	• Number of directors on the Board • Skills of the directors
Financial data	• Turnover / sales over the past ten years[a]
Production	• Raw material supply and sourcing • Product range offered at home and abroad
Market	• Breath of range of customers • Growth in this range over the past ten years
Staffing	• Growth in staff numbers • Skills of the staff • Availability of staff locally • Management staff • Source of new staff, internal or external
Motivation	• Motivation of directors and company owners towards survival, growth and expansion
Research and innovation	• Source of product and technical research information • Percentage of turnover committed to research and innovation
Innovation in processing or product	• Economies of scale • Any other factor thought to contribute to company success
Funding assistance	• Use of available MAFF, EU or other food processing or regional grants
Politics	• Membership and attitude to relevant trade associations

[a] This period was chosen to cover growth or performance under the Milk Marketing Boards, reaction to deregulation and performance through the following turbulent period 1995-1999.

Appendix B. Summary of findings for English companies

Company	Topic	Findings
Dairy Crest	History of company	Since 1990, when branded 'Cathedral City' mature Cheddar represented less than 10 per cent of total Davidstow production of 20,000 – 22,000 tonnes per annum, Dairy Crest took a major commercial step prior to the cessation of the Milk Marketing Boards and geared up to increase overall production of cheese from Davidstow and to increase the higher value added element
	Financial data	To continue its success, future capital investment will be needed. It can be fully understood that central cost control was necessary to reduce the loss-making Dairy Crest arm of the Milk Marketing Boards to a profit-making commercial company since 1994, excising around 10,000 staff and selling off or closing surplus capacity.
		The operating profit for Unigate is higher due to the larger share of its products being of added value status than those, mainly commodity products, of Dairy Crest.
	Production	The Davidstow site is spread over 50 acres and operates at the top limit of its capacity, needing further investment if not complete replacement.
		Just under 50,000 tonnes of cheese, whey butter and whey powder is made per annum.
		300 million litres per annum of milk from Devon and Cornwall is utilised at Davidstow, 67 per cent of which is by direct contract from farm and the rest from Milklink co-operative and Peninsula Milk group. A recent problem is the decrease in fat and protein content of the milk, the lowest in three years, which lowers yield of cheese per unit volume of milk.
	Market	The cheese factory at Davidstow makes more than 30,000 tonnes of cheese of which more than 75 per cent is mature Cheddar (to achieve higher value). Of this, 40 per cent is branded 'Cathedral City', and 60 per cent is mature supermarket own brand or 'Davidstow' labelled in supermarkets or sold as a leading brand on delicatessen counters in food retailers such as Marks and Spencers, Sainsbury and Safeway.
	Staffing	As part of the corporate Dairy Crest company, and one of several cheese factories, Davidstow abides by company staffing rules and pay agreements. Staff numbers have been reduced to 145, and older senior management in key positions of technical and engineering may soon retire.
	Motivation	A change in the all-pervasive central, control-style of management may perhaps be necessary. New replacement and younger seinor management on site will not stay long if not allowed the flexibility to experiment with process innovation and new product development. Management styles in the Unigate Dairy division have been very different and now the companies are engaged in a merger, which could lead to some serious clashes and loss of potentially able and useful staff.
	Research and innovation Innovation in processing or product	There is no innovation department, or encouragement for innovation, and Dairy Crest does not look to universities of food research establishments for ideas. The company is cost driven and thus success has been achieved by increasingly overall production, changing the product mix to increase the higher added value product share, sweating the assets to the limit and controlling costs assiduously.