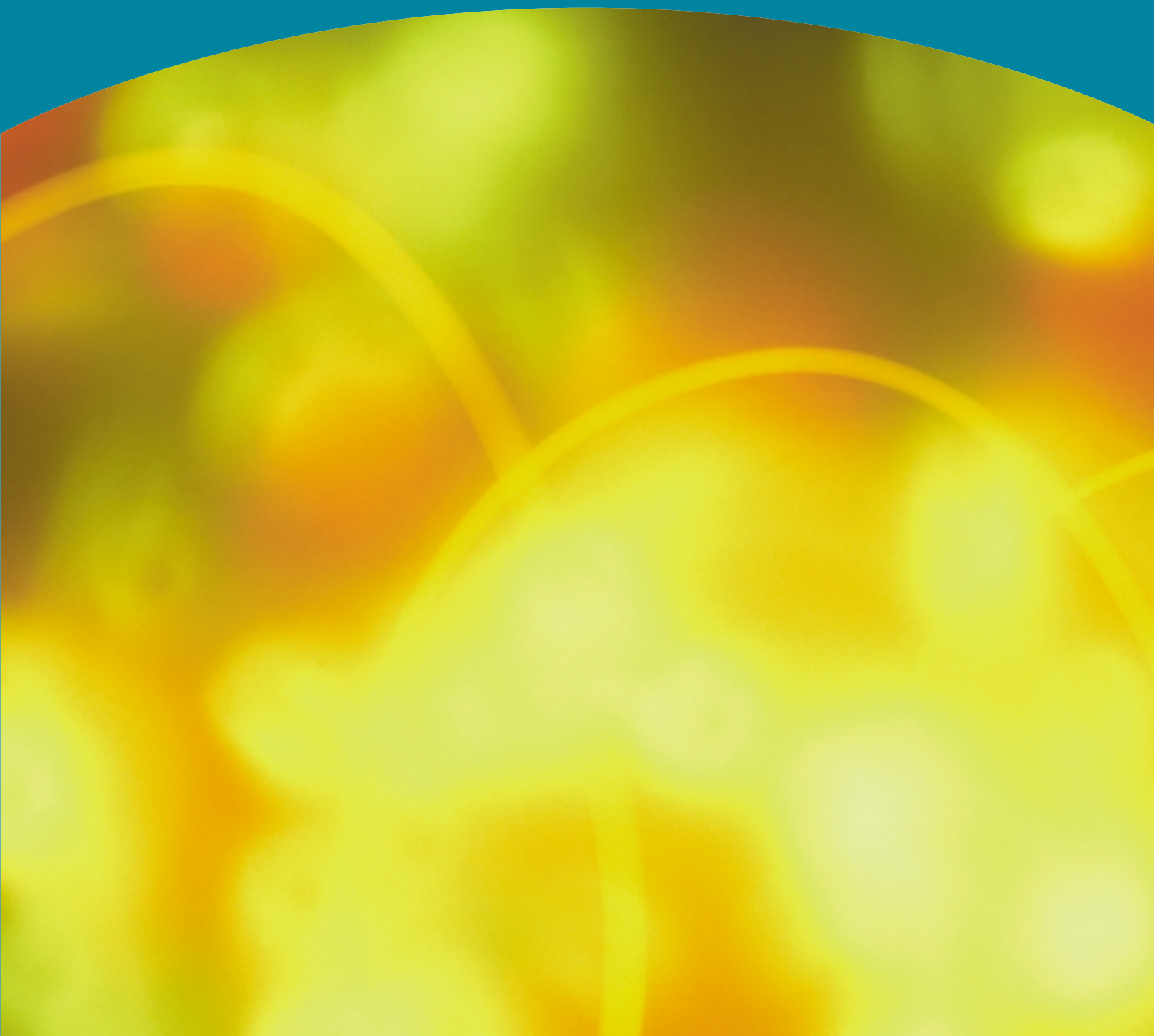# Employers Skill Survey:
Case Study
Food Manufacturing Sector

EMPLOYERS SKILL SURVEY

Case Study - Food Manufacturing Sector

Sally Dench
Jim Hillage
Peter Reilly
Jenny Kodz

The Institute for Employment Studies
Mantell Building
Falmer
Brighton BN1 9RF
UK

Tel: + 44 (0) 1273 686751
Fax: + 44 (0) 1273 690430

http://www.employment-studies.co.uk

September 2000

FOREWORD

The Secretary of State for Education and Employment established the Skills Task Force to assist him in developing a National Skills Agenda. An important part of this remit was to provide evidence on the nature, extent and pattern of skill needs and shortages and their likely future development. The research evidence assembled by the Task Force was summarised in *"Skills for all: Research Report from the National Skills Task Force"*, **published in June 2000.**

An important contribution to the evidence was made by a major programme of new research. This included two employer surveys, detailed case studies in seven different industries and a review of existing surveys. We are grateful to all those who participated in this research and so contributed to the work of the task force. This report provides more detailed information on one element of this research. Details of associated reports are listed in the rear of this publication.

It should be noted that the views expressed, and any recommendations made, within this report are those of the individual authors only. Publication does not necessarily mean that either the Skills Task Force or DfEE endorse the views expressed.

Contents

ACKNOWLEDGEMENTS

EXECUTIVE SUMMARY

This study was conducted to:

- explore the product market strategies of food manufacturing companies, the implications of these strategies and how these are met

- identify the existence and nature of skill deficiencies, whether related to external recruitment or gaps among the existing workforce, why these have occurred and their impact on organisational performance.

This study of food manufacturing focused on the range of skills involved in production units rather than in head office and centralised functions.

Pressures for change

There are many pressures affecting food manufacturing companies and these pressures can be grouped into a number of categories:

- **Competitive pressures** - These emerge from two main sources:

- the existence of other suppliers operating in the market place

- the changing structure of retailing and, in particular, the growing buying power of supermarkets.

- **Changing patterns of demand** - Different lifestyles and higher standards of living have led to a demand for more convenience and specialist foods. Customers are also more demanding and discerning.

- **A highly regulated sector** - The amount of regulation has increased in recent years, particularly from the EU. Supermarkets and other customers also have their own stringent standards.

- **Internal pressures** - These include:

- new management teams with different approaches and visions of the future

- changing ownership structures: there is a significant amount of merger and acquisition in the sector.

Companies react to these pressures in different ways, and decisions are made about the most appropriate product market strategy to take.

Product market strategies

Three themes to product market strategies were identified:

- *Being cheaper* - controlling costs receives key emphasis.

- *Being better* - this places an emphasis on quality, whether in terms of the ingredients used, consistency of the product or its presentation.

- *Being first* - developing new products or variations of existing lines.

These strategies influence how companies compete in the market. It is, however, the nature of the product which influences the production method adopted, and it is this which has the main implications for the skills needed of employees. This does not mean that product market strategy has no influence on skills, but rather a lesser impact.

Most companies appeared to have sustainable product market strategies. The exceptions were in the mass production of basic commodities where there was over-supply. Strategies are rarely static. Managers were adjusting their product market strategy, usually within an existing market segment; improvements in productivity and quality, keeping costs under control and product innovation were all occurring to keep up or ahead in the market.

Of crucial importance to the whole process are the skills of managers. It is not simply the sustainability of a current strategy which is important, but the ability of managers to adjust and meet new challenges in the longer term.

Production processes and work organisation

Production processes

There are three main forms of production:

- continuous or semi-continuous production
- batch production
- craft and hand-finishing.

The method of production used depended on the product market strategy, in that this strategy usually leads to particular types of product being manufactured. For example, the manufacture of a standard product for which there is mass demand leads to the adoption of continuous production methods. This involves investment in sophisticated machinery which is utilised as fully and efficiently as possible. Many of these products compete on price. However meeting market quality expectations and product innovation are also important.

Batch production is adopted where there are limited production runs of a particular product and where frequent changes in ingredients are needed. The growth in demand for ready-made meals and specialist foods has contributed to an expansion in batch production. A greater number of tasks are conducted manually. However, equipment is used where possible and this is becoming increasingly sophisticated.

Craft and hand-finished production involves relatively little technology. Manual skills and dexterity remain important.

Some companies combine more than one means of production. This is sometimes on the same site, but usually when a range of production strategies are adopted these are pursued through different establishments.

Work organisation

The organisation of work was changing in many of the companies we visited. There was an emphasis on team working and flexibility, and responsibility was being devolved down the management hierarchy. Shift patterns and hours of work were also being adapted to provide a more efficient use of labour. As with the adoption of new technologies, changes in working practices contributed to the achievement of product strategies. Through introducing more effective methods of working, cost efficiency, quality and innovation are all contributed to.

Skill requirements

The skills and attributes needed by employers can be divided into three categories:

- **Personal attributes** - These are related to individual behaviours and personal characteristics. The most important personal attributes were related to having a positive work ethic and an interest in the job. This was an area creating the most problems for employers. It is these attitudes and attributes which play a key role in the ability of employees to improve their skills and take on new ways of working. They often underlie proficiency in the range of generic and vocational skills needed in food manufacturing.

- **Generic skills** - These are required across a wide range of jobs, however they often take on a particular industrial or occupational dimension: the context in which they are applied affects the exact nature of need for these skills. Generic skills include:

- basic literacy and numeracy

- IT and computing skills

- team working

- communication

- taking responsibility

- problem solving

- an interest in training and development

- an ability to cope with change.

- **Vocational skills** - These are skills which are specific to food manufacturing. They are not necessarily exclusive to this sector. For example, food hygiene is also important in the hospitality sector, but they are only needed in a narrow range of activities. These include:

- understanding food hygiene

- health and safety

- understanding quality

- understanding the business

- flexibility

- maintenance skills and multi-skilling

- dexterity and manual skills.

There was considerable consistency in skill needs across different production methods and strategies. However, a few differences can be identified. For example, the need for manual skills is being removed from continuous process operations while remaining important in other forms of production; technical skills and multi-skilling was most obvious in continuous production, although some batch operations were also beginning to provide operatives with basic maintenance skills. There were also some differences in the exact nature of individual skills needed between the various forms of production. For example, team working in batch production involves groups of people working co-operatively to ensure smooth changeover between batches and the efficient progress of products through the process.

Managerial skills are extremely important. The role of team leader has changed in recent years. While good vocational skills are important, promotion to these posts is now rarely on the basis of seniority or sound production skills alone. Team leaders are expected to take responsibility for production, motivate and develop staff and deal with any staffing issues, including discipline and poor performance.

Responsibility has been devolved from more senior managers, to free them to address more strategic and longer term issues. This requires a change in the approach of managers. They have to 'let go' and enable other employees to take responsibility. The skills of managers in identifying, adapting and taking forward appropriate product strategies are crucial to the success of companies.

There was relative stability in the nature of employers' skill needs. However, employers were paying much greater attention to the level and range of skills held by employees. Our evidence suggests an emphasis on ensuring maximum performance at a given level of skill.

Recruitment difficulties

Recruitment difficulties for production jobs were nearly always around inadequate personal attributes and basic skills. In particular, employers were struggling to recruit sufficient people who have a 'work ethic', are 'team players', who are interested in the job and in learning. Basic skills are increasingly important and some employers were recruiting among sections of the population with very poor literacy skills.

A number of factors contribute to recruitment difficulties, including: shift patterns, competition from other employers, competition from schools for young people, the position and reputation of a company locally, pay, the poor image of food manufacturing and the level of unemployment locally.

Skill gaps

In general, the stronger the emphasis on higher quality, greater efficiency and innovation, and among employers actively attempting to improve performance, the more likely it was that skill gaps were evident. The most significant difficulties were in the areas of personal attributes and attitudes. Two key areas of deficiency were identified in that employees were reluctant to take greater responsibility and to accept change.

The demand for technical and maintenance skills were more closely related to the nature of the technology being used, rather than the strategy adopted. Gaps were evident in these skills, in particular in obtaining sufficient people keen or able to become more skilled in these areas. There was some evidence of a lack of ability among existing employees to take on these skills. However, barriers also existed in terms of a reluctance to take on the additional responsibility, hours and training involved.

Deficiencies in the future

Current skill deficiencies are only one part of the picture. In the future various shifts in the sector may lead to a different pattern of deficiency. Three particular trends were identified:

- A continued need to improve skill levels due to on-going pressures to enhance quality and efficiency - the attitudes and basic skills of recruits and existing employees will remain an issue, and their abilities to take on the necessary vocational skills.

- Changes in the balance of production methods towards batch production - this will not shift the overall emphasis on personal attributes and attitudes. However, there may be some changes in the nature of vocational skills needed.

- The development of more sophisticated and computer-controlled technologies are likely to lead to requirements for a more technically able workforce, and increase trends towards multi-skilling.

The impact of difficulties and gaps

Managers rarely reported significant impacts. However, a number of specific examples of negative impact were identified. These included: the inability to expand into new markets quickly, disruptions to the flow of production; production targets not being met; and high levels of wastage.

Statistical information and data collected during the course of our interviews illustrates significant improvements in labour productivity and performance in recent decades. However, skill deficiencies are holding companies back.

There is a link between skills and performance, in that in better performing companies skill levels were higher; greater effort was being put into improving the skills of employees. However, a skilled workforce is only one factor in improving performance. There are a number of companies in our sample in which performance had improved significantly in recent years, and this had been achieved through a number of measures. For example, in addition to addressing the skills of the workforce, new technology had been purchased, new working practices introduced and new management teams brought in or promoted. These new managers had different skills and attitudes to the previous managers. They were more forward looking, and able to manage, motivate and work with other employees. External factors also play a role. The higher performing companies tended to be operating in markets in which there was potential for expansion and innovation. Those locked into declining markets were more likely to be struggling, despite addressing skill levels.

Remedying skill gaps and recruitment difficulties

A wide range of measures had been used to address skill gaps and recruitment difficulties. Training and development, for example, through better induction, addressing basic skills, working with attitudes and behaviours and wider training courses, was only one of these. Other measures included: the identification of skills needed; paying greater attention to recruitment and selection; better communication with and involvement of employees; rewarding those with good skills; and introducing measures associated with being a good employer (for example, holiday and sick pay, pensions, involvement in the local community).

The overall conclusion is that in the future a more able and skilled workforce will be sought by food manufacturers. In particular, employers are looking for people with good basic and generic skills. It is these which enable them to take on the necessary vocational and technical skills. This is partly an issue of education, the preparation of people for work and employer training. A challenge for employers will be to modify current perceptions of the industry, to facilitate recruitment and retention of the people needed.

1. INTRODUCTION

1.1 Aims of the Study

The overall aims of this study were to:

- explore the product market strategies of food manufacturing companies, the implications of these strategies for skill needs and how these are being met

- identify the existence and nature of skill deficiencies, whether related to external recruitment or gaps among the existing workforce, why these have occurred and their impact on organisational performance.

This study of food manufacturing focused on the skills involved in the production process. This does not mean that we just looked at the skills of production operatives, but rather at the range of roles involved in production units. We did not look at head office or central functions. There were a number of reasons for this:

- Production involves the largest number of employees (within the sector and in each company).

- Production activities are most likely to be focused on in attempts to improve efficiency and introduce change.

- It is the area of the business most often identified by our case studies as crucial to future performance and our approach was based on case studies identifying the function most critical to their business strategy.

This does not mean that other activities are unimportant to the success of these businesses. For example, product development and marketing are vitally important in rapidly changing and highly competitive markets. However, these are often head office or centralised functions, and we have very little direct evidence on the availability of skills in these areas.

1.2 Background to the Sector

Some key characteristics of the food manufacturing sector are outlined below:

- The sector makes up nearly two per cent of total employees in employment in Great Britain (Annual Employers Survey, 1996) and nine per cent of manufacturing employment. Between 1993 and 1998 employment in the sector increased by four per cent (from 360,000 to 374,000) (ONS, 1999).

- Around two-thirds of employees are male and 87 per cent of employment is full-time. Almost all male employees work full-time (96 per cent); 70 per cent of women work full-time.

- Using the SOC2000, 45 per cent of employees work in operative and elementary jobs; 15 per cent in skilled trades; 11 per cent are managers; and 12 per cent are in professional and associate professional/technical jobs. The proportion in operative and elementary jobs has declined slightly over the past ten years and trade occupations have remained relatively stable. There has been an increase in the proportion of employment at management, professional and associate professional level.[1]

- According to 1999 Labour Force Survey data, 19 per cent of the workforce have no qualifications. This was particularly at trade, operative and elementary level. Only two per cent of managers are unqualified. The level of qualification among all employees has increased over the last 20 years (O'Mahoney, 1999). In 1979, 85 per cent of all employees had low, 12 per cent intermediate and three per cent high qualifications.2 By 1993, the proportion with low qualifications had fallen to 68 per cent. The proportion at intermediate level had doubled (to 25 per cent), and seven per cent had high qualifications.

- The largest sub-sectors in terms of employment are the production, processing and preserving of meat; bread, fresh pastry goods and cakes; and cocoa, chocolate and sugar confectionery.

- The majority (74 per cent) of food manufacturing establishments have fewer than 20 employees, a further 16 per cent employ under 100. Only two per cent employ 500 or more.

- Gross value added per person in the food, drink and tobacco sector as a whole (of which food is the largest part) rose by 33 per cent between 1993 and 1996, compared to 24 per cent among all manufacturing industry (ONS, 1999). O'Mahoney (1999) also illustrates improved productivity in the sector, and how productivity compares favourably with that in France and Germany.

- The Foresight Panel for food and drink identifies a number of challenges for the future, including biotechnology and genetics; links between diet and health; microbiological, chemical and physical safety of food and drink; sensory perceptions of food quality; psychology of consumer choice (DTI Foresight, 1999). Many of these are reflected in our case study companies, and they will continue to provide challenges, particularly in terms of the business and product market strategies adopted by food manufacturers.

1.3 The Case Study Method

This study used a case study method to explore skill issues in depth. The case study unit was usually the establishment, although in four cases interviews were conducted at more than one location. This focus on the establishment reflects characteristics of the sector. For example, different establishments within a company usually produce different products and operate fairly autonomously. Corporate head offices set targets, such as return on capital, budgets and broad performance parameters in terms of cost and efficiency. Operating units are often in danger of closure or of being sold off if targets are not met. However, head offices are rarely interested in how targets are met. Interviews were conducted with a range of different respondents, typically with HR directors and managers, including those responsible for recruitment and various aspects of training; production and other operational managers; first line managers; and some employees.

We contacted some 60 employers to seek their participation in the study. A large number declined. There were many reasons for employers not wanting to take part in the study. These included:

- being in a period of major reorganisation

- experiencing redundancies

- having no perceived skill deficiencies

- being too busy, in particular given the amount of time required for this study

- having taken part in too many other studies on skill and training issues.

1.4 The Individual Case Study Companies

Our sample included companies:

- *operating with different processes and levels of technology:* for example, large-scale mass production and smaller scale batch production

- *making branded products:* producing 'own label' products for supermarkets and other retailers; and serving specialist and niche markets

- *operating in a range of sub-sectors:* not all sub-sectors in the industry are covered by the sample. However, growing and declining sectors are included. For example, meat and milk are both products experiencing declining demand and over-supply; demand for ready-made meals and snacks - for example, ethnic foods, bakery products and sandwiches - is growing.

- *of different sizes and ownership structures:* all but one were part of a larger organisation. Several had until recently been independent but were sold by their original owners, or taken-over shortly before this study. This again reflects a characteristic of the sector. There is regular change in ownership, with operating units being sold off or purchased as major companies shift their focus or decide that competitive advantage lies in a different combination of activity.

- *located in different parts of the country:* the distribution of our sample reflects something of the diversity of the location of food manufacturing activities, and enables different labour market situations to be taken into consideration in exploring skill deficiencies.

A sample this small cannot be representative. However, by including companies with a range of characteristics we are able to provide a broad overview. In particular, as suggested in Section 1.3, those not interested in skill issues or not seeing these as important were less likely to agree to participate. The sample generally includes companies which are most proactive in thinking about and addressing skill issues. There are some implications of this: in particular, we are missing the most complacent and unaware organisations. This can lead to an over-emphasis on the extent to which managers and other respondents report skill deficiencies, but an under-estimate of unreported deficiencies or the extent to which respondents are aware of deficiencies. It will also lead to an over-emphasis on the extent of change and 'good practice'. Most of the companies in our sample were addressing their skill needs in some way. However, this study probably over-emphasises the extent to which such actions are being taken across the sector. For example, the lack of very small companies in our sample may well have important implications for the assessment of skills deficiencies. Smaller companies are known to provide less training and, on average, be less proactive in addressing skill issues. The study does, however, include companies which were struggling to survive as well as those which were performing well financially.

Table 1.1: Characteristics of participating companies

Region	Number employed in establishment	Single site, UK multi or multi-national	Main product	Recruitment difficulties, including jobs occupations affected	Main reasons for difficulties	Skill gaps	Main reasons for skill gaps
S. East	550 (HO) including 300 in production.	Mini multi-national (UK)	Tea- black tea & herbal infusions.	Production operatives: quantity & calibre - numeracy & literacy a problem retention & absence also	Losing out to supermarkets with more attractive working conditions: very low unemployment locally.	Literacy & numeracy, communication, time Management. Attitudes Absence/commitment	Recruitment difficulties among Production operatives
N. East	260 multi-national	Mini multi-national (UK)	Tea- black Tea & herbal infusions.	None - in fact they have a waiting list.	Completely different labour market - high unemployment. Pay is the same in the SE so very good for NE.	Management skills, team working skills, communication skills. Not literacy & numeracy among recruits.	Staff have been there been there a long changing management philosophy, some resistance.
S. East	100	Single site.	Bakery - supplies airline industry - rolls, pasties, patisserie products.	Production operatives/ bakers- in competition with schools/colleges wanting to keep young people on.	Hours & conditions: they cannot have two consecutive days off.	Supervisory skills, lack of innovative ability, communication & team working skills, attitudes	Recruitment problems: can't get combination of practical skills & leadership skills.
Midlands	c. 1,700	Multi-site in 2 countries (UK owned)	Packed products.	No problems with Production operatives. Some difficulties with IT, accounts, project managers, & sales & marketing.	Location.	Production operatives reluctant to multi-skill.	Resistance to change.
London	800	UK multi-site (mainly London). Division of multi-national.	Sweeteners & starches.	Want to change balance of production & delivery workforce to bring in people with 'right attitudes'.	Location & poor local labour market. Image of industry.	Wider awareness of production processes - aptitude to take on maintenance role.	
East Anglia	1,000	Single site in multi-national.	Frozen food products.			Need greater flexibility between operator & engineering roles	Historical - a new need: attitudes & preparedness of people to take on new tasks.

Region	Size	Company type	Products	Recruitment difficulties	Recruitment issues	Skill gaps/needs	Reasons/causes
N. East	500 full time employees.	Two factories of multi-national.	Frozen food products.	Needed to cast net much wider to recruit Level 3s but recent recruitment exercise successful.	Higher level skills required - mechanical aptitude.	Engineering, managerial skills, no problem with literacy & numeracy.	Process of upskilling, requirement to work full time in L3 role, (most currently part-time). Production operatives' reluctance to take on new engineering skills - more of a reluctance than incapability (but also a lot of success). Some resistance from union to change craft engineering role.
North	2,300	UK multi-site, part of foreign-owned multi-national.	Milk production & dairy products.	HGV drivers. Food technologists.	Attitude to customers. Limited supply.	IT skills	Low computer literacy & fear of IT.
London		Single site (part of UK multi-site co).	Milk production.	Production operatives. Food technologists. Milk roundsmen.	Low pay compared to alternative employers & unsocial working hours. Supply.	Need for more underpinning knowledge; hygiene & health & safety; attitudinal/behavioural.	High labour turnover; alternatives in local labour market; type of people they recruit.
N. East	c. 200	UK - one of several sites.	Frozen fish & fish products	Production	Poor image of the company & industry.	Flexibility; relationships between managers & their staff; understanding implications of high labour turnover & levels of absenteeism.	Image of factory; previous management practices & culture; nature of people who apply.
N. Ireland	3,000	UK co. - one of several sites in Europe.	Meat products- increasingly pre-prepared meals	Production.	Poor basic skills within sector of market in which recruiting.	IT; numeracy & literacy; some specific gaps in certain areas (eg person who can run a particular line).	Level of people recruited; poor basic skills in area.
London	80	Part of UK multi (recently taken over -previously independent).	Ready made meals	Production.	Pay; lack of motivation/ necessary attitudes among those who apply; poor basic skills.	Taking responsibility, & related to this, understanding of relationships between roles; attitudinal; very basic IT; literacy & numeracy.	Little attention to skills of workforce in the past; need to improve productivity.
E. Mids	250 to 280 full time employees.	UK - one of several sites in company.	Sandwiches.	Production.	Attractiveness of the jobs; company used to have a bad image but this has now changed.	General abilities within workforce &, in some cases, reluctance to learn/take on more.	Lack of attention to skill issues in the past; need to improve productivity & competitive position.
London	500	UK - one to several sites.	Ethnic foods chilled and frozen products.	Quality control and engineering	Not paying enough	Basic skills (especially English); lack of willingness to learn.	Nature of local labour market.

2. PRODUCT MARKET STRATEGIES

In this chapter we explore the product market strategies evident among our sample. The first section explores the main factors which are creating pressures for change among food manufacturing companies. Section 2.2 describes the different dimensions of product market strategy and looks at how product market strategies have changed.

2.1 Pressures for Change

There are many pressures affecting food manufacturing companies; these impact on their activities, the way they compete and the skills they require. Companies react to these pressures in different ways, and decisions are made about where competitive advantage lies and the most appropriate product market strategy to take. Inevitably the pressures they experience are also mediated by the position they are in. Where organisations desire to be is a combination of these pressures for change and their existing position. We group these pressures into some key categories.

2.1.1 Competitive Pressures

Competitive pressures can be seen to emerge from two main sources:

- the existence of other suppliers operating in the market place, and

- the changing structure of the retail scene and in particular, the growing buying power of the supermarkets.

Other suppliers

The main driver of change is competitive pressure. Food manufacturing is a low margin operation and this is true for most products. There is fierce competition within the industry. One manufacturer of meat products was suffering from cheap imports due to the value of the pound. Those supplying supermarkets were always aware that a cheaper or alternative supplier might be found. These competitive pressures create the need for change, often simply to survive.

There is over supply in some sectors. Those manufacturing products, such as milk and some meat products, were very clear that there was oversupply in these sectors and that rationalisation was certain. The companies we interviewed were all aiming to survive although some were struggling.

In contrast to many other manufacturing sectors, food manufacturers are often less open to foreign competition in domestic markets and many do not seek to be major exporters. For example, the demand for fresh, ready made meals, the bulky nature of many products and the specific national nature of demand for some products, means that markets and production tend to be focused in Britain. However, not all companies are in this position and it is difficult to generalise across the whole sector. For example, a meat manufacturer was suffering from cheap European imports due to the value of the pound. The tea producer was looking to expand internationally, as the UK market offers little further potential for growth. Foreign competition was a growing threat for some companies, in particular those making products with a longer shelf life. Furthermore, although food is a low margin product the value of the pound has led to companies in some northern European countries gaining competitive advantage in the UK (see also Food and Drink NTO, 1998). The search for competitive advantage and growing globalisation can contribute to changing patterns of production in food as in other products.

The impact of supermarkets

Food retailers, especially supermarkets, have a major impact on food manufacturers (see also Food and Drink NTO, 1998 and Harvey, 1999). While the pressure is greatest on manufacturers providing own label products, companies producing branded products also have to work hard to keep retailers on board. There is always the risk of products being delisted, due to changing consumer demands and competition from elsewhere. Major household names are perhaps least at risk of being delisted, as many consumers have long established preferences for these products. Nevertheless, companies with well established names included among our case studies did report being under pressure and having to keep their products under constant review.

The ways in which retailers impact on food manufacturers include:

- Conducting their own quality audits: these often impose different requirements on companies to those specified through legislation, furthermore requirements vary between retailers.

- Tight turn around for orders: a provisional order might come in the evening before, with the final order arriving on the day. Delivery is expected to tight timetables. One manager reported a delivery window of 15 minutes around the specified time, and a fine if this is not met.

- Wanting a dedicated production line and possibly dedicated staff within a factory.

- Expecting manufacturers to take greater responsibility for product development: this might be in the development of new lines or variations in existing products.

2.1.2 Changing Patterns of Demand

There have been major changes in the pattern of demand for food over the past three decades (see, for example, Ennew et al., 1995). Changing lifestyles and tastes, and higher standards of living have led to a demand for more convenience and specialist foods. For example there has been:

- a major expansion in the market for ethnic foods

- growth in demand for pre-prepared meals and snack products

- growth in demand for specialist and luxury foods

- growth in demand for fresh products made without artificial additives, and increasingly with organic ingredients

- a demand for longer shelf life.

Customers have become more demanding and discerning. They are more likely to complain if something is not to their satisfaction. It is also expected that food will be cheap, especially staples such as bread and milk. This is reinforced by the operation of supermarkets, which is discussed above. All producers are under considerable pressure on price, but particularly those making staple products. Reducing costs was one strategy adopted; a few were aiming to produce other higher value added products alongside these staples.

Packaging is also important. Some companies create or enhance their own brand through the use of distinctive packaging. Societal attitudes, for example towards recycling and conservation, have an impact on the design of packaging. Consumers also want packaging which is easy to open: for example, there is a constant search for a more easily opened milk carton.

2.1.3 **A Highly Regulated Sector**

All sectors of food are heavily regulated, and the amount of regulation has increased in recent years, especially through the impact of the EU and due to various food scares. The Food and Drink NTO (1998) reported how the EU regulatory framework is implemented more rigorously in the UK compared to some other countries, with implications for the pressures placed on national producers. Furthermore, supermarkets and other customers often set their own stringent standards. Health and safety and food hygiene regulations were having an impact on company procedures, and the skills expected of employees.

2.1.4 **Internal Pressures**

The role of senior management

The vision and leadership of senior managers, whether of the company as a whole or individual establishments, is both a key driver of change and a consequence of the need for change. The initial need for change was usually identified, or stimulated, through a company being in difficulty or identifying the need to operate more effectively. This can be seen as a response to the increasing competitive pressures on organisations.

In a number of our sample, there had been recent changes at senior management level, sometimes in the whole team. There were a number of examples where all the new people joining, or being promoted, had a similar vision for the establishment and the way in which this should be achieved. This was often very different from that of the old team, and marked a change in the way an establishment operated. Two examples are given below:

Case study example:

In one establishment, there was a move from the ruling by fear culture of the old senior management team, to a team building culture among the new senior managers. The new team see employees as their fundamental, but an under-utilised, asset. They are trying to change the culture so that everyone understands, works towards, and takes responsibility for meeting the business objectives, in particular focusing on quality.

Case study example:

In another organisation, various disruptive elements had been removed. For example, some managers had been recruiting, promoting and rewarding friends and relatives. If an employee's face did not fit, or they disagreed with these managers, they had been victimised or sidelined. These managers and several of their friends and relatives had been got rid of.

Changing ownership

There is a significant element of merger and acquisition in the food manufacturing industry. Such mergers and acquisitions might also be seen as a response to some of the pressures on organisations. For example, mergers of similar operations may increase company size and market share to the point that new capital investment is feasible. Mergers or acquisitions of different operations might enable organisations to develop new products or enter new markets. Several of our case study companies had recently been taken over by various holding companies. This had commonly led to injections of capital, sometimes a change in management, and serious efforts to improve performance. Other companies were growing, sometimes diversifying, through acquisitions rather than internal growth, and this was part of their business strategy. For example, one company had been taken over by a Danish company. There was limited scope for the company to expand further in the same market segment in Denmark. In Britain, the market was less well developed and an opportunity for expansion was found through the purchase of an existing company.

2.2 Product Market Strategies

Product market strategies can be classified on a number of dimensions, and are the result of the interaction of a number of factors. The companies in which we conducted interviews were of different ages and had different histories. This background cannot be ignored in looking at current market strategies. Companies which have long been producing a particular product, with the investment in technology and skills involved, cannot easily switch to something entirely new. There is, however, a considerable amount of change through take-over and acquisition in food manufacturing and it is through this that most organisations more fundamentally change the balance of their product range.

Within our food companies, managers decide where competitive advantage lies, taking into account, for example: their existing product range and methods of production, the level of both demand and competition in the market, the availability of investment funding, and their aims and horizons for the future. Products go through almost a life cycle. The identification of a new market opportunity, for example pre-prepared ethnic foods, might result in an initial lead in a market. However, as others enter the market to increase supply, or demand tails off, the competitive advantage of being the initial market leader declines. Strategies have to be adapted or changed to meet different conditions.

Underlying organisation's product market strategies were three themes which dominated their approach to products and the production process. These are not stand alone and there was a great deal of cross-over among the cases with some adopting all three and others concentrating on one or two. The approaches are:

- Being cheaper: controlling costs as a prime response.

- Being better: placing an emphasis on quality, eg in terms of ingredients or the presentation and consistency of the product, therefore raising or maintaining the value of the product in the marketplace.

- Being first: developing new products or flavours and therefore being able to attract a premium in the market. A subset of this strategy might be a deliberate decision to be second, ie to develop copy cat products following on from the innovations of others for the 'own brand' market or to do so cheaper.

2.2.1 Being Cheaper

The majority of the employers we interviewed reported the need to control costs. However, approaches to cost control can vary. At one extreme there is simply a drive to minimise costs, however that might be achieved. This was not evident among our sample, although a number had been through major cost cutting exercises over the past few years. These cost cutting exercises were driven by a need to improve competitiveness and were nearly always part of attempts to improve efficiency.

Costs might be reduced in a number of ways, including:

- Changing working patterns: for example, reducing or removing overtime and making shift patterns more effective. There were several examples of employers introducing annual hours so that they could more effectively staff the operation.

- Reducing employee numbers. This might be through taking out layers of management or generally reducing numbers.

- Investing in up-to-date equipment.

- Increasing the skills and effectiveness of existing employees.

- Paying more attention in recruitment to finding 'better quality' people.

Among the case study employers, there had been different emphases on cost cutting. Many had gone through a process of cutting down on hours and employees. Improving the skills and abilities of existing staff nearly always followed. Indeed, at one end of the continuum, several employers were looking at continual improvement. Among these, the abilities of employees to continue learning and take on new ways of working were very important.

2.2.2 Being Better

All our case study companies emphasised quality as part of their product market strategy to a greater or lesser extent. At one extreme, although this was not very evident among our sample, the product is just manufactured to basic health and hygiene standards. However, most were going beyond this. Quality might be defined in a number of ways:

- Using better ingredients or better preparation:

- Depending on the sector of the market a company is operating in, using baked beans as an example, the cheaper variety might have more juice and artificial additives, compared to the 'higher' quality branded product.

- Catering for specific consumer demands in terms of ingredients: for example, several companies marketed their product as having no artificial additives, as natural or organic. This meant that considerable effort was put into making sure that the ingredients purchased met these criteria. If the product was marketed as organic, the ingredients had to be organic; if the product has no artificial additives, all its constituents have to meet this criterion. One company making pre-prepared meals had a meat product manufactured specially as the usual version included artificial ingredients.

- Consistency of the product. This is very important, and is perhaps a particular issue in batch production. Raw ingredients (such as vegetables) might vary in taste and quality depending on the time of year; a slight variation in the quantities might alter the taste. Sandwich fillings have to be of a consistent quantity. Batches will be checked for their taste and appearance, to ensure that they are consistently meeting the standards a company sets for its products.

- Trading on company branding/image. Packaging also plays a role in quality. Several companies have a brand image which they aim to maintain. Furthermore, the way a product is presented and packaged can help to reinforce an image.

These companies were nearly always aiming to improve the quality of their product within their existing product market, rather than move between market segments. Customers are increasingly demanding and expect a certain quality for a particular price. This has to be met, whatever the market these companies are operating in. Customer comments and complaints play a role in ensuring the product meets customer expectations and requirements. They are also important in indicating the direction in which tastes are moving. To maintain quality, the products have to be of the type and level which customers want.

2.2.3 Being First

A number of factors influence the degree of innovation pursued by a company. The availability of skills rarely plays much role in deciding where to focus business strategy. However, skill implications nearly always follow from the strategy.

The underlying consideration in terms of innovation was to identify where competitive advantage could be gained. Companies were both reactive and proactive in spotting opportunities. They react to trends in consumer demand, for example for additive free, organic and ethnic foods. They are also looking at ways of creating or maintaining demand, for example through adapting existing products or looking for new products. Inevitably innovation confers a short lived advantage. One company which had been the first in its area was beginning to suffer from the competition as a result; consumer tastes and preferences were researched to identify the most appropriate diversification strategy. In another example, a meat producer was shifting away from raw products to pre-prepared meals.

Product innovation can take many forms and some form of product innovation was evident in most case study companies. This was usually within an existing product range. The meat manufacturer was constantly introducing new flavours and fillings for a core product. A sandwich maker needed to come up with new and acceptable fillings. Another producer was about to produce an organic version of their main product. All these types of development did not require new investment but could be fitted into existing production structures.

Some companies were looking to consolidate their brand name through improving the product. This might involve adapting the ingredients, changing its look, or changing the packaging. A few companies were looking to diversify their products more radically. This usually came through acquisitions, rather than major new investment at an existing site.

Our evidence suggests a much stronger emphasis on innovation within existing product ranges, rather than developing entirely new products. For most companies in our sample, constant adaptation was necessary to retain market interest or as part of an attempt to expand market share. The majority of companies in our sample were putting considerable efforts into research and development. Product development departments played the main role in this, but increasingly other employees, for example those involved in production, are being involved. Employees might be encouraged to come up with new ideas, or be involved in the testing of products. We also have evidence of managers deciding that maintaining a current brand is more important than the constant search for new products. The nature of markets, competitive position and the range of existing products all contributed to this variation in product market strategy between companies.

Case study example:

One organisation had decided not to follow the consumer battle taking place between its two main competitors. This involved considerable expensive in-product innovation, although they did utilise some of these ideas to produce for the own label market. They have a very strong brand image for their main product, and aim to maintain this.

Strategies also change over time. For example, one company had been first in the market and was losing market position as others emulated them. The product market strategy adopted to address this included both introducing an organic version of their existing product, continuing to develop new flavours and the movement into a slightly different product. This latter diversification was the result of market research leading to the identification of a market opportunity, and product development coming up with a product which could fit with their existing operation.

The structure of food companies needs to be taken into account. As reported in Chapter 1, our interviews tended to focus on particular establishments. A few had been set up by new entrepreneurs with an idea for a product which took off. Several had recently been taken over by larger companies wanting to expand their product range, or by holding companies prepared to invest in sound market prospects. While there is constant innovation in the food sector, mergers and takeovers are a prime way through which companies move into and exit from markets.

At a fairly simple level all our case studies were adopting a strategy somewhere along a continuum of change of either:

- **Maintenance:** consolidating the position of existing products, or
- **Evolution:** developing varieties of existing, within the same market, or
- **Transformation:** entering new, usually related, product markets.

Maintenance

Two distinct approaches appeared to be adopted by companies with long-standing products. Where the product had a clear (and successful) brand image, companies were involved in a variety of measures to maintain the position of the brand, eg through advertising, packaging, maintenance of quality etc. The second approach generally involved products which could be seen as fairly basic or commodities, eg bread or milk. Here the key strategy appeared to be focussed on keeping the price down - particularly in the face of competitive pressures from supermarkets, eg through 'own label' competition or 'two for one' type offers, through investment in machinery and new forms of work organisation.

Evolution

An often complementary strategy which could also be adopted to cement a brand's position in the market was to develop new flavours or styles of products on the back of existing ones. Thus traditional breakfast cereals, for example, are now available in a variety of coatings or mixtures. The aim here is both to build market penetration by broadening the appeal of a traditional product (eg to younger people) and to be in a position to charge a price premium for varieties above the basic or standard form.

Transformation

A third and different approach was to branch out into new markets altogether. In the case of established companies, the new markets were generally adjacent to existing ones, eg: a sugar producer developing artificial sweeteners, a dairy developing a range of yoghurts. Although occasionally some of the cases had moved into quite different markets: for example, a soup-making company had recently moved into the 'cook-in sauce' market. In each case, this could involve them in adopting new production processes and therefore creating new skill demands. The other example of this strategy was new companies which had developed a market niche on the back of a new idea, such as the soup-making company or a specialist sandwich maker we visited.

Multiple strategies

Although strategies tended to vary along the three dimensions it was difficult to place each case in one position. Many, particularly of the larger, companies had a range of products at varying stages in their lifecycle and so could be positioned in any three of the above categories. The categories are, however, a useful differentiation of approach to certain products.

Brands vs own label

The decision whether to produce brand or own label products is complex. Furthermore, many companies produce for both markets. Factors influencing the decision include:

- the strength of an existing brand name and their ability to survive in existing markets

- the nature of a new product and its ability to fit into a niche market

- the negotiating power of retailers: for example, some will only stock their own label of certain products

- an assessment of risk: producers have to decide how far they will invest in a particular relationship. One company had withdrawn from supplying a retailer. Having provided this retailer with their own production line and staff, they drew the line at providing a separate factory.

- the vision of managers and their assessment of where competitive advantage can best be gained.

2.3 The Sustainability of Product Strategies

As far as we could tell, most of our companies did appear to have sustainable strategies. A few were struggling to survive, usually in over-supplied markets. These were often using continuous or semi-automated production methods, and supplying basic products on a large scale, for example, milk and meat. Although these companies were adopting similar strategies to better performing companies, it is unlikely that such strategies will be sufficient, given the market in which they were operating.

A product market has to be fit to purpose to succeed. The varied nature of demand for food, ranging from demand for cheap products to luxury items, offers the potential for companies to adopt many different product strategies. Strategies were rarely static. Most establishments were adjusting their product strategies within an existing market segment, rather than aiming to move between sectors. Improvements in productivity and quality (however defined, as discussed earlier), keeping costs under control and product innovation were all occurring to keep up or ahead in the market.

However, there are many factors outside the control of managers which influence demand and competitive pressures. Strategies were being adjusted and reviewed to address new patterns of demand and competitive pressures. Elements which contribute to sustainability include constant attention to the efficiency of production. This involves working with the skills and abilities of employees; keeping up to date with technology, customer expectations (through quality and product innovation) and working practices, as far as is appropriate within a particular market segment.

Of crucial importance to this whole process are the skills of managers. It is not so much the sustainability of a current strategy which is important but the ability of managers to adjust in the longer term. Managers need to be able to develop appropriate product strategies, adjust these as necessary, work with the rest of the workforce to develop the relevant skills and have the foresight to spot opportunities and introduce change. There were many examples of changes in management teams to make them more flexible and able to address change, and to bring in new ideas and more forward looking, proactive people. It was in these companies that major improvements had often been made in the skills of the workforce and in performance.

As discussed earlier, patterns of demand are changing and this has implications for future skill needs which are explored further in Section 4.6. The greatest growth has been in the demand for ready made meals, snacks and luxury items. These types of product nearly always involve batch production methods. There has also been a growth in demand for craft and hand-finished products. A continuation of this trend and the likely rationalisation in areas of over-supply identified above will shift the future composition of the sector. At the same time, establishments, especially those producing standard, mass produced products, will continue to look to reduce costs and improve efficiency. Further deployment of more sophisticated and computer-controlled technology is therefore likely. Higher quality strategies will develop around these pressures and changes, and the need to respond to changes in consumer demand.

3. PRODUCTION PROCESSES AND WORK ORGANISATION

The previous chapter explored how key pressures for change, in particular increased competition and changing consumer demands, have led food companies to differentiate their product market strategies on the basis of cost, quality and innovation. In this chapter we consider the main production methods adopted in the sector and the ways in which work is organised. These both follow from the product and production strategies adopted and have implications for skills.

3.1 Technology and Processes

There are three main methods of production, each of which are discussed in more detail below:

- continuous or semi-continuous production
- batch production
- craft and hand-finishing.

The third of these was little represented in our sample, and most of the evidence presented in this report is drawn from other studies and our wider knowledge of the sector.

3.1.1 Continuous Production

The method of production used depended on the product strategy adopted, in that this strategy leads to particular types of product being manufactured, as explored in the previous chapter. The manufacture of a standard product, for which there is a mass demand - for example, breakfast cereals, milk, sliced bread and sugar - leads to the adoption of continuous production methods. This involves investment in sophisticated equipment which will be utilised as fully as possible, often for 24 hours a day, 365 days a year. This equipment is computer controlled, and one line will be run by a single employee. In these plants the amount and sophistication of the equipment has increased over the past decade or so. Increasingly all activities are mechanised, including the input of raw materials, packaging and dispatch; all manual tasks are being eliminated from the production process.

Many of these products compete on price, and producing as productively as possible is vital. Managers reported major investments in equipment, to increase efficiency and operate as cost effectively as possible. There has been an emphasis on reducing wastage and downtime. However, production quality issues are also increasingly important. Several managers reported that as the potential to increase efficiency and cut costs is reduced, the emphasis on quality in terms of producing to specified standards becomes even more important. Different approaches to quality were discussed in the previous chapter. Continuous production does, by definition, contribute to consistency in a product; however, this has to be regularly monitored.

A slight variation is the use of semi-continuous production methods. Again, this involves the manufacture of standard products for which there is a mass demand. However, the main difference here is that some tasks might not be seen as suitable for mechanisation, or that technology is not yet efficient enough. Some manual tasks remain. Two examples are fish filleting and the removal of bones from certain cuts of meat.

3.1.2 Batch Production

Batch production is adopted where there are limited production runs of a particular product and where frequent changes in the ingredients are needed. For example, a sandwich maker was making relatively small batches of sandwiches with different fillings and each production line experienced several changes a day in the type of fillings and bread used. Manufacturers of specialist pre-prepared meals will only make a certain number of each flavour or recipe at a time.

Batch production involves less equipment than continuous line production, and a greater number of tasks are conducted manually. However, equipment is used where possible, and that which is used is becoming increasingly sophisticated. For example, one company was investing in updating its equipment, bringing in computerised ovens and cooling equipment. Another had recently updated its conveyor lines.

In some circumstances, decisions had been made not to invest in equipment. For example, certain tasks are seasonal or conducted irregularly. At one establishment a large number of tomatoes are used in the summer. It was argued that it was not worth investing in a machine which would only be used for a short period each year. Temporary labour was used to remove the stems. A sandwich maker reported that as they only made limited numbers of sandwiches involving some types of filling, investment in certain pieces of equipment were not worthwhile. An analogy was made between this company and a mass producer of sandwiches. The latter has a line dedicated to making prawn sandwiches and this includes a hopper through which the prawns are put into the sandwiches. The batch producer we visited could not justify this investment for the volume of sandwiches made.

For other activities, managers had found that current equipment is not sufficient to the task. For example, machines cannot always ensure consistency in a product but churn it out regardless. Furthermore, raw materials do not come in consistent shapes and sizes, current machinery is not always as efficient as manual dexterity and knife skills. The design of some equipment has not developed sufficiently to work effectively in different environments. In one establishment, the newest packing machines kept breaking down due to the damp environment.

Batch production is more labour intensive than continuous line production. Cost and quality issues are still important. Consistency in the product is essential. Production has to be as efficient as possible, and there were examples of attempts to reduce wastage and increase productivity in establishments using batch production. All of these approaches have implications for skills as will be discussed later.

3.1.3 Craft and Hand-finishing

There has been a shift in consumer demand towards more individual and hand crafted products. Craft and hand finishing forms of production are used when a company adopts a product market strategy aimed at meeting this type of demand. Part of the attraction of these products is their image of being close to home made, the pure nature of their ingredients and the focus on more individual production methods. These types of company were not really represented in our sample, so we have little evidence on their activities. However, we can use information from elsewhere and this is drawn on in the rest of this report. The director[3] of the Handmade Flapjack Company attributes success to the hand made style recipe and not using artificial colours or additives:

'We don't want to compromise the quality and format by switching to automated manufacturing methods.'

Some technology is involved, for example, in mixing and cooking the product. However, the overall focus is on more traditional craft skills. Indeed, another study which included a larger number of these types of producers found a growing demand for chefs among food manufacturers (Dench, 1999). It was felt that people with these skills were more suited to develop and produce products to meet more specialist consumer demands. There is also a greater demand for manual skills compared to other forms of production.

3.1.4 A Combination of Processes

Some companies combine more than one means of production on the same site. For example, a bakery mass producing sliced bread also had a small unit in which hand crafted products were made; a milk manufacturer might combine continuous line production of cartoned milk with a less automated bottle line. However, usually where a company adopts a range of product strategies, these are pursued through different establishments. Takeover and acquisition are the key means of pursuing these strategies. For example, a company might decide to produce a portfolio of goods which cater for different types of demand and hence require different forms of production.

3.1.5 Some Common Themes

The production processes that organisations adopt would seem to be the result of a number of factors. We have seen that they are influenced in part by the strategy of doing it cheaper, doing it better or doing it first. They are also influenced by the demand for the product itself, in that a high demand product lends itself more to a technological solution. Depending on these factors, managers would need to attend to quite different things. Those operating in high demand/high production products were paying considerable attention to the nature and level of technology being used. Keeping up, finance allowing, with the most appropriate technology was vital although a positive decision not to purchase certain equipment could also be made. Those involved in continuous production, aiming to improve productivity and quality, reported that although equipment was very expensive, they could not afford not to invest in up-to-date equipment. Those involved in batch production were also investing, where possible, in keeping equipment up-to-date (see also Dench, 1999). Competitive pressures mean that, even where a product is not sold purely on price, efficiency and productivity are important.

We believe that the two key factors influencing such strategic decisions in the food sector are the consumer demand/production quantity of the product and the 'added value' element of the product strategy. Products are differentiated along these two continua as in Figure 3.1.

These two factors then have knock on implications for product market strategy, as shown in Figure 3.2. Low added value/high production levels will tend to encourage differentiation on the basis of cost, high added value and high demand will push organisations to be primarily more innovative than their competitors. Low demand and low added value will lead to a differentiation on cost with some element of quality, tending towards the consistency definition of quality. Low demand and high added value can best support product market strategies differentiating on quality and innovation.
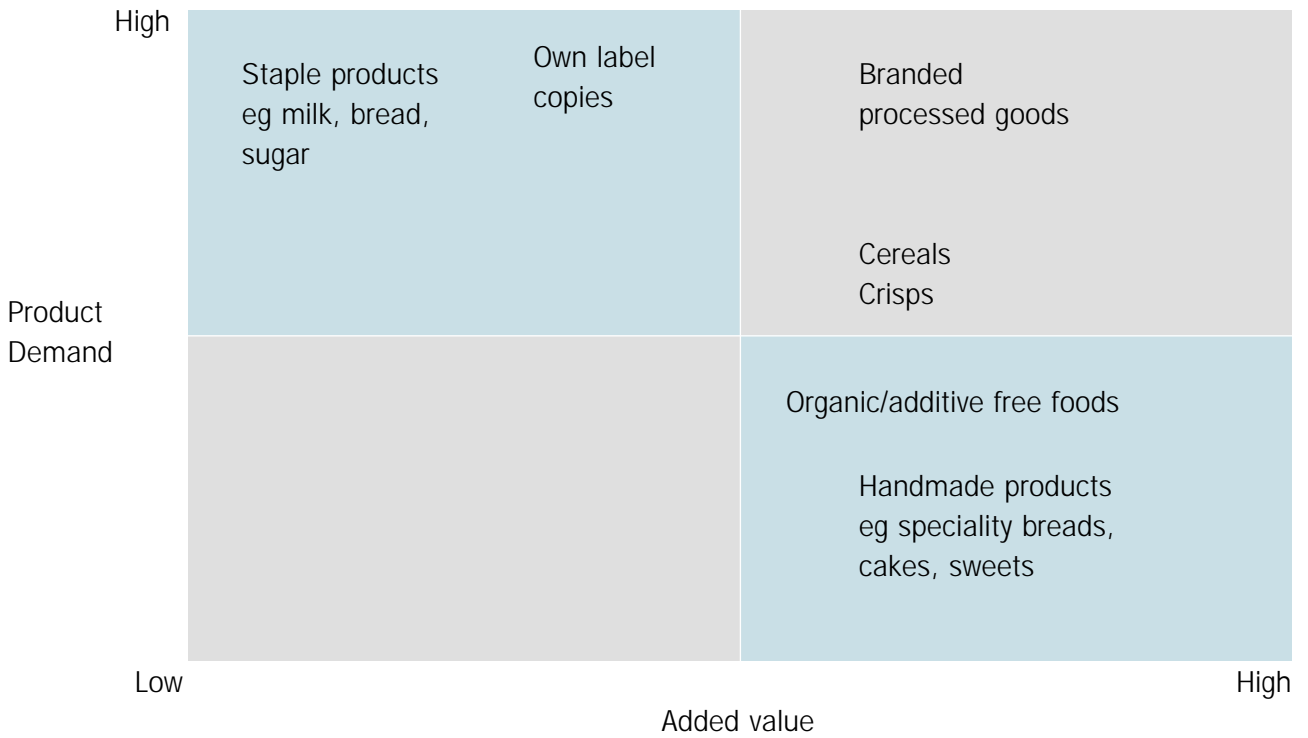
Figure 3.1: Product differentiation

High

Staple products eg milk, bread, sugar	Own label copies	Branded processed goods
		Cereals Crisps
		Organic/additive free foods Handmade products eg speciality breads, cakes, sweets

Product Demand

Low — Added value — High

Figure 3.2: Product market strategy

High

Cost	Innovation
Cost Quality/consistency	Quality Innovation

Product Demand

Low — Added value — High
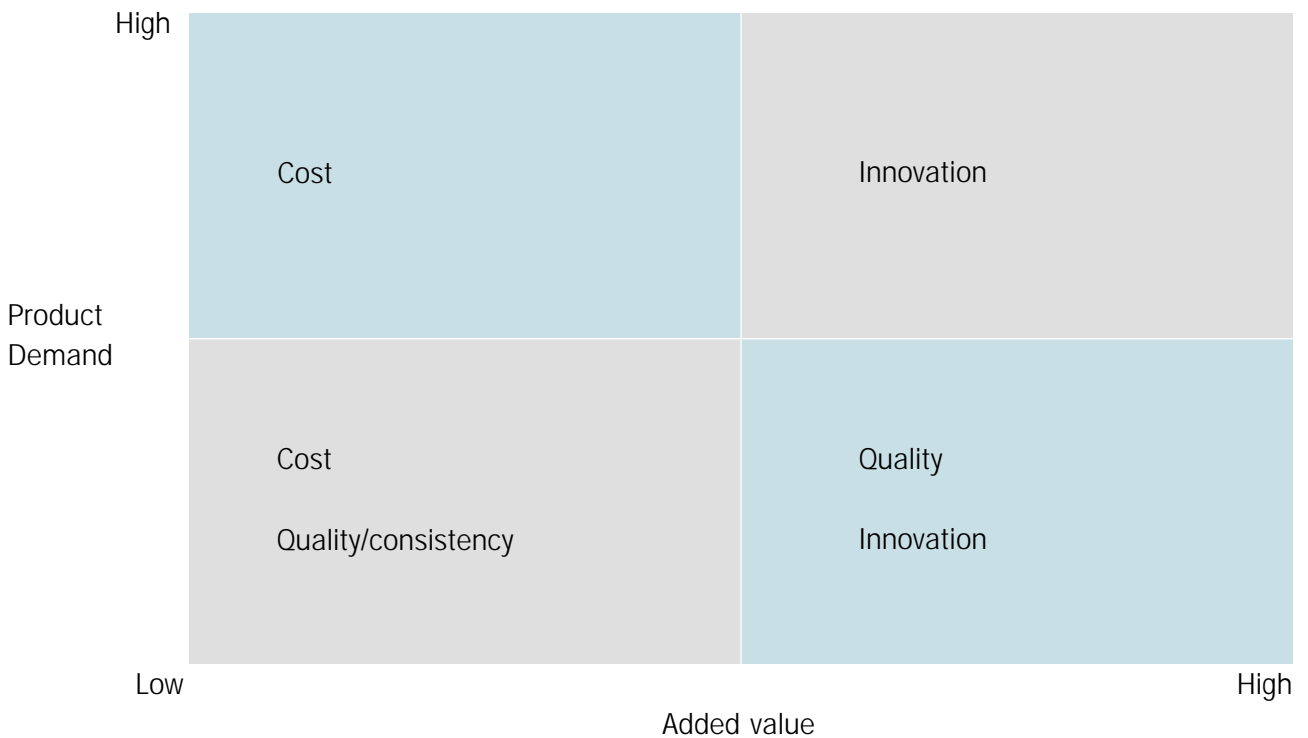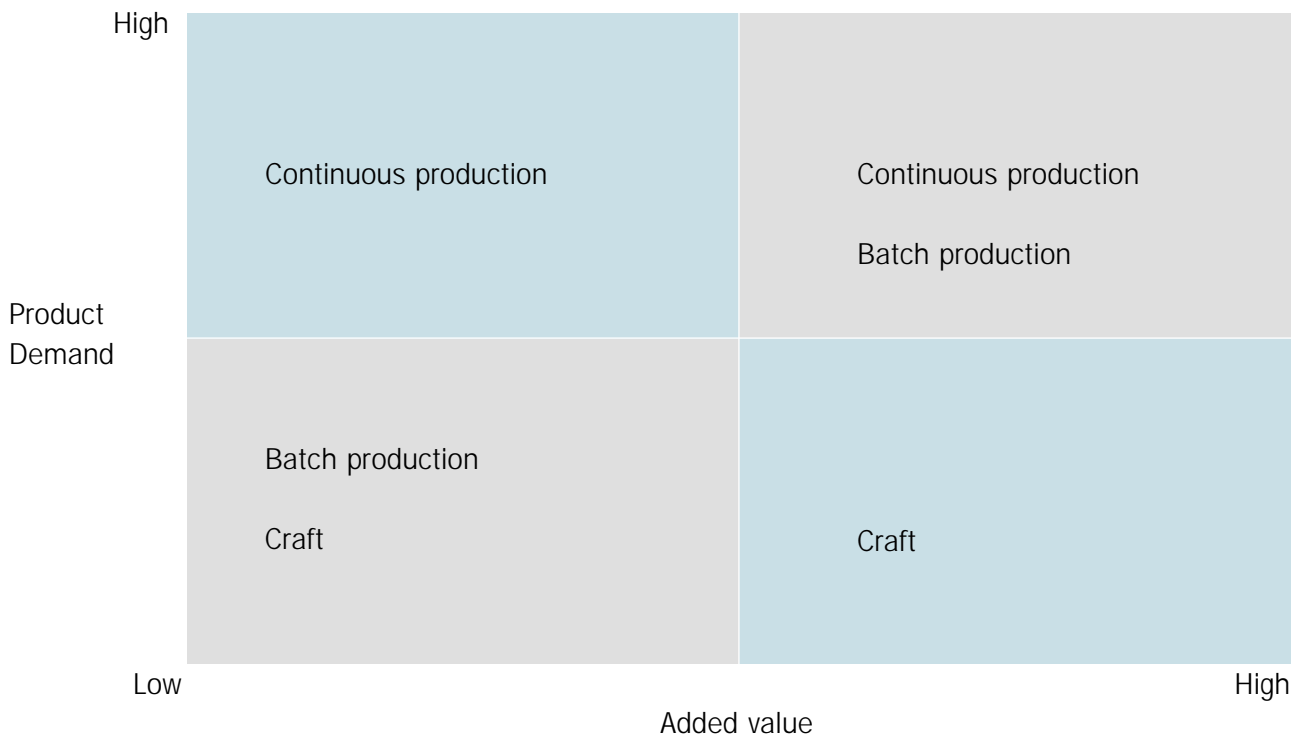
Production processes can then also be seen to relate to these other factors (Figure 3.3). High production runs lend themselves to more automated approaches. A combination of low production runs and high added value are more likely to result in organisations adopting a craft based solution.

Figure 3.3: Production processes

3.2 Work Organisation

The organisation of work was changing in many of our case study companies. In particular, there was an emphasis on team working, devolving responsibility down the management structure, and greater flexibility. Few establishments were aiming for full multi-skilling. Shift patterns and hours of work were also being adapted to provide a more efficient use of labour. As with the adoption of new technologies, the introduction of new working practices contributed to the achievement of product strategies. For example, through introducing more effective methods of working, cost efficiency, quality and innovation are all contributed to. There was some relationship between the organisation of work and the different methods of production outlined above.

Team working

Team working can take many forms. In some organisations there is little more than a requirement that employees work more closely together. The introduction of team working was most developed in batch and continuous production. In batch production, teams might be organised around a line, a shift or a function. There were a few examples of a move towards self-managed teams in both these forms of production.

The exact form of team working depended on a range of factors, including the nature of production and technology, the length of the line, historical factors within the factory and the experiences of managers. There was no one model. It was equally obvious that no one model works better than others. The situation was rarely static. There was an element of experimentation and learning from experience, and an example is provided in the box opposite.

Case study example:

In one organisation, team leaders has been introduced to free up the time of managers, allowing them to concentrate on more strategic issues rather than day-to-day concerns. However, the structure had become too hierarchical and it was felt that communication within the establishment was suffering. They were about to introduce a flatter management structure through self-managed teams. More direct communication with employees at all levels was taking place.

Quality was an important part of the product market strategies of many of our sample and assuring quality is part of the responsibility of teams. While establishments often have a separate quality control function, it is increasingly the case that quality assurance is being adopted whereby quality is the responsibility of all employees. This releases the quality control team to take a more strategic overview.

Team working is essential to increased efficiency and cost reductions. When operating properly, team working helps to ensure task flexibility and a flow of information so that production operates as smoothly as possible. Teams can also be used to identify and address problems, further contributing to efficiency.

The introduction of teams both creates and helps to address skill gaps. Through team working, employees become more aware of the range of tasks involved and task flexibility may be enhanced; better communication about and understanding of the production process can also increase efficiency. However, team working can also throw up shortfalls in the way employees work together, are prepared to take responsibility and learn new skills.

Devolving responsibilities

In all our case studies, employee numbers had been reduced significantly over the past decade, were being reduced currently, or were being kept under strict control. Layers of management had been removed, and different reporting structures were being introduced. These changes were a response to competitive pressures and the need to reduce costs and improve efficiency. Quality and innovation may also be facilitated. For example, as ensuring quality becomes the role of all employees, they understand what this means and why it is important.

The removal of managers and smaller workforces was leading to more responsibility being pushed 'down the line'. Employees at all levels were being expected to take on a greater range of responsibilities and tasks. These changes were also, along with the development of team working, creating new first line manager roles. In all forms of production, there had been a move away from traditional supervisory posts (see also Dench, 1999 and Giles et al., 1997). These posts had, as their name implied, usually involved individuals overseeing activities. They were often filled on seniority, and those filling them had a narrow range of skills. The development of teams and devolving of responsibility has led to the need for more proactivity at supervisory levels. The job title and role has been changed. Team leaders are expected to take a much more active role in managing production; managing, motivating and training staff; and addressing quality and efficiency issues.

Flexibility and multi-skilling

Flexibility between roles is of growing importance whatever the team structure within an establishment. This took a number of forms. Flexibility can involve individuals developing a range of skills and specialisms, or can rest within teams (ie members of a team in combination provide the range of skills needed). Most organisations use both approaches. Flexibility within individuals enables labour to be deployed more effectively, absences to be covered, flexible working patterns to be operated efficiently and often the reduced use of temps. However, flexibility within teams recognises that it is not always possible or effective to develop all skills in all individuals. Furthermore, it reduces reliance on key skills being vested in too few individuals.

A distinction can be made between flexibility and multi-skilling. Flexibility might not require new skills, but rather a removal of demarcations and an attitude of mind which facilitates employees doing what needs to be done, even if it is outside their immediate area of responsibility. Multi-skilling involves employees taking on skills outside their normal area of expertise or responsibility. The most common form in continuous, but also to some extent in batch production, is the blurring of lines between operative and maintenance staff. There were varying approaches to multi-skilling between process operatives and maintenance staff. Most frequently, operatives were being trained and encouraged to take on some basic maintenance tasks. In some cases, maintenance employees were being encouraged to learn operative skills. Only in a few cases was full multi-skilling being aimed for, and this was most commonly in the larger-scale continuous operations.

Those which were not moving towards multi-skilling were able to report reasons for this, and it was rare that multi-skilling had not been considered as an option. Reasons included both barriers among the workforce, and views that multi-skilling would not sufficiently contribute to more effective working.

Case study example:

In one establishment, full flexibility for process operatives was not considered desirable. It was found that employees did not like being jack of all trades; processes do differ and some moves are easier than others; redeployment for short periods is not easy as it destroys the balance of a team, makes holiday bookings difficult and disturbs training patterns.

Multi-tasking

Another form of 'multi-skilling' involves employees switching tasks at a broadly similar level of skill. This was most often found in batch production and led to employees being able to operate a range of different machines or lines, and work in different departments. For example, in one establishment, previous demarcations between the mixing, cooking, cooling and packing areas were being reduced. Employees were being trained to work across a number of these functions.

Shift patterns and hours of work

There were varying degrees of scope for changing the hours and shift patterns of employees. Where this was being done, it was nearly always to improve the efficiency of the production process; sometimes to better cater for customer needs. For example, batch producers making products with a limited shelf life were working shifts which enabled them to supply their customers most appropriately. The sandwich maker worked shifts which enabled them to meet the weekday demand for sandwiches. Fridays were quiet, while on Sunday production was needed to meet Monday's demand. A producer of ready made meals had to operate to meet the delivery deadlines for supermarkets. This involved larger shifts in the morning to get the product out. Demand for some products is seasonal. For example, one manufacturer of a pre-prepared product for which there was greater demand in the winter had relied on a smaller workforce in the summer. However, this was changing. To improve the efficiency of the operation, the use of temps to help at peak times was being reduced and a core workforce was being trained and developed during quieter summer periods.

Continuous production operations had changed their shift patterns to ensure the most efficient operation of their equipment. For example, annualised hours were being adopted to enable greater flexibility in staff cover across the year.

4. Skill Needs and Deficiencies

4.1 Introduction

Skill needs and deployment are closely related to the organisation of work and the level of technology used. In this chapter we explore the skills needed by employers adopting the different production processes outlined in the previous chapter: continuous, batch and craft, and the nature of skill deficiencies. We also look at the impact of these deficiencies and how employers were addressing them.

The range of skills needed was in many respects very similar across the different production processes, although there were differences in emphasis and these are discussed below. There is some evidence that skill needs are changing in food manufacturing: for example, as equipment becomes more sophisticated, as the organisation of work changes and as quality and hygiene issues become even more important. However, it is also the case that many skill needs have remained unchanged. It is rather the emphasis which employers place on the importance of skills, or the importance of employees being competent and skilled in these areas which has changed. The availability of skills rarely influenced the product strategy and processes adopted; however, skill implications nearly always followed from their adoption. For example, those aiming to reduce costs and improve efficiency and quality were all working with the skill levels of their employees.

The employers we visited were not complacent about the skills of their employees and were addressing this issue through a range of means. However, introducing and embedding change, especially that which involves different attitudes and behaviours takes time. Several employers pointed to improvements in various performance measures as evidence of the impact of change: for example, reduced levels of wastage, faster delivery times, a change from making a loss to profit making. Indeed, our evidence suggests that even when skill needs have remained relatively stable, employers have made significant efforts to get the best out of their employees through working to improve their skill levels. The emphasis has been on maximising employee performance at the required level of skill - rather than changing the skill level itself.

This does not mean that skill issues simply revolve around deficiencies among the workforce, and managers blaming workers for poor skills levels; the situation is much more complex. As discussed elsewhere in this report, the skills of managers are crucial. Managers need to recognise the skills needed and to develop these across the workforce. Introducing change also involves communicating with employees and taking them along; this requires managers to have good 'people skills' and be able to motivate. There are several examples in our sample of establishments where skills had been paid relatively little attention until recently. As these units had begun to lose market share or make a loss, a range of changes were made (as discussed elsewhere in this report). New management teams had been recruited or promoted and much greater attention was being paid to the level of skill across the workforce more generally. Our evidence suggests that most employees are prepared to learn and become more skilled, if given the opportunity. They do, however, need support, and training and development, to do this. Furthermore, the more imaginative and forward looking managers commented on the need to trust people and assume they can perform well. This nearly always led to positive results.

However, it should also be recognised that many jobs in food manufacturing are not very attractive. They are often at a low level, offer unpleasant working conditions and are generally ranked lowly in people's perceptions. Some recruits and employees are very good, and in nearly all establishments there was a core of stable, skilled and motivated employees. However, managers were also having to work with many people who were poorly prepared for work and lacking in basic skills. The Food and Drink NTO study (1998) also discussed this issue:

'This survey highlights the wide gap in basic educational standards of employees in this country compared with the EU and Japan. The number of employees in the UK food and drink manufacturing industry with educational qualifications is on average 30 per cent less than the EU and 40 per cent less than Japan. Employers overseas generally did not have the same concerns as the UK companies visited with regard to the standards of literacy and numeracy of young people.' (Food and Drink NTO, 1998, pp 6)

4.2 Skill Requirements and Deficiencies

The skills and abilities needed by employers can be divided into three categories:

- **Personal attributes** - these are related to individual behaviours and personal characteristics.

- **Basic and generic skills** - these include literacy and numeracy which are basic skills people are expected to acquire through education, and a range of other work related skills (for example: IT, communication, working with others, problem solving, taking responsibility) which are required across a wide range of jobs. They do, however, often have a particular industrial or occupational dimension in that the context in which they are applied affects the exact nature of need.

- **Vocational skills** - these are skills which are specific to food manufacturing. They are not necessarily exclusive to this sector: for example, food hygiene is also important in catering establishments, but they are only needed in a narrow range of industries.

The range of these skills needed are discussed below, followed by a consideration of the extent to which needs changed with the product market strategies and/or production processes. The final sub-section addresses management skills separately.

4.2.1 Personal Attributes

While in the past a range of manual skills related to strength and dexterity were important, these are now rarely needed. In continuous production all manual skills are gradually being replaced by technology. Among our sample of employers, some were more advanced than others in this replacement, but all were heading in this direction.

The most important personal attributes were having a positive work ethic and an interest in the job. This is implicit in many of the other skills listed below. Just wanting a job is no longer enough. Many of the vocational and generic skills needed by these employers require people to think and use their brain. The often used quote (see also Giles et al., 1997) about it being no longer appropriate for employees to leave their brain at the factory gate was referred to by a number of our respondents. It is perhaps in continuous production that this emphasis on the attitudes of employees has been greatest, although those using other levels of technology were also paying more attention to these.

The attitudes and personal attributes of potential recruits and existing employees was the area creating the most problems for employers. It is these attitudes and attributes which play an important role in the ability of employees to improve their skills and take on new ways of working. Indeed, they often underlie proficiency in the range of generic and vocational skills needed in food manufacturing. Employers reported difficulties in recruiting sufficient numbers of people who were really interested in the jobs available. There were also attitude problems among existing employees.

4.2.2 Generic Skills

- **Basic literacy and numeracy** - Employers, particularly those involved with continuous production, report that they are no longer able to cope with employees who lack these basic abilities. Hygiene and health and safety regulations involve reading and recording information; computerised equipment involves reading screens. The use of IT means that more statistical data is available and employees are increasingly expected to use this, for example to monitor production targets.

  Employers operating batch production processes also reported a growing need for basic skills. For example, in batch production it is very important that the labelling is correct and sometimes different retailers require different details to be included; the use by or sell by date has to be correct. One manager reported how a labelling mistake leading to a product recall could cost between £10,000 and £50,000. Employees need to be numerate to check goods in and out, check orders and record basic statistical information.

  Some factories are located in areas in which a relatively high proportion of people lack basic skills. Furthermore, food manufacturing is often not seen as a very attractive option, and those applying for jobs disproportionately include people with poor basic skills. Poor basic skills were therefore a problem in recruitment and among the existing workforce. Recruitment procedures were being adopted which screened out those with poor basic skills. Deficiencies among existing employees were addressed through, for example, providing appropriate training or putting people in the few positions which had lower requirements for basic skills. This meant that these employees were often most at risk of redundancy when cutbacks were made. One continuous production operation had got rid of employees who could not read and write.

- **IT and computing skills** - In the sector as a whole, the need for IT skills was fairly basic, although it was most widespread and developed in continuous production. The equipment used is computer controlled and employees have to read and understand computer screens, and work with the information. Production workers are rarely programming equipment. They might need to understand how to use some basic computer commands to operate a piece of equipment. However, although continuous production technology is becoming more sophisticated, in some cases its actual operation can become simpler. For example, the introduction of touch screens means that those operating it do not need advanced keyboard skills, and they are automatically taken through the main processes by the software. As batch production equipment becomes more sophisticated, there is a growing demand for IT and computing skills.

  Generally, employers did not report many deficiencies in the area of IT skills, either in relation to existing employees or external recruitment. There was some evidence of a reluctance to work with IT among older workers, but this was not widespread. As long as employees or recruits were prepared to work with IT and computers, providing them with the basic level of skills required was not a major problem for these employers.

- **Team working** - This is crucially important. Teams were nearly always the most common form of work organisation, although as discussed in the previous chapter, team working can take a number of forms. Team working involves a wide range of other personnel and generic skills, including the need to communicate and get on with a range of personalities.

  In batch production, team working is essential to ensure that the production process operates efficiently. In the companies we visited, individual employees no longer stick with one task, but are expected to operate flexibly within a team. As well as a range of vocational skills, this requires people to communicate and keep each other informed.

  Deficiencies were reported in the abilities of existing employees to adapt to team working, as well as the qualities of potential recruits. These were most common in organisations which had more recently made efforts to improve efficiency, ie where team working was relatively new.

- **Communication** - This is an important part of working in a team but goes much wider than this. Employees need to be able to communicate clearly with colleagues and managers, but they also need to understand the importance of keeping people informed, for example, about any problems in their area, breakdowns, etc. Communication also involves listening and understanding what is said to you.

  Employers reported that their employees did not communicate properly with each other about what had been done, needed doing, where difficulties were arising, etc. For example, in one establishment, it was reported that a product could be put down somewhere and no one told; it could take two hours to find this product again causing disruptions to the flow of production. These types of deficiency were attributed in most cases to a resistance to change and adopt new ways of working, and a reluctance to take on additional responsibilities, rather than a real lack of ability among most employees to work together.

- **Taking responsibility** - It is increasingly expected that people will take responsibility for their own work, but also for dealing with anything which seems to need doing. In continuous production, although team working is important, employees are often working largely on their own, for example being responsible for one or a number of process lines. In this context, employees have to be prepared and able to take responsibility for a range of different tasks.

  In batch production employees are expected to accept a range of responsibilities: for example, if something goes wrong employees are expected to deal with this, keep the relevant people informed and make sure the problem is addressed. There has been a move away from more traditional demarcations and the attitude: 'that's not my job'. This does require a major change in attitudes in some organisations, and it was taking time for change to happen. There was evidence that employees are reluctant to take on additional responsibility and this is for a range of reasons; they are worried about taking the blame, they feel managers are paid to take responsibility, they simply do not want extra responsibility.

- **Problem solving** - This is related to taking responsibility but goes further. In continuous production, problem solving is a very important skill. Employees need to be able to identify what is wrong and provide a solution, whether this involves implementing the solution personally or calling in others. Technical problems receive particular emphasis (and this is related to moves towards multi-skilling discussed below). Within continuous production, attempts to improve efficiency and reduce costs have played an important role in emphasising the importance of problem solving as a skill. For example, in several plants it was reported that

there used to be a 'sticking plaster approach' to problems; a quick cure to keep the plant running (and this was as much due to the attitudes of managers as a lack of skills among other employees). The emphasis is now on diagnosis and longer term solutions.

- **An interest in training and development** - All companies were providing training and were expecting employees to improve their existing skills as well as learn about new processes, ways of working and products as the need arose. Indeed, in continuous production operations, especially where continuous improvement was emphasised, employees who were not prepared to learn were at a disadvantage. Many employees are, however, prepared to learn new skills, especially if this makes a job more interesting or is rewarded in some way.

- **An ability to cope with change** - This is closely related to attitudes. Change is a fact of life in many food manufacturing companies, as they attempt to keep up with, possibly ahead of the competition, through introducing new or updated technologies, ways of working and products. Employees have to be able to cope with this change, the uncertainty it can generate and any requirements to learn new or update existing skills. This ability was needed regardless of the production strategies and processes being adopted.

4.2.3 Vocational Skills

- **Understanding food hygiene** - In continuous production, the skill need was fairly basic, including understanding the need to wear protective clothing, to wash hands before touching food products, or between touching different products, and remembering to do these things. It is essential, as any establishment would quickly run into trouble during quality audits if these rules are not adhered to. In continuous production, the cleaning of equipment and surrounding areas is also very important. In most operations, rather than having a separate cleaning crew, this is becoming the responsibility of the individual or team of employees operating a line.

  In batch production, there is the additional need to avoid contamination between batches. When there is a change between products, it is important that the equipment and surrounding area is cleaned properly and that there is no possibility of ingredients from the two batches becoming mixed. The movement of ingredients 'by hand' rather than through a continuous machinery process also provides greater opportunity for contamination. For example, employees in one establishment reported problems with temporary staff who did not appreciate these issues. Containers would be put on the floor and would pick up bits which could fall into the mix.

- **Health and safety** - Knowledge in this area is crucial. 'Trips, slips and spills' are a major cause of accidents in food factories, and it is important that employees understand how to minimise these. Understanding why certain things are done in the way they are is an important part of this. The greater sophistication of equipment in continuous production creates a different scope for accidents compared to other methods of production. For example, on one hand there are fewer chances of accidents as there are fewer people involved; on the other hand, the nature of the equipment might mean that an accident is larger and more serious.

  There is, however, possibly a greater scope for accidents in batch production. There are more people around in the production area, machinery is more diverse and used by a greater number of people. Furthermore, while most continuous production lines are in purpose built buildings; batch operations are more likely to be in older, less suitable buildings.

- **Quality** - While many factories have their own quality control function, it is increasingly expected that all employees will play a role in ensuring quality. This requires an acceptance of the role, the necessary knowledge to carry it out and an understanding of what quality means and why it is important. The different approaches to quality were discussed in Chapter 2, and the approach adopted influences the precise skills needed. However, in continuous production, these might involve checking computerised monitoring equipment, taking samples at certain intervals and possibly conducting basic tests, monitoring the equipment to ensure it is operating to provide consistency at each point (for example, from the basic raw ingredients to packaging).

  Quality in batch production does have some different dimensions. For example, at the input end this might involve the team checking 'use by' dates and that ingredients meet the required specification. In the manufacturing process, consistency and contamination have to be checked for, the cooking times and temperatures adhered to, etc. At the output end, products have to be properly packed, labelled and dispatched. The type of team working adopted influences the range of skills employees need in respect to quality. For example, if teams are organised around departments, the skills needed are narrower; if team members work across departments during a shift, they need a fuller range of knowledge and skills.

- **Understanding the business** - This has a number of dimensions, for example understanding:

  - the implications of one's own actions for others.

  - the implications of a problem in one part of the production process. For example, if a piece of equipment breaks down this might have implications for the whole line and reaching that day's targets.

  - why things are done in the way they are, to minimise mistakes. For example, if employees know why a product has to be heated to a certain temperature for a certain time, rather than doing this just because a manager says so, it is more likely that they will do the job properly.

  - the importance of customers - the targets and other criteria which they impose.

    All these aspects of understanding are increasingly important as part of the drive to greater efficiency and in ensuring quality. If employees understand why something is important and the implications for the business, they are more likely to appreciate the need to learn new skills and to do things properly.

- **Flexibility** - There is a widespread need for employees to be flexible across a range of tasks, and this is most common in batch and craft production. On one hand, this involves simply picking up and sorting out anything which appears to need doing, whether or not this is part of one's direct responsibility - for example cleaning. On the other, this involves employees becoming capable in a wider range of skills and acquiring more knowledge. For example, they are expected to work across the whole range of activities involved in producing a product and become more involved in quality issues. This growth in flexibility contributes to greater efficiency and cost reduction, it can also contribute to quality issues as more employees become involved.

- **Maintenance skills and multi-skilling** - It is in continuous production that the issue of multi-skilling and flexibility between operative and maintenance roles was most often discussed. At a minimum those operating a line, or a number of lines, were expected to be able to conduct basic maintenance tasks, and to identify simple problems and breakdowns and deal with these. However, as batch production operations have become more mechanised, there have also been moves to train operators in these areas. As discussed earlier, there were different approaches to multi-skilling. We came across very few examples of full multi-skilling. However, a few employers were beginning to move in this direction. It was felt that further improvements in efficiency and productivity could be made through extending the abilities of employees operating a line so that they are able to address a wider range of maintenance and engineering issues. Such multi-skilling of production operatives would potentially reduce the need for engineering specialists and/or free up these to carry out planned maintenance and deal with more deep seated technical problems.

  This was an area of skill need which was causing employers some difficulty. It was not that employers were reluctant to provide training in these skills, but rather that there was a limited number of people available to train up. There were a number of reasons for this, including the lack of ability among some existing employees and a reluctance or inability to take the additional responsibility required (for example: in one factory many jobs were filled by women working part-time, they did not want the extra responsibility or to work the additional hours which becoming multi-skilled generally involved). This reflects deficiencies in the range of generic skills discussed earlier in this section.

- **Dexterity and manual skills** - Except in the large scale continuous production operations, many food manufacturers still require dexterity and manual skills: for example, in fish filleting, cutting certain portions of meat, craft bakery products. Manual tasks are rapidly disappearing where automation is being introduced throughout the production process. However, in other organisations, manual tasks will remain important until technological developments lead to equipment which is more efficient and cost effective than people.

4.2.4 Variation by Production Method

There was, in general, considerable consistency in the need for skills across the different production methods. There were, however, some key variations and these are referred to in places above. The need for manual skills is being removed from continuous process operations; however, these remain important in some other forms of production. Team working is perhaps most important in batch production. The use of technology is less, and groups of people need to work co-operatively to ensure smooth changeover between batches. Traditional skills, for example, in baking, are most important in craft operations. However, increasingly, the technical knowledge of food production is required across a range of operations. For example, in continuous production employees operate more effectively if they understand their product and why things are done as they are. In batch production, product knowledge is also growing in importance. Production is more likely to be efficient and of a high quality if employees have some basic understanding of, for example, the cooking and preparation processes.

The main difference in skill needs between the forms of production used in food manufacturing is in the need for technical skills and multi-skilling. These are most important in continuous production and are receiving greater emphasis. Some batch production activities are also beginning to provide operatives with basic maintenance skills.

4.2.5 The Key Importance of Management Skills

A common theme across the majority of our sample was around the need for good management skills, at all levels. The introduction of different forms of work organisation, with an emphasis on team working and devolved responsibility mean that the ability of managers to motivate and develop other employees is crucial. Drives to reduce costs and improve quality were also emphasising the importance of management skills. Furthermore, identifying the need for change and implementing this does rely very much on both the foresight of managers, and their ability to make others see the need for change and take on new ways of working, or whatever is required.

The new role of a team leader was discussed earlier. The skills involved in these roles included not just good production skills, but also being able to take responsibility for production, motivate and develop staff and deal with any staffing issues, including discipline and poor performance. Finding people with this range of skills was proving difficult for some employers, especially as this marked a change with the past. Promotion to supervisory level was often based on seniority and good production skills, rather than the wider 'people skills'.

The devolution of responsibilities also aims to free up more senior managers to deal with strategic issues, rather than day-to-day issues and problems. It requires a change in the skills of these senior managers, who have to become more strategic and let go of day-to-day activities.

4.3 Experience of Recruitment Difficulties

Among production staff our sample was split between establishments which had relatively low levels of turnover who were doing little recruitment and those experiencing high levels of labour turnover and hence recruitment. Many of this latter group reported recruitment difficulties, and these were closely linked to the reasons for high labour turnover.

There were a number of factors contributing to recruitment difficulties. These were rarely operating in isolation from each other. They included:

- **Shift patterns** - in one organisation employees had to work on a Saturday and take a day off during the week. Employees could not have two consecutive days off in a week and this was not popular. Changes in the organisation of production and the introduction of continuous operations was causing difficulties for some employers.

- **Competition from other employers** - there were several examples where a change in pay rates in a nearby factory would impact on the ability to recruit (and on labour turnover). Competition was not always from other food manufacturers. One establishment was experiencing competition from supermarkets for its traditional female employees (the hours are more flexible and working conditions more pleasant). We also have examples where there was little competition in the local labour market, low levels of turnover and little recruitment.

- **Competition from schools** - as the proportion staying on in education has increased, employers aiming to recruit young people have had less choice. It is the young people who had been in trouble at school and not done well academically who were in the market for jobs. These young people rarely fulfil the recruitment criteria set by employers. Furthermore, as a result of staying on, young people are more likely to have some qualifications. This often means that their expectations have been raised, and this can exacerbate recruitment difficulties.

- **The position and reputation of the company locally** - this was often closely related to the level of competition in the local labour market. A number of establishments have a strong reputation locally: for example, as the best payers, as a good employer. This mitigated against labour turnover and recruitment difficulties.

- **Pay** - pay levels are notoriously low in this sector. A number of our sample were beginning to link pay to skills. However, with pressures to keep costs down there was little scope to adjust pay rates to address recruitment difficulties. In one company pay rates were linked to national agreements, and this limited the ability of an establishment located in a tight labour market to make wage rates more comparable with those locally. In addition, in a number of establishments, overtime was being reduced or removed all together. Although this was often negotiated through with more general adjustments to pay and hours, it could impact on the earnings potential of employees. Furthermore, it was often not popular psychologically.

- **The nature of food manufacturing** - many respondents, including representatives of NTOs commented on the poor image of the food industry in general. There can be no doubt that a number of production areas can be unpleasant to work in, and managers acknowledged this.

- **The level of unemployment locally** - the establishments we visited operated in a range of different local labour markets, and the level of unemployment was an important indicator of recruitment difficulties. This is closely related to a number of the points already made. However, as food manufacturing jobs are usually considered to be among some of the least popular jobs available, low levels of unemployment did exacerbate recruitment difficulties.

Recruitment difficulties reported for production jobs were nearly always around inadequate personal attributes and basic skills. Employers are looking for people who have a work ethic ('they turn up' and 'pull their weight'); they are 'team players', who will fit in with others and not be disruptive; people who are interested in the job and in learning. Basic skills are increasingly important, although not always essential. It was against these criteria that employers were struggling to recruit. Indeed, many reported that given the right attitudes and work ethic, the majority of production skills were trainable. Most of these employers had extensive training programmes. Comments of the following nature were made:

'Shop floor skills are all trainable, and by and large do not present problems - as long as people have "something between the ears".'

'We don't want people who leave their brain at the factory gate.'

Another difficulty was in finding people who understand about working in a food environment. Many employers found that people with previous manufacturing experience were more likely to be suitable than those from, for example, an office background. However, working with food products involves particular knowledge of hygiene and health and safety. This was a major driver of training.

Seasonal variations in demand for some products and the use of temporary staff created other recruitment difficulties. Finding people with the appropriate skills at short notice was often difficult. Many companies used agencies. However, there were frequent complaints about the quality of people sent. There were examples of agencies sending people who in no way met the specified criteria. Employers were trying to get round this in a variety of ways. For example, at one establishment, employees were being trained to work across a wider range of functions, and shift patterns had changed. It was planned to maintain a core of permanent employees and reduce the need for temporary staff. Quiet times in production would be used to provide further training and development.

There was evidence of some variation in recruitment difficulties between employers adopting different product strategies. In general, the more emphasis there was on proactively improving quality, innovation and efficiency, rather than for example cost cutting alone, the greater the need for more able recruits and the greater the emphasis on the 'right' work attitude.

There were a number of areas of specific difficulty reported:

- **Team leaders** - the majority of team leader posts were being filled internally. However, where companies had tried to recruit in the external market, difficulties often arose. In particular, there was a shortage of people with the necessary people management and motivational skills. A number of companies were struggling with how to provide their team leaders with the skills to train and coach other employees.

- **Bakers** - there is not the tradition of bakery as a skilled trade anymore. Furthermore, traditional bakers do not always understand the pressures within a factory environment.

- **Managers** - there were some examples of difficulties in recruiting production managers. For example, in one establishment, it had taken ten months to recruit someone suitable. This is partly related to the image of the industry, but also the changing requirements for people in such posts. Managers (and supervisors) play a key role in taking a business forward, including developing and motivating other employees. The greater emphasis on an enabling management style means that it is not always easy to find people who fulfil the criteria and who will fit in to a particular culture.

There were a number of comments made about the negative image of food manufacturing. For production work, although some establishments have good local reputations, conditions can often be unpleasant: for example, cold, noisy, involving a lot of standing. However, respondents reported how some food companies do provide exciting opportunities for professionals, for example in product development and marketing. In a strongly competitive environment and the need to meet, if not influence, customer demands, it is possible that the opportunities within this sector will increase.

Sometimes the image of an individual company could both hamper and facilitate recruitment of appropriate people. For example, several companies were reported to have a safe, paternalistic and traditional image. While this could be a benefit, encouraging people to remain and attracting others, it could also be a hindrance. The people with the necessary attitudes might not be attracted to these companies, but would rather apply to what are perceived to be more go ahead companies.

4.4 Labour Turnover

Labour turnover was a major issue for a number of our companies. High levels of labour turnover contribute to skill deficiencies, in particular through making it more difficult for employers to benefit from any actions taken to address skill issues. The reasons for high turnover were varied, related to the local labour market, conditions within establishments and the availability of alternative employment locally. Two examples are provided overleaf.

Case study example:

One manager reported relatively low turnover (12 per cent) in a more traditional, less complex area, compared to 57 per cent among those working on the computer controlled lines. There were a number of factors in this, including fluctuations in overtime and efforts to control overtime and variations in working time. The ability of employees to cope with the work was only one factor. This company was operating in a tight labour market with plenty of alternative opportunities. They paid reasonably well, but were constrained by national union agreements, tight operating margins, and these being largely low skilled jobs.

Case study example:

At one establishment, labour turnover among production operatives had been running at over 40 per cent. As a result, the company had to recruit 400 staff a year. It was found that turnover was highest among short service young men, especially those on the evening and night shifts. A number of reasons for this were identified, including factors specific to the company, for example: cold conditions, pay, employees not feeling involved in the business, no holiday entitlement for a year and job monotony; and external factors, such as the availability of other employment locally and Family Credit and benefits. Over the following few years a number of these issues were addressed, and there were also major changes in the provision of training. Labour turnover has fallen significantly.

4.5 The Existence of Skill Gaps

In recent years, far greater emphasis has been placed on improving the skills of production employees and in particular their performance at a particular level of skill. For instance we found increasing emphasis on minimising wastage and mistakes. There are a number of reasons behind this. In a few companies, little consideration had been given to the skills needed in production in the past. A company might have been set up on the basis of a good idea which took off. Until competitors move into a market and catch up there may be little pressure to consider the efficiency of an operation. The drive for increased efficiency and other pressures for change outlined in Chapter 2 mean that the skills of employees cannot be ignored. Production usually makes up the largest group in total. It is within this area that cost reductions and improvements in efficiency can often be made: for example, through reducing wastage, removing downtime and improving flexibility. New technologies and ways of working which are introduced to improve efficiency nearly always have skill implications. A number of managers reported that they would be looking for continuous improvement.

We have one continuous production company within our sample which had been taken over by a European company. New managers were brought in who were very critical of the poor level of skill among the British workforce. In particular, few employees had detailed knowledge of the processes and product. There had been a major cultural change in the company, for example, through the introduction of job security and pension schemes:

'We need people who are proud of where they are working and they need to be educated to the right level.'

A major training exercise was being undertaken in team working, product knowledge and process skills. However, it was still felt that operatives in the parent company were more highly skilled. In that country there is a culture of professionalism and longer term training in the industry.

However, it is important to recognise that introducing approaches adopted in other countries might not be appropriate. This study did not conduct any international comparisons and has a limited amount of evidence on relative performance. Among our sample of employers we found evidence of an expansion in the provision of vocational training, and improvements in company and workforce performance. The provision of training was, however, only one factor in improved performance. Updating equipment and changing working practices also played a role. The low level of basic skills among some recruits has been commented on a number of times. Furthermore, the Food and Drink NTO, 1998, also reported how this is a particular problem for UK companies. Food manufacturers in the EU and Japan rarely report poor basic skills among recruits as a problem. Addressing skill issues in Britain requires a much broader approach than the introduction of the types of vocational training systems used in other countries. A cultural shift will be needed, addressing norms about what are skills and skilled jobs, and the educational and training needs of different occupations.

There is, however, no doubt that performance in the British food manufacturing sector has improved in recent decades (see data quoted in Chapter 1). There were many examples in our sample of British managers working to improve the skills of their workforce. Our evidence suggests that much greater attention is being paid to skill issues in food manufacturing compared to in the past. For example, a batch producer was investing in new equipment and making major efforts to train employees to improve their skill levels in their existing job and to increase their flexibility between jobs. There had been a change in the management team and the company had been taken over by a holding company. An initial drive for change was a loss of competitive advantage of this company. However, it was felt that there was demand for the product and it had a distinctive character which it was worth building on.

In general, the stronger the emphasis on higher quality, greater efficiency and innovation, and among employers who were actively attempting to improve performance in these areas, the more likely it was that skill gaps were evident. Difficulties in the area of personal attributes and attitudes were most significant to these employers, key among which were:

- **Reluctance to take responsibility** - responsibility for taking a range of decisions and for making sure everything gets done has been devolved. This usually marked a major cultural change, and employees were often reluctant to take responsibility for tasks they thought managers should deal with.

- **A reluctance to change** - at a few establishments there was a stable long established workforce, who might be reluctant to change the ways in which things had always been done. Suspicion and traditional demarcations could also act as barriers to changes. In another company, the majority of employees were part-time women, balancing work and caring for a family. Many did not want to take on the extra training and hours due to their external responsibilities.

Gaps in technical and maintenance skills were more closely related to the nature of technology used, rather than the strategy being adopted. However, where a greater emphasis was being placed on efficiency and quality, deficiencies in these skills were more likely to be evident. Employers were

beginning to address these gaps. They were however, experiencing some difficulties. It takes time to break down demarcations, both in persuading production employees to take on the new tasks and the engineers to let responsibilities go: *'I wouldn't want most of these people let loose on my machines'.* There were also problems relating to the abilities of some employees to take on these technical skills, and a lack of confidence in their own abilities.

It is important to recognise that some skill deficiencies and production problems are not just due to lack of skills among the current workforce. For example, where there is a legacy of poor or little management, and an attitude: 'anyone can do these jobs' or 'anyone can operate these machines', the skills needed in an establishment had often not been addressed. The lack of managerial skills, including an understanding of the importance of the skills and abilities among employees generally, has contributed to many problems in the past. Senior managers are increasingly recognising this. For example, in one factory the machinery was old and there had been no proper maintenance for some time. New managers were introducing systems to ensure that both immediate breakdowns as well as longer term maintenance were appropriately addressed. This did require some different skills from production employees, but in particular, changes in attitudes of the nature discussed earlier.

Team leader skills were another area of deficiency. Some employers were struggling to move employees away from traditional supervisory roles to a more proactive and enabling management style. Furthermore, managers were having to address prevailing attitudes among existing employees that supervisors were appointed on seniority, rather than purely on ability; moving away from the attitude: 'it's my turn'. Finding employees who combined ability or potential in the range of skills required of a team leader was problematic. In particular, several employers were looking at how they could train team leaders to be trainers.

4.6 Deficiencies in the Future

Current skill deficiencies are only one part of the picture. In the future, the nature of these deficiencies might change as, for example, current employers shift their production strategies, or as there are shifts in the balance of activity within the whole sector. A number of points can be made, based on the evidence collected during the course of this study.

In Chapter 2 various trends affecting the sector were explored and a number of these are likely to have particular implications for future skill needs, namely:

- a continued need to improve skill levels due to ongoing pressures to enhance quality and efficiency and, for poorer performing establishments, the improvements necessary to bring them up to sectoral standards

- changes in the balance of production methods towards batch production as a result of growth in demand for these types of products, and rationalisation in areas of over-supply, mostly involving continuous, mass production

- the development of more sophisticated and computer-controlled technologies, and the need to optimise the utilisation of these.

The skill needs associated with each of these changes is outlined opposite.

On-going change and improvements in performance

The employers we interviewed were nearly all thinking and concerned about skill issues. On the assumption that efficiency, quality and innovation remain important, the skills outlined above (both in the sections on needs and difficulties) will continue to be of considerable importance. The employers at the forefront of these changes, ie who were emphasising high levels of quality, continuous improvement and innovation, will continue to look for higher quality people. Furthermore, to survive in highly competitive markets, it is likely that more employers will begin addressing these issues.

The attitudes and basic skills of recruits will remain an issue; also their abilities to take on more of the vocational skills listed in Section 4.2. For example, team working, taking responsibility, being flexible and having knowledge of the product and production process will be very important in nearly all roles.

Changing patterns of production

Shifts in the balance of activity within the sector are not likely to change the overall emphasis on personal attributes and attitudes. All our employers, whatever they were producing, emphasised these aspects. However, there may be some shifts in the nature of vocational skills needed. The largest growth in recent years has been in specialist, niche markets, with an emphasis on more individual, possibly 'home-made' characteristics. The pre-prepared food market has also grown considerably. Some of these products involve batch and manual skills, rather than being made in a continuous environment. Process technology can be used to make batches of products. However, there will need to be more frequent changes of product which brings with it slightly different skill needs. For example, a greater awareness of the need for cleaning and the possibility of contamination between batches is needed.

Technological developments

Technologies are becoming capable of addressing a wider range of processes, and process technology itself is becoming more sophisticated. Furthermore, the search for ways of gaining a competitive edge, or simply staying in the competition, through increased efficiency, is likely to lead to a focus on the ever more effective use of equipment.

Multi-skilling was not widespread among our sample. Although some managers had dismissed this for the moment, they are likely to revisit it in the future and decide to move in that direction. There was evidence of experimentation and changing working practices over time among our sample. Any shift towards multi-skilling, especially in continuous production operations, will change skill needs. It is not clear that there will be sufficient people with the necessary ability to take on these new ways of working. There was already evidence among our sample of employers struggling to fill such posts. As explained in Section 4.2.3, this is due to poor skills among some existing employees and applicants and more especially to attitudes and reasons for working in the sector. Difficulties in developing multi-skilled employees are therefore not simply a matter of greater commitment to training, but are bound up with cultural values placed on jobs and the perception of their position in the occupational hierarchy.

As technology advances, it is likely that more processes will become mechanised. Existing continuous process equipment may become more computerised and complex; on the other hand technological innovation might simplify its operation. Whatever, the changes it is likely that demands for a more technically able workforce will be maintained and increase. While high level computing skills will not

be required of the majority of workers, there will be a growing need for people who are at least not afraid of working with basic computerised technology. Team leaders are often monitoring production and the meeting of targets. At this level, employees will need, for example, skills in software packages (eg spreadsheets) to record and analyse data.

The overall conclusion is that in the future, a more able and skilled workforce will be sought by food manufacturers. In particular, employers will be looking for people with good basic and generic skills which predispose them to take on the necessary vocational skills. This is partly an issue of education, the preparation of people for work and employer training. Perhaps a greater challenge for employers will be to modify popular perceptions of the industry to the extent that they can recruit and retain the people they really need.

4.7 The Impact of Difficulties and Gaps

Managers rarely reported significant impacts of recruitment problems among production employees. Taking ten months to recruit an operations manager was reported to have a much more significant impact than difficulties in other areas. Similarly, the impact of skill gaps was only immediately obvious in a few cases, and managers did not always report definite impacts.

Specific examples of the impact of recruitment difficulties and skill gaps included:

- the inability to expand into new markets as quickly as wished

- disruptions to the flow of production

- production targets not being met

- higher levels of wastage than wished for.

The main impact reported was that it takes more time to introduce change and address the business strategy. However, managers did not perceive this to be too serious as long as change was achieved, for example, within the next few years.

It seems that these employers accept as a fact of life that they are operating in unsatisfactory labour markets. This does not mean that they are complacent. There was considerable evidence of more effort being put into training and development and a range of other measures to improve the quality of the workforce.

Statistical information referred to in Chapter 1 illustrates significant improvements in labour productivity in food manufacturing in recent decades. Our case study evidence supports this improvement in productivity. This has been achieved partly through increased mechanisation, but also through major efforts being put into improving the efficiency of the workforce. Our assessment is that skill issues, in the broadest sense, are holding some of these companies back. However, many were working with people who were poorly equipped to take on additional/higher level skills and new ways of working, and with employees to whom little attention had been paid in the past. It is this historical legacy and the 'raw material' they are working with which hampers employers. The legacy can only be addressed through internal processes, and this was happening.

It does not appear that the skill needs of higher performing companies are different to those of companies performing less well. However, in higher performing companies greater attention was being paid to developing appropriate skills, and skill gaps were less evident or, at least, were closing. Establishments with more substantial skill gaps exhibit poorer performance, and a major factor in this is the lack of attention paid by managers to workforce skills. Establishments with a more highly skilled workforce do perform better; however this is not enough on its own, other factors also affect performance. The level of demand for a product, the extent of competition, keeping up to date with technology and the adoption of appropriate working practices all play a role.

The relationship between skills and performance is most clearly illustrated using examples of change in establishments overtime. This evidence illustrates how having a skilled workforce is a necessary condition for good performance in the longer term, but not sufficient, ie other factors also play a role. There were several establishments in our sample which had experienced major improvements in performance and there were a number of reasons for this. These establishments were operating in expanding markets and markets in which there was potential for innovation. They had recently been taken over, by companies prepared to invest financially, for example, in up-to-date equipment. In two cases new management teams had been recruited, or promoted. These managers had different skills and attitudes to the previous managers. They tended to be forward looking, experimental, able to manage and motivate people and to see the importance of working with and developing employees. This was very different to the attitudes and skills of previous managers. In all these establishments, major efforts had been put into developing employees. The skills needed in particular roles had been identified, training programmes put in place and employees were being involved in and informed about the changes being made. Changes had also been made in working practices, work organisation and reporting structures. The managers in these companies provided evidence of reduced wastage and higher productivity, reduced employee turnover and, in one case, movement from loss to profit making. From these examples, and more generally comparing cases across the sample, it is clear that having an appropriately skilled workforce does lead to better performance. However, a skilled workforce is not enough on its own. Other conditions also need to be right.

We can also provide examples of companies performing well with a relatively low skilled workforce. However, this evidence does suggest that good performance under such conditions is rarely sustainable in the long term. For example, one company had been set up by two men who had a good idea which took off. The company was initially very successful, trading on the character of the product, it fitting a niche and growing demand in the market. Very little attention was paid to developing appropriate skills in the workforce. However, as competitors entered this market segment, the competitive advantage of being an early entrant declined. This company was adjusting its product market strategy and making major efforts to improve performance and one action being taken was improving the skills of the workforce. Most employees were proving fully capable of taking on these changes and improving their skills. Their low level of skills in the past was as much due to a lack of skills among their managers as a lack of appropriate training.

4.8 Remedying Skill Gaps and Recruitment Difficulties

Measures being used to address skill deficiencies included:

- **The better identification of the skills needed** - managers are being more proactive in identifying the precise skills needed by their operation and articulating this to all employees. For example, in the corridor of one establishment, a matrix listed the broad skill areas needed and employees progress in acquiring these.

- **Paying greater attention to recruitment and selection** - more rigorous selection processes had been introduced; there was less reliance on word-of-mouth to fill vacancies with the greater use of formal advertising. Some employers were working with schools to promote the industry/ company, for example, through providing information on the nature of jobs and the abilities wanted

- **Training and development** - this was being used to improve efficiency, cut costs and increase flexibility; address skill deficiencies; change attitudes; introduce new working practices and technologies and reduce labour turnover. Much of the training provided was in-house and on-the-job, and this was placing emphasis on the role of team leaders and managers as trainers and coaches. Employers were:

  - providing better induction - to ensure that recruits understand the process, the basic rules and what is expected of them

  - addressing the lack of basic skills - this has to be addressed sensitively, without embarrassing anyone involved. It relies on individuals recognising that they have a problem, and creating an environment in which it is acceptable to admit this.

  - working with attitudes and behaviours - for example, through coaching and encouragement; leaving people to take responsibility; creating the environment in which these things happen

  - providing employees with skills across a wider range of tasks, to support the removal of demarcations and job boundaries.

- **Better communication with and involvement of employees** - for example, employees were being provided with more information on the performance of the operation (wastage levels, the meeting of production targets and profit levels) and how they contributed to this. Customer praise and complaints could be used, to reflect on good performance and emphasise the problems of poor performance.

- **Rewarding those who have good skills** - for example, through pay, promotion, extra responsibilities. Using these people to train and develop others.

- **Introducing measures associated with being a good employer** - for example: holiday and sick pay, pensions, involvement in the local community

- **Hours** - a number of employers had altered their shift patterns to better accommodate their skill needs. For example, in one organisation the introduction of annual hours had been attractive and enabled the company to attract a better quality recruit. It has led to lower costs, more efficient manning, more time for training, basic pay rising by 15 to 25 per cent, reduced hours and overtime. Productivity increased from 50 to 75 efficiency levels (the target was 85 per cent), wastage has been cut and there were lower levels of absence and sickness.

- **Severance** - for example, at one establishment where the number of jobs was being reduced, selection for redundancy among those who volunteered was based on attitudes. Those with the 'right' attitudes were encouraged to stay.

- **An emphasis on skills of first line managers** - first line managers play a crucial role in motivating and managing shop floor staff. Those with good people skills, or the potential to develop these are promoted to such positions.

- The introduction of **appraisals** and more formal identification of training needs.

Employers were adopting a wide range of measures to address skill deficiencies. If the HR strategy is right, any skill problem becomes tactical rather than strategic; short-term rather than long-term. These employers did, however, have relatively little control over the quality of applicants for jobs, for reasons rehearsed earlier in this Chapter. They were therefore, having to constantly address deficiencies among employees.

5. Conclusions

Finally we briefly draw together the main themes from our examination of the extent, causes and implications of skill deficiencies in food production.

5.1 Pressures for Change and Product Market Strategies

Food manufacturing companies are operating in highly competitive and changing markets. There are many pressures affecting the sector, including the power of customers, especially the main retailers, changing patterns of demand and the regulatory framework, as well as influences internal to companies. Companies react to these pressures in different ways. Managers make decisions about the most appropriate product market strategies in the light of these pressures and their existing

Product market strategies can be explored through three themes:

- *Being cheaper* - controlling costs receives key emphasis.

- *Being better* - this places an emphasis on quality, whether in terms of the ingredients used, consistency of the product or its presentation.

- *Being first* - developing new products or variations of existing lines.

These strategies influence how companies compete in the market. It is, however, the nature of the product which influences the production method adopted, and it is this which has the main implications for the skills needed of employees. This does not mean that product market strategy has no influence on the skills needed, but rather that these have a lesser impact.

For some products there is a large scale, mass demand, for example, for breakfast cereals, sugar, bread, milk. For these continuous production techniques are adopted. While cost is a prime factor, and this partly influences the nature of production, it is the mass, standard nature of demand which is the main cause. For other products, for example, fresh pre-prepared meals, there is a lower level of demand and demand is more variable. Batch production methods are adopted, which cater for smaller production runs and more frequent changes in ingredients. There is also a growing demand for hand made, home style products, and these are produced using craft and manual methods. Employers were paying greater attention to the most appropriate form of work organisation, the most effective utilisation of technology, and skill implications follow.

5.2 Implications for Skills

The adoption of different production methods has some implications for the skills needed of employees although overall there was remarkable consistency in the demand for skills across producers. Multi-skilling and technical skills were more important among producers adopting continuous process technology. Task flexibility and team working were slightly more important among batch producers.

The product strategies around cost, quality and innovation also have some implications for skills. For example, the greater the emphasis on reducing cost and increasing efficiency, the more important it is that employees are able to operate competently, ie that they are skilled in the jobs they do. The greater the emphasis on quality, the more important it is that employees understand the dimensions of this and have the necessary knowledge and skills to ensure quality. Most companies were, however, adopting elements of all these production strategies, and it is difficult to disentangle the precise implications of each.

There was relative stability in the nature of employers' skill needs. For production operatives, employers are looking for personal attributes and attitudes such as having a positive work ethic, an interest in the job and turning up for work on time; basic skills of literacy and numeracy; generic skills such as the ability to work in teams, flexibility, problem solving and taking responsibility; and elementary technical and vocational skills, for example, understanding food hygiene, quality issues, and health and safety. In some operations, particularly continuous production, there was a growing emphasis on multi-skilling.

In general, employers were paying much greater attention to the skills of their employees. Managers were becoming more demanding and expecting more of their workforce, trying to ensure that employees acquired the skills they needed to do their jobs effectively. The attitudes and behaviours of current and new employees play an important role; these underlie the existing abilities of people in, or their potential to develop, a range of generic and vocational skills. In general our evidence suggests an emphasis on ensuring maximum performance at a given level of skill rather than raising skill levels.

Changes in the skills required of managers play an important role. For change to happen at all managers have to recognise the need for a higher level of, or different, skills, and identify how this can be achieved. Most significant change was occurring where new managers had been brought in, or where existing managers had begun to address shortfalls in their own skills.

5.3 Skill Deficiencies

Many of the skill deficiencies identified related to the attitudes and behaviours of employees. Recruitment difficulties were nearly always related to inadequate personal attributes and poor basic skills. Employers could not find sufficient people who have a work ethic, are team players and who are interested in the work and in learning. Key skill gaps among existing employees related to a reluctance to take responsibility and to change. There were a number of causal factors, some of which are beyond the control of managers. Factors contributing to skill deficiencies included: shift patterns, competition from other employers; competition from schools; levels of pay; working conditions; the image of food manufacturing; and the level of unemployment in various local labour markets. High levels of labour turnover also contribute to skill deficiencies. Employers are constantly having to train up new recruits and losing these skills again.

This sample of employers were adopting a range of measures to address skill deficiencies. They were improving training and development, working with attitudes to motivate and involve employees, trying to improve the attractiveness of jobs and, where possible, rewarding those employees who did adapt and become more skilled. The more effective the HR response is to recruitment difficulties and internal skill shortages, the less of a long term issue these are for employers. However, within food manufacturing there were a range of factors which hindered their achievements. These included the segment of the labour market from which they recruit, the abilities of some employees, the reluctance of some employees (for example, due to non-work responsibilities) to become more involved in their job and take on additional responsibilities and high labour turnover.

5.4 The Impact of Skill Deficiencies and Performance

Managers reported few direct impacts of skill deficiencies. Where impacts were reported they involved an inability to expand quickly into new markets, disruptions to production, production targets not being met and excessive wastage.

However, there was an underlying theme around the need to improve performance. There have been significant improvements in labour productivity in food manufacturing in recent decades, and evidence provided by our case studies is supported by independent statistical evidence. At the same time, many firms have acted to improve the skills of their workforce to help achieve this improvement in performance.

There can be no doubt that skill deficiencies were holding companies back. In many companies, a proportion of employees were poorly equipped to improve their skills and learn new skills. Furthermore, there is a legacy of a lack of training and investment in technology. It is this legacy, as well as segments of the labour markets they recruit from which hold employers back.

However, a more skilled workforce on its own is not enough for better performance. Employers in our sample showing the greatest improvements in performance, on a range of measures, had invested in new equipment, introduced new management teams and approaches and new working practices. An appropriately skilled workforce plays an important role in enabling these changes and in realising their full impact.

Looking to the future, our evidence suggests a continued need for a more able workforce, and this is largely in relation to basic and generic skills. It is these skills and abilities which predispose people to take on the necessary vocational skills. There is some evidence of a greater need for technical skills, and that this might be difficult to meet. However, this is often due to the perceived nature of jobs in food manufacturing and their general ranking. We have no evidence that existing training programmes among employers will be unsuccessful, as long as appropriate managerial attitudes and the necessary basic and generic skills are in place.

BIBLIOGRAPHY

Dench S (1999), *Skills and Training Needs in West London's Food Manufacturing Sector,* Food Sector Briefing Paper No. 3, West London Training and Enterprise Council

Ennew C, McDonald S, Morgan W, Strak J (1995), 'Overview of the UK Food and Drink Industry' in *The UK Food and Drink Industry. A sector by sector economic and statistical analysis,* Strak J and Morgan W (eds), Euro PA and Associates

Food and Drink NTO (1998), *International Benchmarking of the Food and Drink Manufacturing Industry. Measuring Success,* A study sponsored by DTI and MAFF, London: F&DNTO

Giles L, Kodz J, Evans C (1997), *Productive Skills for Process Operatives,* IES Report 336

DTI Foresight (1999), *Progress Through Partnership: Food and Drink First Panel Report,* Foresight for Food and Drink, www.foresight.gov.uk

Harvey M (1999), *Innovation and Competition in UK Supermarkets,* Briefing Paper No. 3, ESRC Centre for Research on Innovation and Competition (CRIC), University of Manchester

ONS (1999), *Annual Abstract of Statistics,* A publication of the Government Statistical Service, The Stationary Office, London

O'Mahoney M (1999), *Britain's Productivity Performance* 1950-1996. *An International Perspective,* National Institute of Economic and Social Research, London

NATIONAL SKILLS TASK FORCE RESEARCH PUBLICATIONS

SKT 29   Skills for all: Research Report of the National Skills Task Force

Employers Skill Survey

SKT 30   Employers Skill Survey: Existing Survey Evidence and its use in the Analysis of Skill Deficiencies
SKT 31   Employers Skill Survey: Statistical Report
SKT 32   Employers Skill Survey: Case Study Report - Banking, Finance and Insurance
SKT 33   Employers Skill Survey: Case Study Report - Engineering
SKT 34   Employers Skill Survey: Case Study Report - Food Manufacturing
SKT 35   Employers Skill Survey: Case Study Report - Health and Social Care
SKT 36   Employers Skill Survey: Case Study Report - Hospitality
SKT 37   Employers Skill Survey: Case Study Report - Local and Central Government
SKT 38   Employers Skill Survey: Case Study Report - Telecommunications

Skills Task Force Research Papers

SKT 6   Anticipating Future Skill Needs: Can it be Done? Does it Need to be Done?
SKT 7   The Dynamics of Decision Making in the Sphere of Skills' Formation
SKT 8   Management Skills
SKT 9   Intermediate Level Skills - How are they changing?
SKT 10   Jungle Trekking: Vocational Courses and Qualifications for Young People
SKT 11   The Leisure Sector
SKT 12   Engineering Skills Formation in Britain: Cyclical and Structural Issues
SKT 13   The Market Value of Generic Skills
SKT 14   Employment Prospects and Skill Needs in the Banking, Finance and Insurance Sector
SKT 15   New Technology Industries
SKT 16   Funding Systems and their Impact on Skills
SKT 17   Skills Requirements in the Creative Industries
SKT 18   Skills Issues in Small and Medium Sized Enterprises
SKT 19   Spatial Skill Variations: their extent and implications
SKT 20   Employers' Attitude to Training
SKT 21   Skills Issues in Other Business Services - Professional Services
SKT 22   Science Skills Issues
SKT 23   Empirical Evidence of Management Skills in the UK
SKT 24   Monitoring and measuring occupational change: the development of SOC2000

Information Technology, Communications and Electronics Skills Strategy Group Reports

SKT 25   Skills for the information age: Final report from the Information Technology, Communications and Electronics Skills Strategy Group
SKT 25E   Skills for the Information Age: Final report form the Information Technology, Communications and Electronic Skills Strategy Group - Executive Summary

Other Reports

SKT 3   Mind the Gap - includes CD-ROM
SKT 4   Mind the Gap

Copies of these reports are available free of charge (quoting the appropriate SKT reference) from:

Prolog

Prolog
PO Box 5050
Sudbury
Suffolk
CO10 6YJ

Tel: 0845 60 222 60
Fax: 0845 60 333 60

These reports and others in the series are also available on the world wide web at:

www.dfee.gov.uk/skillsforce

Notes

Notes

Notes

DfEE

**Department for
Education and Employment**

INVESTOR IN PEOPLE