# CHAPTER 2

# The Organisation of the Product Development Project

## 2.1 Introduction

The Product Development Process is the basis from which the project is planned and organised systematically. From the business strategy, the company develops the product strategy and hence the product development strategy. This is the basis for the planning of the individual product development projects. At the beginning of each project, the aim of the project is set and confirmed by management so that it fits with the company's business and marketing strategies. It is the integration of the business strategy and the individual project which often gives problems in organising and controlling the project.

The top management give a clear mission to the project and also set the criteria they will apply as measures in the evaluation of the outcomes at the various stages. They also give a clear description of the culture/philosophy of the company, including the risk climate they will tolerate and the company positioning. They define the company 'fit' expected for the product, production, marketing, finance. There has to be clear indication of resources, including the capital, available for the development and for the commercialisation.
The management needs to outline for the project team:

1. business strategy relating to the project;
2. product strategy relating to the project;
3. product development strategy relating to the project;
4. information required for the decision-making at the end of each stage;
5. company resources and constraints on the project.

The product development project coordinates the decisions, outcomes, activities and techniques from the first stage, product strategy development, to the end of the third stage, product commercialisation. Essentially there is a group of people, a team, which picks up the outline of the project from the top management group and eventually hands it on to the operating departments of the company. This interrelationship of the team with management and operating departments varies from company to company, and even project to project. Marketing can tell research to develop a specific product in the laboratory, and then the remainder of the development is handed onto marketing and production. At the other end of the organisational spectrum, a multidiscipline project team is organised which carries the project to the final commercialisation or even through the launch to the post-launch. Companies have many variations between these two extremes. There needs to be coordination between individual people in different parts of the company and teams are the best option in the larger companies. The team can be fixed from the beginning of the project or it can be a fluid organisation with people changing over time, but there needs to be a continuous knowledge build up.

The project team will develop the aims, objectives and the constraints for the project. The ***project aim*** is the start of every project and sets the direction of a project - a clear definition lessens confusions and difficulties during the project. The outcomes desired by management are developed into ***project objectives*** for various parts of the project. If management also want to set limits on the project, these are identified at the beginning of the project as ***project constraints***. The aim, objectives and constraints are all confirmed by management before the project starts. It is important to ensure the connections of the product development project to both the 'blue-skies' research and also the inventions which come from the researchers' interpretations of the advances of science. This comes through the business strategy to the product strategy and the product development strategy and hence to the individual product development project.

## 2.2 Project Plan

The first step is to write an outline plan for the project. As shown in Figure 2.1, planning the product development project is directly related to the company policy and therefore to

the people determining the company policy.

**Figure 2.1 Planning the product development project**

| PROJECT PLANNING | | COMPANY ENVIRONMENT |
|---|---|---|
| **Business Strategy** | ⇔ | **Company policy** |
| ↓ | | |
| **Product Strategy** | | |
| ↓ | | |
| **Product Development Programme** | | |
| ↓ | | |
| **Specific Product Development Project** | | |
| **Project Aim** | | |
| **Project Constraints** | ← | **Company conditions** |
| **Project Objectives** | ← | **Decisions to be made**<br>**Outcomes for decisions** |
| ↓ | | |
| **Project Activities** | ← | **Activities for outcomes** |
| **Project Techniques** | ← | **Resources**<br>**Timing**<br>**Company knowledge** |
| ↓ | | |
| **Project Plan** | ← | **Planning methods** |
| **Project Management** | ← | **Management systems** |

A company policy which states that company growth is through amalgamations and takeovers is not much interested in product development and is not going to provide much resource for product development; a company policy to launch a major innovation every year is the opposite. Company policy is also directed by the environment, the resources available to the company and the knowledge in the company. In Case Study 2, the company has a policy to change milk from a single commodity product into multiple consumer products, and on this policy were based the specific product development projects, some based on changing the packaging and some involving both packaging and product changes.

## *Case Study 2.*

**Reintroducing Milk to Consumers**

Dean Foods Co. is hoping to turn milk into a cash cow. In an effort to pump new life into an old product, Dean is adding new packaging, new products and a $30 million marketing campaign to convince people that milk can be a cool beverage.

Just as Birds Eye did with frozen vegetables, Dean wants to make milk something more than a cheap commodity. One way is to combine new products with clever packaging. For example, the company is introducing a blue-ice freezer pack with six-packs of milk so people can carry cold milk to work or school. And six-packs, pints and quarts are packaged in bottles called chugs: lightweight plastic designed like old-fashioned milk bottles but with resealable twist-off caps.

Adding more flavours in more places also helps, as brands such as Tropicana and Snapple have found with juice and tea drinks. Dean's chocolate milk in new chug bottles has enjoyed brisk sales. It plans to introduce strawberry within the next few weeks and possibly banana after that.

'Dean is offering consumers choice and convenience,' says Adri Boudewyn, chief executive of the California Milk Advisory Board which represents farmers.

The new packaging which was introduced last year allows it to charge higher prices. The chug concept also has won the company new customers in the rapidly consolidating supermarket industry. Dean's milk volume increased 5%, an enviable growth rate in an industry marked by stagnation. The milk push comes as consumption has been declining for much of the past five years, although last year saw a slight uptick, thanks to the popular 'Got Milk?' ad campaign by Dairy Management Inc. Dean hopes to increase the consumption not just by packaging changes, but by distributing chugs to places like convenience stores and school-vending machines.

(*Source:* Balu, R. (1998) 'Dean Foods attempts to reintroduce milk to consumers', in *Wall Street Journal*, 26 March B3. Reprinted by permission of *The Wall Street Journal* © 1998 Dow Jones & Company Inc. All Rights Reserved Worldwide.)

The team takes the general project description defined in the product strategy and the product development strategy, and determines the aim and constraints for the specific project. After top management confirmation of aim and constraints and agreement on the decisions and therefore the expected outcomes at the various stages, the team can identify the project's objectives and activities. The team plans the project - describing the early activities in some detail and the later activities in general headings, but defining clearly the intended outcomes of the different activities and the decisions to be made. There is agreement on the timing of the project and the resources available, and the team then decides on the techniques to be used for the various activities.

The plan details how the project is to be managed in the team, and by top management; both need to be clearly shown so that the responsibilities of each are known and acknowledged by both groups. Planning can vary from a sheet of paper in a small company, to a complex report for a major innovation for a large company, but the most important factor is that everyone understands the project and its organisation, and agrees to the plan.

### *Think Break 2.1*
***Project plan: recognising nutritional value***

The company policy is the directing influence on the plan for the product development project as can be seen in Case Study 2. As the years have gone by nutrition has become an important part of the policy of dairy companies.
Discuss how the product development team can develop an overall product development plan based on recognising and improving the nutritional value of milk, in particular identifying the needs of different groups of consumers.
Visit a supermarket and identify the dairy products being sold for their nutritional value. How would the range of products already on the market affect your product development plan?

## 2.3 Project aim, objectives and constraints

At the beginning of the project, the team identifies where they are going overall, what they are to achieve at different times in the project, and what are the restrictions on the project. All the people involved in the project discuss and decide on the aim, the objectives and the constraints.

### 2.3.1 *Aim*

The aim of the project is the ultimate outcome desired at the end of the project by the top management of the company. The aim is definite and not vague, straightforward and not complex, specific and not general. The aim is recognised by all people involved in the project, both in the project team and in the operational and management departments in the company. Therefore it must mean the same to all people and cannot be interpreted by different people in different ways. It is used as a guide in planning and decision-making, therefore it is focused but still broad enough to allow for creative thinking. Statements such as 'increase the profit by 30%', 'use up the slack production', 'a product for the food service market' are too vague, and statements such as 'identical to the competitor's product' or 'protein increased to 40%, but do not change the product' are too narrow.

***Example 2.1 Overall aim for a PD project: to develop a tomato product***

To develop a canned tomato product, using low acid tomatoes, suitable for the British hotel catering market, processed on the present canning line with minor adaption, of a volume to increase production by 20%.

Example 2.1 clearly states type of product, general target market, method of processing, raw material, type of plant available and size of the market needed. Sometimes, the processing is not specified because the aim of the project is to study several different types of processing, or the target market is not specified because the aim is to study a few markets and select the most promising. Any general aims such as ‘to diversify production’ or ‘build up an export market’ or ‘compete more effectively on the market’ are focused through the development of the business strategy, the product strategy and the product

development strategy and then tied into the aim of the specific project. The aim is a most important step - a mistake in the aim can lead a project into a completely wrong direction.

***Think Break 2.2***
***Project aim: building aims for health foods and processed pet foods***

Discuss how you would build an aim for the following product development projects:

- A health food company, which is at present producing and marketing diet foods, wishes to introduce a diet food for teenagers;
- A processed meat company has decided to enter the pet food market by introducing a new dog food, a sausage from beef offal and meat off-cuts.

### 2.3.2 *Objectives*

Objectives are the goals for the different parts of the project, and are built up from the major outcomes and decisions at the ends of the four stages, and also from the outcomes and decisions identified within the stages. Some outcomes already identified in Chapter 1 are product design specifications, project evaluation, target market definition, financial outcomes and risk, which are all major objectives identified by management and are in every project. There are other specific objectives which are important for a project as can be seen in Example 2.2.

***Example 2.2 Specific objectives for a PD project: dried fish for Nigeria***

In developing a dried fish product for the Nigerian consumer market, four specific objectives were:

- comparison of competing dried fish products on the Nigerian market;
- process for drying fish in high volumes;
- market potential for dried fish in Nigeria in the next five years;
- comparison of fish deboning equipment as to yields, costs, quality;

It is important not to have too many objectives; only those objectives which are fundamental to the project and whose completion is necessary for the project are detailed. Sorting out the objectives at the beginning of the project ensures identification of the

objectives that are important to the company and its environment, and for which company management is willing to provide money and time.

***Think Break 2.3***
***Project objectives: common objectives for all projects***

From Chapter 1, identify objectives which are common to all PD projects, because they must be achieved as the outcomes are necessary for top management to make informed go/no-go decisions

### 2.3.3 *Constraints*

Constraints are any factors which define the area of the project, and usually fall within product, processing, marketing, finance, company and environment. Some examples are shown in Table 2.1.

**Table 2.1 Constraints on the product development project**

| Product | Processing | Marketing | Financial | Company | Environment |
|---|---|---|---|---|---|
| Eating quality | Equipment | Channels | Fixed capital | Strategy | Local government |
| Composition | Capacity | Distribution | Working capital | Structure | National government |
| Nutrition | Raw materials | Prices | Investment | Expertise, knowledge | Industry agreements |
| Packaging | Wastes | Promotion, advertising | Project finance | Location | Farmers' agreements |
| Shelf life | Energy | Competitors | Cash flows | Management | Economic Status |
| Use | Water | Size | Profits | Innovation policy | Business cycle |
| Safety | Personnel | Product mix | Returns | Size | Social restrictions |

There are also organisational constraints for example, ***time*** - there is a time to launch every product, and therefore a time when the development process has to be completed. There are often ***people*** constraints; for example, the market researcher may only be available between January and March.

***Example 2.3 Constraints of a PD project: dried fish for Nigeria***

Constraints for the dried fish project in Nigeria were:

- *product constraints:* contains more than 60% fish, have a storage life of at least 12 months and contains no preservatives;
- *processing constraints:* solar drying, capacity 13 tonnes per day, no solid waste;
- *marketing constraints:* only ambient storage and transport, retail price less than 60 cents per 100g pack;
- *financial constraints:* $200,000 maximum for project, profit margin more than 10%;
- *company constraints:* no bacteriologist, no fishing boats;
- *environmental constraints:* 10% import duty; 20% inflation in Nigerian currency in three months.

It is important to study carefully all the constraints - are they valid? are they needed? If the constraints are very tight, then the opportunity for creativity is reduced; in the example, for instance, having no bacteriologist means that fermented products would be difficult - but perhaps the company could employ a bacteriologist if fermented dried fish were an attractive product for the market. The constraints are used in the product screening and project evaluation, so they need to be as specific and quantitative as possible; for example, not 'high in fish' but 'fish over 60%' makes screening much easier.

An example of aims, objectives and constraints is shown in Example 2.4

***Example 2.4 Aims, objectives and constraints: canned abalone exported to Hong Kong***

**1. Aim**

To develop a canned product incorporating abalone pieces and so extend the product range of Goodfood Ltd, a small Australian canning company, for the Hong Kong market.

**2. Objectives**

2.1 Identify the products and methods of consumption of abalone in Hong Kong.
2.2 Investigate the market potential of canned abalone products in Hong Kong.
2.3 Identify the specific market segment for the product: caterers, large households, working couples.
2.4 Define a suitable product concept for development.
2.5 Formulate a product that will meet the need of the chosen market segment.
2.6 Assemble, specify and test a process to produce the product.
2.7 Assess the consumer acceptance of the product.
2.8 Prepare definitive costs and price range for the product.
2.9 Plan the market strategy for the final product.

**3. Constraints**

3.1 Product, processing and company constraints

- The product must be canned.
- The product must be manufactured using the existing processing facilities.
- The product shall preferably contain raw materials readily available to the company.

3.2 Marketing constraints

- The product shall be distributed through the usual company marketing channels.
- The product shall be marketed in Hong Kong as a canned abalone type product.

3.3 Environmental constraints

- The product must comply with the Food Regulations of Hong Kong.

3.4 Financial constraints

- No capital investment shall be made on any new equipment.
- $200,000 working capital will be available to launch the product.

## 2.4 Selecting the activities and techniques

The objectives have been defined, and now the activities to produce the outcomes implicit in these objectives need to be identified. For example, the objective was to have a comparison of dried fish products on the Nigerian market; this needs some market research, but what type of market research? The choice of activities is not only determined by the results needed and the accuracy of the results, but also by how much resources and how much time is available. The description of the activity defines the ***outcome*** expected, the ***timeframe*** to be met and the ***resources*** that can be used. In market and consumer research, it is customary to have a research brief and then a research proposal; the brief sets out what the outcome is to be, and then the proposal details the type of research, its accuracy, the time and the costs. In the product design process, product design specifications are provided, the times and resources available determined and then the design proposal developed which outlines the design procedure and its time and cost frame. This combination of brief and proposal could be used for other activities in order to set appropriate targets, to communicate these clearly to the persons responsible and to get commitments from these persons to achieve the outcomes.

Many activities were identified in Chapter 1 in the various stages; they can be broadly divided into product, consumer, production (processing) and distribution, marketing and finance. They are often interconnected and it is often more useful to group the various activities into strands according to the outcome that has to be reached. For example, the initial technical and market studies are connected with the product idea generation and screening which is connected with the development of the product concept. It is often useful to look at the outcome from the black box, and then decide what activities are needed for this outcome and the techniques to be used.

But the question is - what activities? This is directed by the knowledge, resources and time available, and also by the techniques which can be used. For example, there may be many product ideas already in the company, so the product idea generation will not involve many people in brainstorming groups, but one or two people categorising the ideas already available; or a gap in the market may have been identified and the product ideas have to be

specific to the gap and idea generation is done by a small group of consumers. In other projects, the consumer needs are studied with consumers in focus groups and ideas developed in the groups. Other times, it is a technological development that is pushing the product development, and the ideas for using the technology come from a brainstorming group of technologists and marketers. Figure 2.2 lists some of the activities, outcomes, techniques in product concept development.

**Figure 2.2 Relating outcomes, activities and techniques in product concept development**

| **Activities** | | **OUTCOMES** |
|---|---|---|
| Product idea generation<br>Consumer studies<br>Market study<br>Product idea screening<br>Product concept development | ➔ | PRODUCT CONCEPT |

| **Activities** | ***Techniques*** |
|---|---|
| Product idea generation | *Brainstorming*<br>*Product morphology* |
| Consumer studies | *Focus groups*<br>*Consumer surveys* |
| Market study | *Retail audits*<br>*Market channel survey* |
| Product idea screening | *Checklist screening*<br>*Probability screening* |
| Product concept development | *Product attribute analysis*<br>*Consumer groups* |

In some companies, the same activities are used for every project but they may not be suitable. For example, the activities can be different for consumer, industrial and food service products because of the different relationships between product, supplier and buyer; there is usually minimal interaction between the consumer and the company in consumer product development but in food service the product is developed by the buyer (the chef) and the supplier together.

The interactions are:

| | | | |
|---|---|---|---|
| **Consumer** | Consumer | ⇔ | Product |
| **Industrial** | Supplier | ⇔ | Buyer |
| | ⇕ | | ⇕ |
| | Industrial product | | |
| **Food service** | Supplier ⇔ Food service product ⇔Buyer | | |

The activity and the techniques are related to type of product, buyer/product/supplier relationship, level of innovation and technology available, as well as the knowledge and skills of the individual and the team. For example, if the team is not mathematical, they will use neither linear programming in product formulation nor multi-dimensional scaling in consumer research. The activity delivers the outcome and is efficient and reliable within the knowledge base and the resources.

### *Think Break 2.4*
***Identifying activities in the project: new yoghurt products***

Identify seven possible activities in designing three yoghurt product prototypes each with a different fruit flavour and detail the outcomes expected. (If this is a problem, read Chapter 1 again for general areas of product design, and for a quick introduction to yoghurt products see http:/www.foodsci.uoguelph.ca/dairyedu/yogurt.html, and for more ideas, Pszczola, D.E., (2008) What's Yonder for Yoghurt, *Food Technology*, 62 (3), 45 – 54). Score each activity according to:

- its ability to deliver the outcome
- the time it will take
- the resources it needs
- its reliability

on a scale from poor to excellent; for example, poor for time would be months and excellent a week.

Select the combination of activities that will give the highest score but ensure a satisfactory outcome.

Study this combination of activities and decide if you or the company have the skills and knowledge to successfully carry out these activities.

## 2.5 Project planning and timing

Because of the many activities occurring in a product development project, there is a need for overall coordination in a project plan. A comprehensive activity/time plan with regular reviews is an essential feature of the product development project. The complexity of this plan depends on the size of the project and on the background and skills of the personnel, and can vary from a one-page outline to a complex computer designed system with a major plan and a large number of sub-plans. But the essential steps are:

- Identify the product development activities.
- Estimate the time required for each activity.
- Arrange activities in sequence, showing the interrelationships.
- Allocate resources - people, finance, equipment, materials.

Usually the overall activities are identified and then the people working in a specific area can identify the sub-activities in their own part of the project. Each activity has to be small enough to be carried out independently of other activities, but not so small as to be trivial. Activities less than one week are usually not considered as independent activities.

To the person coordinating a project, the management of the product development project plan can be assisted by use of formal planning aids such as bar charts (or job progress bar charts) and critical path networks and computer software packages for complex project planning. These techniques identify the start/finish time for each activity and determine the sequence of the activities and the activities that can run in parallel. With this information, logical flow diagrams and bar charts can be drawn and from these are identified the sequence of activities that are critical to the project timing. If these activities are not completed at the correct time, then the whole project will run over time. It is essential that these critical activities are identified at the beginning of the project, and also that, during the project, any activities going critical are identified quickly. These critical activities may need more resources of people and finance, or just reorganisation.

The procedure starts by developing a plan which satisfies the project objectives given the essential constraints while ignoring time and resources, listing all the major activities and if

necessary the sub-activities in a logical sequence; this is called ***project planning.*** The variables of time and expertise are then applied to the project plan and this is called ***project scheduling***. Then as the project proceeds it is monitored and remedial actions identified; this is called ***project control***. It is important to have clearly identified the critical points where top management is to review the project and give go/no-go decisions.

***Think Break 2.5***
***Project planning: development of a dried noodle product***

The simple process for producing dried noodles is: ***mix*** the flour and water, extrude the dough through a plate to give the ribbon of noodle, and then dry. In developing a new, high-protein noodle, the process was studied. There was no production line, so an extruder and a dryer had to be bought or built. The texture of the extruded dough and the noodles during drying were to be measured, and a tester to measure the texture had to be built. The development of the noodle product involved the following activities in the process development section of the project:

- *develop texture tester* (design tester, make tester, standardise tester);
- *obtain dough extruder* (literature search, purchase and delivery of extruder, installation and commissioning);
- *build dryer* (drying cabinet converted, drying racks made, racks fixed in cabinet, cabinet wired);
- *trial* (experiments on conditions, testing products, optimise process).

Determine the sequence of the activities, what activity must be completed before others can start, and the activities that can run in parallel. Draw a sketch to show the activities.

## 2.6 Project management

The project plan is the basis for management of the project, but it needs to be combined with the management of human resources, physical resources, financial resources, and project quality.

### *2.6.1 Human resources*

People are the basis for successful product development; the knowledge, skills, creativity, enthusiasm and motivation of the project personnel give the project its impetus to lead to a successful conclusion. Product development is a multi-disciplinary activity, needing a wide variety of knowledge and skills at different times in the project. The problem is that there are sometimes wide differences in philosophy and beliefs between the people educated and working in different disciplines. The engineers want quantitative, accurate information to make a decision, but the marketers want to move quickly and not wait for accurate information. The marketers often believe that they know the market and that they should dictate the direction for the project without any concern for the technical aspects. The product designers are willing to take risks in design; the engineers want as little risk as possible. There are often conflicts between marketing and other functional areas in the company, the marketers looking at the outside environment and the others tending to look at the internal company environment.

Product development management need to overcome these divisions by good communication and agreed direction, and avoid dominance by any group. There needs to be a balance between marketing and technical aspects: too strong marketing can lead to product improvements, me-too products and few innovations; too strong technical dominance can lead to products not wanted by the market. Since product development spans many disciplines, it must not get locked into one “image” of what it is.

Technical achievements of the individuals are important, though staff are seldom selected for their creative and successful product development. The staff must have an understanding of the consumer and the market, as well as the process and the product; they need to be innovative and creative, but all should have the ability to drive the project to a commercial conclusion. The company may not have the necessary skills and knowledge and will employ consultants to do parts of the project for example market research companies to do consumer research, engineering consultants to design equipment. It is important that the outside experts are also coordinated into the team. Forming this team is a prime responsibility of management.

Most important are the ***communication*** linkages, the formal reporting channels and the functional inter-department channels of communication for daily working. Any organisation will require:

- one person to lead the project who has the responsibility and also the skills to carry the project to a successful end;
- support staff for the leader, to do the work in the project.

Whatever the structure, successful product development requires a balance between management and innovation. Over-management can stifle innovation, but uncontrolled development can lead to inappropriate products and the higher probability of commercial failures.

### *2.6.2 Physical resources*

The tools - space, equipment, raw materials, computers - must be to hand or become available. The project is sometimes restricted as regards equipment and this can stifle major new developments. Important are the knowledge resources – today likely on-line though library availability is still important. The knowledge data bases need to include company information and knowledge.

### *2.6.3Financial resources*

For product development, finances need to be planned and controlled. Budgeting does not have to be complex to be good. One straightforward approach is to take each activity in the plan and look at its resource requirement on a monthly basis, and so build up a schedule of expenditure. Total expenditure for each activity can be predicted, but then it is useful to develop monthly expenditures for cash flow purposes and for control of expenditure. Product development is an area where there is need for control of costs because they can rapidly escalate. Use of graphs of cumulative expenditure, actual against budget, can be very informative.

Capital costs, particularly in the later stages of the project, can become significant, especially if the product is an innovation. They would normally feature in the capital budget associated with the project, or if the project is in the commercialisation stage they

may be in the budget of one of the functional departments. They should not be overlooked when planning the project, or in calculating the total project cost.

There need to be cost forecasts for the project where the costs are broken down into the main activities, so that the balance of the costs in the project can be checked. Surprisingly this is not always done in industry and there can be a complete imbalance between the costs of the market research and the costs of the technical research, depending on the dominance of the functional areas in the product development team.

### *2.6.4 Project quality*

This is ensured by having planned and systematic actions included in the company's total quality management (TQM). The ISO 9001 model for quality assurance details the system for design/development as well as production, installation and servicing. This is published by the International Organisation for Standardisation (ISO) and was updated in 2008 (ISO-9001:2008). There are also standards put out by national organisations for product design.

## 2.7 Technology diffusion

The diffusion of information through the company needs to be encouraged if the project is to be successful, particularly in product commercialisation and product launch. This means company involvement throughout the project:

- Participation in review meetings of marketing, product development, production, engineering and perhaps the advertising agency, so that product concepts, attributes and consumer expectations can be established and refined as the project proceeds.
- Increasing involvement of production, quality assurance and marketing personnel in the third and fourth stages, as they are gradually taking on the responsibility for the project.
- Organising specific training or familiarisation sessions for production and sales personnel, developing procedures for the new or modified process, and advising merchandising staff about the product features.
- Developing production specifications, quality assurance programmes and marketing strategies. Development of these methods and controls prior to production and

marketing necessarily involves the product development staff and the people who will produce the product to ensure a seamless transfer from one group to the other.

## 2.8 Summary

It is clear that successful product development first requires the decisions, outcomes and activities to be developed into a logical flow plan of activities and critical control points. This can lead to predicted timings and resources so that a monthly plan can be developed which can be used to control the quality, time and costs of the project. There is also a need for management commitment, development of a suitable management and communication structure, and recruitment of creative, skilled and knowledgeable personnel. An integrated, managed approach to product development, relating product development, marketing, finance and production, will provide a better chance of achieving overall goals and commercial or socio-economic targets. Product development success and project management are inextricably linked; they must be properly balanced for a successful venture.

## 2.9 Suggested readings

Allen, A.H. (1995) 'Designing for the world? Get the facts first', *Food Product Design,* May, 28-50.

Cannon, T. (1992) 'Patterns of innovation and development in the food chain', *British Food Journal,* 94 (6), 10-16.

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Ramujan, V. and Mensch, G.O. (1985) 'Improving the strategy - innovation link', *Journal of Product Innovation Management,* 2(4), 213-23.

**Some more recent readings**

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Neff, E. (2008) Product design, process development and manufacturing – a roadmap for the technologist. Chapter 18 *Case studies in food product development*, by Earle M. and Earle R. (Eds.) Cambridge, Woodhead.

Pooch, D. (2008) 'Synlait-making more from milk', *Food New Zealand*, 8(6), 10-14.

Van Kleef, E. and Trijp, H.C.M. (2007) Opportunity identification in new product development and innovation in food product development" in *Consumer-led food product development*, by MacFie, H. (Ed.) Cambridge, Woodhead.

Wilson, E. (2007) 'Working together works' *Food New Zealand*, 7(7), 18-20.

## *Project Break 2*

For either your company's P.D. Project that you started on Chapter 1, or Project 2 at the end of the chapter:

- Set the aims, objectives and constraints so that they show a clear direction for the project within the framework of the company's strategies and resources.
- Identify the activities for the PD Project in Stages 1 and 2 of the Product Development Process.
- Organise the activities in the sequence of doing them.

## *Project 2: Take-Away Lamb*

A major Australian meat company has decided to develop a lamb product for the fast-food market. At the time, there are no lamb products sold by a major take-away chain such as McDonald's but they are sold through ethnic restaurants. The company thinks that such a product would not only fill a definite gap in the Australian fast-food market but could be exported to Europe.

- The company does not want to start a fast-food chain and would prefer to sell the product to an established chain or chains. If necessary, they might go into a joint venture with a catering company in a new take-away fast-food company that would only serve lamb products.
- The raw material can be any sheep meat from an animal less than two years of age.
- The company has facilities for cutting lamb, deboning, mincing, flaking, chopping, mixing, forming sausages, moulding and vacuum filling. They would like to use the present equipment and not buy any major equipment. In the present plant, they can have a throughput of lamb cuts of 25 tonnes per day and 10 tonnes of smallgoods such as sausages and hamburgers. The company has blast freezers and cold storage and would prefer that the product was frozen. This would even out production and product could be supplied quickly to the fast-food outlets as it was needed.
- The product must be suitable for take-away cooking and serving: cook in five minutes, easily packed to take away, not messy to eat.
- The company does not want to invest more than $1.5 million in this project.

The company already sells chops, roasts and sausages to restaurants and catering institutions in Australia. These are sold as 'fresh' products and are distributed daily. They do not sell any branded retail products and do not supply supermarkets. They sell frozen lamb cuts to Britain in cartons which are sold through meat wholesalers.