

# AGRICULTURE BUSINESS PLANNING

## Chapter 12

### Selling and Defining a New Product Design

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#### Lecture Overview

- What is a new product?
- Models of new product development

#### **Introduction to this chapter:**

Selling of each group is still running until this week. Thus, in this chapter every group will present the selling information during the last week.

The lecture today is going to discuss about the new product design. This is due to the number of information collected about the customer feedbacks and the potential market identified. There have to be some innovation to develop your existing products, or you have to create a slightly different product in order to gain more profit. As the seller, you should try to adjust the product favoured by the customer and your potential customer.

#### **What is a New Product?**

Product is a multidimensional concept. It can be defined differently and can take many forms. Some dimensions will be tangible product features and others intangible. Does the provision of different packaging for a product constitute a new product? Surely the answer is no – or is it? New packaging, coupled with additional marketing effort, especially in terms of marketing communications, can help to reposition a product.

If we accept that a product has many dimensions, then it must follow that it is theoretically possible to label a product ‘new’ merely by altering one of the dimensions, for example packaging.

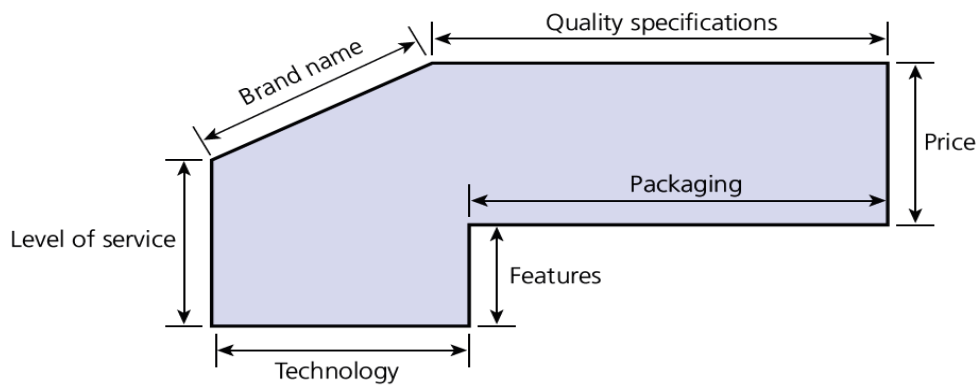


Figure 1. A Product is Multidimensional

Table 1 A new product has different interpretations of new.

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**New product A**

A snack manufacturer introduces a new, larger pack size for its best-selling savoury snack. Consumer research for the company revealed that a family-size pack would generate additional sales without cannibalising existing sales of the standard-size pack.

**New product B**

An electronics company introduces a new miniature compact disc player. The company has further developed its existing compact disc product and is now able to offer a much lighter and smaller version.

**New product C**

A pharmaceutical company introduces a new prescription drug for ulcer treatment. Following eight years of laboratory research and three years of clinical trials, the company recently has received approval from the government's medical authorities to launch its new ulcer drug.

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Research in this area suggests that only 10 per cent of new products introduced are new to both the market and the company. New to the company means that the firm has not sold this type of product before, but other firms could have. New to the market means that the product has not appeared before in the market.

The three products in the Table 1 are all new in that they did not exist before. However, many would argue, especially technologists, that product A does not contain any new technology. Similarly, product B does not contain any new technology, although its configuration may be new. Product C contains a new patented chemical formulation, hence this is the only truly new product. Marketers would, however,

contend that all three products are new, simply because they did not previously exist. Moreover, meeting the needs of the customer and offering products that are wanted is more important than whether a product represents a scientific breakthrough. Such arguments are common to many companies, especially those that have both a strong commercial and technological presence and expertise.

### *Classification of new products*

There have been many attempts to classify new products into certain categories. Very often, the distinction between one category and another is one of degree and attempting to classify products is subject to judgement. It is worthy of note, however, that only 10 per cent of all new products are truly innovative. These products involve the greatest risk because they are new to both the company and the marketplace. Most new product activity is devoted to improving existing products. At Sony, 80 per cent of new product activity is undertaken to modify and improve the company's existing products. The following classification identifies the commonly accepted categories of new product developments.

#### *(1) New-to-the-world products*

These represent a small proportion of all new products introduced. They are the first of their kind and create a new market. They are inventions that usually contain a significant development in technology, such as a new discovery, or manipulate existing technology in a very different way, leading to revolutionary new designs, such as Dyson's vacuum cleaner. Other examples include Apple's iPad, 3M's Post-it Notes and Guinness's 'in-can' system.

#### *(2) New product lines (new to the firm)*

Although not new to the marketplace, these products are new to the particular company. They provide an opportunity for the company to enter an established market for the first time. For example, Google, Sony and Microsoft have all entered the smartphone market to compete with market leaders Apple and Samsung.

#### *(3) Additions to existing lines (line additions)*

This category is a subset of new product lines above. The distinction is that, whilst the company already has a line of products in this market, the product is significantly different from the present product offering, but not so different that it

is a new line. The distinction between this category and the former is one of degree. For example, Hewlett-Packard's colour ink-jet printer was an addition to its established line of ink-jet printers.

*(4) Improvements and revisions to existing products*

These new products are replacements of existing products in a firm's product line. For example, Hewlett-Packard's ink-jet printer has received numerous modifications over time and, with each revision, performance and reliability have been improved. Also, manufacturing cost reductions can be introduced, providing increased added value. This classification represents a significant proportion of all new product introductions.

*(5) Cost reductions*

This category of products may not be viewed as new from a marketing perspective, largely because they offer no new benefits to the consumer other than possibly reduced costs. From the firm's perspective, however, they may be very significant. The ability to offer similar performance whilst reducing production costs provides enormous added-value potential. Indeed, frequently it is this category of new product that can produce the greatest financial rewards for the firm. Improved manufacturing processes and the use of different materials are key contributing factors. The effect may be to reduce the number of moving parts or use more cost-effective materials. The difference between this category and the improvement category is, simply, that a cost reduction may not result in a product improvement.

*(6) Repositioning*

These new products are, essentially, the discovery of new applications for existing products. This has as much to do with consumer perception and branding as technical development. This is, nonetheless, an important category. Following the medical science discovery that aspirin thins blood, for example, the product has been repositioned from an analgesic to an over-the-counter remedy for blood clots and one that may help to prevent strokes and heart attacks. In practice, most of the projects in a firm's portfolio are improvements to products already on the market, additions to existing lines (**line extensions**) and products new to the firm, but already manufactured by competitors (new product lines). Figure 2 illustrates the

average project portfolio within firms. Here, 70 per cent of new products are improvements, cost reductions and additions to existing lines.

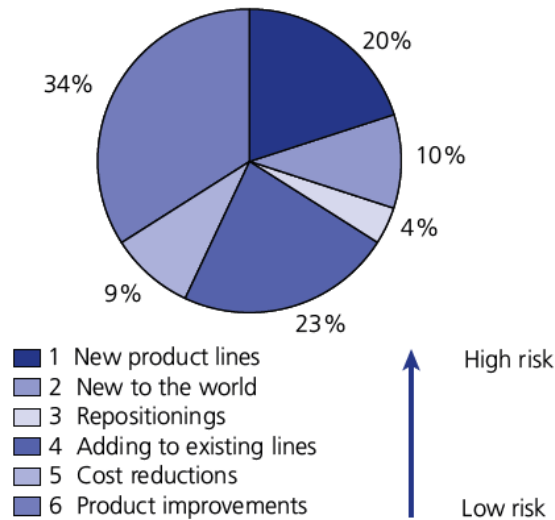


Figure 2. The average new product portfolio

### Models of New Product Development

The classification of the numerous models into eight distinct categories:

1. departmental-stage models;
2. activity-stage models and concurrent engineering;
3. cross-functional models (teams);
4. decision-stage models;
5. conversion-process models;
6. response models;
7. network models; and
8. outsourced

#### 1. Departmental-stage models

Departmental-stage models represent the early form of NPD models. These can be shown to be based around the linear model of innovation, where each department is responsible for certain tasks. Usually, they are represented in the following way.

- R&D provides the interesting technical ideas;

- the engineering department will then take the ideas and develop possible prototypes;
- the manufacturing department will explore possible ways to produce a viable product capable of mass manufacture
- the marketing department will be brought in to plan and conduct the launch.

Such models are also referred to as ‘over-the-wall’ models, so called because departments would carry out their tasks before throwing the project over the wall to the next department.

## 2. Activity-stage models and concurrent engineering

These are similar to departmental-stage models but, because they emphasise activities conducted, they provide a better representation of reality. They also facilitate iteration of the activities through the use of feedback loops, something that the departmental-stage models do not. Activity-stage models, however, have also received fierce criticism for perpetuating the ‘over-the-wall’ phenomenon.

## 3. Cross-functional models (teams)

Common problems that occur within the product development process revolve around communications between different departments. This problem, specifically with regard to the marketing and the R&D departments. In addition, projects frequently would be passed back and forth between functions. Moreover, at each interface, the project would undergo increased changes, hence lengthening the product development process. The cross-functional teams (CFT) approach removes many of these limitations by having a dedicated project team representing people from a variety of functions. The use of cross-functional teams requires a fundamental modification to an organisation’s structure. In particular, it places emphasis on the use of project management and interdisciplinary teams.

## 4. Decision-stage models

Decision-stage models represent the new product development process as a series of decisions that need to be taken in order to progress the project. Like the activity-stage models, many of these models also facilitate iteration through the use of

feedback loops. However, a criticism of these models is that such feedback is implicit rather than explicit. The importance of the interaction between functions cannot be stressed enough – the use of feedback loops helps to emphasise this.

#### 5. Conversion-process models

As the name suggests, conversion-process models view new product development as numerous inputs into a 'black box' where they are converted into an output. For example, the inputs could be customer requirements, technical ideas and manufacturing capability and the output would be the product. The concept of a variety of information inputs leading to a new product is difficult to criticise, but the lack of detail elsewhere is the biggest limitation of such models.

#### 6. Response models

Response models are based on the work of Becker and Whistler on 1967 who used a behaviourist approach to analyse change. In particular, these models focus on the individual's or organisation's response to a new project proposal or new idea. This approach has revealed additional factors that influence the decision to accept or reject new product proposals, especially at the screening stage.

#### 7. Network models

Essentially, network models emphasise the external linkages coupled with the internal activities that have been shown to contribute to successful product development. There is substantial evidence to suggest that external linkages can facilitate additional knowledge flows into the organisation, thereby enhancing the product development process. These models suggest that NPD should be viewed as a knowledge- accumulation process that requires inputs from a wide variety of sources. The model in Figure 3 helps to highlight the accumulation of knowledge over time. This may be thought of as a snowball gaining in size as it rolls down a snow-covered mountain.

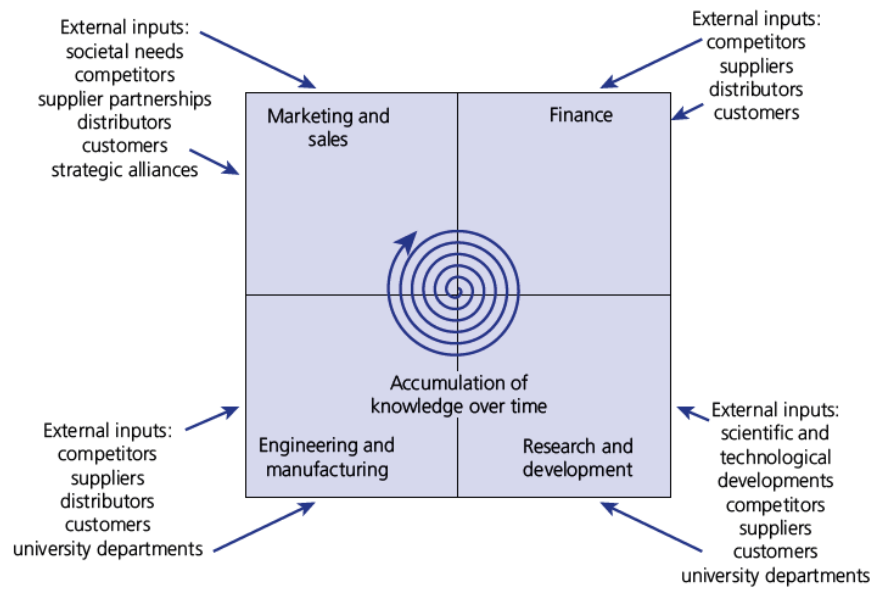


Figure 3. A network model of new product development

## Reference

This lecture note is adopted from

Trott, P. (2017). Models of new product development. In R. Gear (Ed.), *Innovation Management and New Product Development* (6th ed.) Page 480-515. Pearson Education Limited.