



# Product Development & Process Design

---

## Summary

Developing new, value-added food products is a time-consuming and expensive undertaking that can entail a great deal of market risk. Familiarity with the various types of product development, such as repositioning, reformulating, and line extension, as well as the various development and design phases, such as feasibility, costing, and prototyping, can lead to successful product development.

---

## Key Issues

Value-added food products are raw or pre-processed commodities whose value has been increased through the addition of ingredients or processes that make them more attractive to the buyer and/or more readily usable by the consumer.

About 15,000 new value-added products are introduced each year. However, the failure rate is as high as 90 percent. The average time spent on developing new food products is about two years. Larger companies rely on a product development team that includes food scientists, food engineers, and marketing experts.

For smaller companies, the challenge is to develop a network of experts and resources that can serve as a virtual product development team. Food product development involves more than just coming up with a winning prototype recipe. It also includes those steps or processes by which the product will be made for commercial sale. Many universities with food science and technology programs offer specialized services to private businesses.

Product development is not limited to creating new and unique food items. It also includes product repositioning, line extension, and reformulating existing products. Every type of product development consists of five stages: screening, feasibility, costing, prototyping/test marketing, and commercialization.

---

## Definition of Terms

During screening the food product concept is subjected to abstract scrutiny. You will need to answer a set of questions including: who will use the product? What is the competition? Where will it be sold? What will the price be? Who will buy it? Why will they buy it?



Feasibility: involves regulatory issues, technology, and money. Generally, manufactured food that does not cross state lines is regulated at the state level, typically by a state's Department of Agriculture. Local health departments may also provide licensing and regulation. For foods distributed across state lines, the manufacturing comes under FDA or USDA jurisdiction. Potential food processors will also need to consider issues of ingredient sourcing, facility location and design, packaging and processing equipment, and distribution strategies.

Costing: is another significant part of the feasibility process. Costing takes into account the cost of ingredients and packaging (referred to the cost of goods sold, or COGS), as well as the labor required to produce the product. A detailed cost analysis is crucial BEFORE beginning commercial manufacturing.

Prototyping: is the product development stage that precedes commercial production. Preferably, a new business can find a licensed facility where the recipe can be batched to larger sizes, before purchasing new equipment or investing in a production space. Time-share kitchens, as well as university pilot labs, are two affordable locations where recipes can be tweaked and adjusted. Documentation of all processing steps and controls is critical at this stage.

Test marketing: an integral part of the prototyping stage, involves limited distribution of the new product to select stores and end consumers. Processors should stay in touch with store managers and evaluate how well the product is selling. Questionnaires and focus groups are both good ways to monitor consumers' reactions to the product.

Commercialization: involves the full-scale production of the final formulation, with end-design packaging. Two options exist at this point: 1) self production, or 2) co-packing. Co-packing is a contractual agreement between a certified food processor and the business owner, whereby the developed product is manufactured according to formula for the buyer. Many food entrepreneurs use co-packers so that their energies and time can be freed to focus on marketing, business planning, and continued product development.

---

## **Print Resources**

*Reference Guide for Kansas Food Processors*

*Starting a Shared Use Kitchen Incubator*

*New Food Product Development: From Concept to Marketplace*

*The Entrepreneur's Guide to Commercial Food Production*

*National Food Processors Association Packaging Yearbook*



*Packaging Alternatives for Food Processors*

*Establishing a Share-Use Commercial Kitchen* , Ch. 7: "Marketing Specialty Foods" (available through the National Business Incubator Association's bookstore. Visit their web page at [www.nbia.org](http://www.nbia.org))

Look for these book titles at your public library or local bookstore. All books are also available through online booksellers, such as [amazon.com](http://amazon.com).

---

**Web Resources**

**North Carolina State Extension's Food Safety**

<http://www.ces.ncsu.edu/depts/foodsci/agentinfo/>

**Food Consultant's Group**

<http://www.foodconsultants.com/index.html>