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A Comparative Case Study of Two
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Agricultural Economics Staff Paper # 384
June 1998

Timothy Woods and Aslihan Demiralay

University of Kentucky
Department of Agricultural Economics
400 Charles E. Barnhart Bldg.
Lexington, KY 40546-0276

Phone: 859-257-5762

Fax: 859-323-1913

<http://www.uky.edu/Ag/AgEcon/>

Timothy Woods may be contacted by e-mail at tawoods@uky.edu.

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An Examination of New Food Product Development Processes: A Comparative Case Study of Two Hazelnut Candy Manufacturers¹

Timothy Woods and Aslihan Demiralay²

Background

This paper provides an overview of some of the recent trends in new product development within the food industry. A discussion is presented on new product development (NPD) systems, including performance targets and system design issues and theories. A case study is finally presented that compares new product development approaches between two hazelnut candy manufacturing firms that have taken rather different tracks. A summary of the case emphasizes some of the important differences and suggests several promising streams of future research for agricultural economists in this area.

New Food Products - Key Trends

The introduction of thousands of new food products each year into retail consumer markets has become the expectation of U.S. consumers. Food manufacturers have been generating new products and line extensions at an amazing pace in an effort to retain retail shelf space and a share of the consumer's food dollar. New retail food product introductions expanded annually from around 5,500 in 1985 to 16,900 in 1995 before tapering off slightly in 1996 and 1997 (Food Marketing Institute, 1997). Figure 1 documents this growth, highlighting the candy/gum/chocolate category as one of the fast-moving classes of food products.

Figure 1



¹ This paper was presented at the WRCC-72 Regional Research on Agribusiness and Competitiveness annual meeting in Las Vegas, NV, June 10-12, 1998

² The authors are assistant professor and research assistant in the Agricultural Economics Department at the University of Kentucky.

Several factors have been identified as driving forces behind this pace of new introductions. On the demand side, the demand for greater convenience, healthier and safer products, special dietary considerations, product variety, and other product features have been buoyed by greater disposable incomes. On the supply side, retailers have grown their capacity to handle more products, manage categories, and generally become more responsive to even slight changes in consumer preferences through innovations such as EDI, ECR, category management, and customer loyalty programs (Kahn and McAlister, 1997).

Consumers have a tremendous range of alternatives in their shopping experience, almost to the point of being overwhelmed. Couponing, merchandising, and advertising of new food products have kept pace with the number of new introductions. The introduction of new food products has become a strategic tool employed by manufacturers to gain or retain prime shelf space. Product life cycles for these new products are remarkably short, with industry sources estimating 96% of these new products are no longer on the shelf after one year of their release (Toops, 1996).

Changes in the retail environment, intensified competition between food manufacturers, and shorter product life cycles have raised the importance of focus on new product development (NPD) efficiency. Increasing or changing development costs associated with a variety of regulatory and internal research activities have similarly heightened interest in NPD. Science and technology have changed the manufacturing capabilities in a way that makes R&D investment decisions very complicated.

The NPD process can present an image of a treadmill to food manufacturers, who may wonder whether they are capturing the returns to their massive R&D investments. Growth in the total food marketing bill in the U.S., however, has maintained a steady pace since the mid-1980s, growing in nominal value by nearly 60% over the last 10 years (Woods). While this does not necessarily guarantee that R&D bills are being covered, clearly new products and services are being identified, produced, and delivered for which consumers are willing to pay.

Defining New Products

It is probably constructive at this point to clarify some of the terms and concepts inherent to most discussions relating to new products. Research in this area has been going on for decades, and certain terminology has emerged that is recognized by industry and NPD researchers. The 12,400 new food products introduced in 1997 range from truly innovative and different products to only slight reformulations. There are degrees of newness.

New products can fall in any one of three general categories: a product not previously produced by the company but exists in the market, a product presented to a new market, or a totally new product to the marketplace. These basic definitions have been modified or expanded by several authors in an attempt to bring some conceptual clarity to the research and practice of new product development.

Fuller (1994) categorizes the range of new products as *line extensions, repositioned existing products, new forms of existing products, reformulation of existing products, new packaging of existing products, innovative products and creative products.*

Line extensions require typically fewer financial resources and less time to be developed. Companies, aware and responsive to customer needs and wants, are considered market-driven companies. They demonstrate their responsiveness to the customer wants by applying line extensions.

Repositioned-existing products are a newly packaged and labeled form of existing products promoted through new advertising strategies. Purchases of both manufacturing and packaging equipment is necessary to be able to introduce new forms of existing products. An improvement in the modified product is supposed to cater to the consumer’s changing tastes and preferences or it will not be successful.

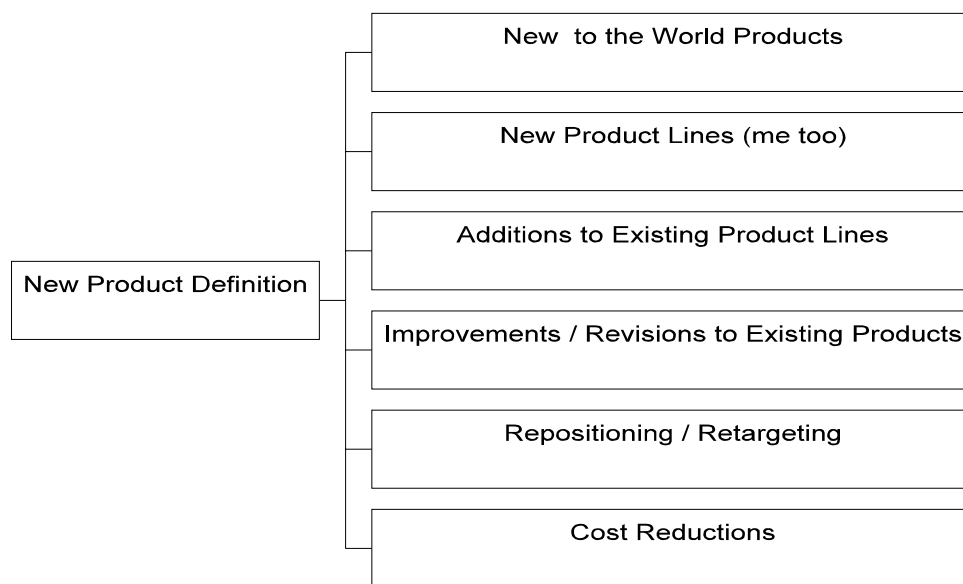
There are many reasons for a firm to *reformulate the existing product*. Raw material of the existing product may be limited or not available, or there may be a cheaper competitor product challenging the existing product. Reformulation may allow the use of pricing strategies to compete with substitute products. Improved stability, enhanced functionality, and refined texture make a product more desirable to the customer. Value-added products, an example of reformulated products, have a high degree of desirability among customers, and usually act to increase the profit margin for firms.

Creative products carry a high risk of failure. Developers of the creative product spend extensive time and money to develop the product and market it, and oftentimes, others enter the market offering similar products and take advantage of the efforts made by the original developers.

Robert Cooper (1993), as summarized in Figure 2, categorizes new products as follows: *new to the world products, new product lines, additions to existing product lines, improvements and revisions to existing products, and repositioning and cost reductions*.

Figure 2

New to the world types of products are produced by the company for the first time with no existing satisfactory substitutes produced by competitors in the marketplace. They create a new



Source: Cooper, R.G. “Winning at New Products: Accelerating the Process from Idea to Launch”

market in the marketplace. These are real innovations and can be considered as creative products as defined by Fuller.

With *new product lines*, which are also called “*me-too*” *products*, a company enters an established market with a product that is new to the company but not to the marketplace. By making *additions to existing product lines*, a firm can produce a product which is fairly new to the marketplace. *Revisions of existing products*, as in the category of new forms of existing products given by Fuller, are aimed at improving the existing product and also given better value to the customer than the existing product.

Repositioning is different from Fuller’s category of repositioned existing products. According to Cooper and Marshall, repositioning or *retargeting* occurs when firms enter a new market segment with the old product.

Cost reduction products allow a firm to reduce the cost of the product, but still provide the same benefits that the old, existing product has provided to the customer.

Innovation represents another commonly considered dimension to NPD. Kleinschmidt and Cooper’s study (1991) of 195 new product cases found that 30.2 percent of the cases were *highly innovative products*, including new-to-the-world and new product lines to the company. 47.2 percent of the cases were new lines to the firm, but not new to the market and new items in the existing product lines for firms. These type of products were called *moderately innovative products*, whereas modifications to existing products, redesigned products and repositionings are considered *low innovative products*. Low innovative products constituted the 22.6 percent of the cases studied by Kleinschmidt and Cooper (1991).

Dimancescu and Dwenger (1996) categorized new products into four classes. They are basically the same definitions provided earlier, but with the new names. *Breakthroughs*, similar to new-to-the-world products, are the ones that will leapfrog the competition. Product created by adding new features into an existing product or same product produced by the company that has reduced manufacturing cost, is called *incremental*. A *derivative* is a product that has additions on the product that is already in the marketplace. Finally, *customized* product is produced to meet unique customer requirements.

An interesting new products taxonomy is further suggested by Poolton and Barclay (1998) that maps products over two dimensions; the degree of complexity of the internal product structure and the degree of complexity associated with the product-user interface. Different NPD systems are necessary, depending on where in this product-complexity space companies are developing their products.

NPD Performance Targets

What does a company want to get, or what should it reasonably expect out of it’s new product development efforts? How can it determine if the R&D investment is paying off? Most companies are trying to balance speed, efficiency, innovation, and limited resources to deliver products that fit within the company’s mission and strategy and yield sustained profits.

Measuring the performance of a NPD process becomes rather complicated when trying to be comprehensive in the scope of true benefits and costs. A successful new introduction can potentially lift the tide of all the firm's products currently on the market and create opportunities for extensions for years down the road. The extent to which the new product accrues benefits to the firm, however, depends on the strategic reaction of rival firms and their product development. It is conceivable, for example, under conditions of intense competition and rapid adjustment to new roll outs by competitors, that a new product may only maintain the previously observed market share. Is the product a "successful" introduction in this instance? It is difficult to discern without measuring some long term ROI that would include first-mover advantage (Chandler, 1990) and spill-over benefits into parallel products or extensions (Adler, et al, 1996), which can be substantial and ubiquitous.

The complexity of practically measuring this process is underscored by the wide range of financial and non-financial criteria variously employed (if measured at all!) by even the larger companies (Page, 1993). Page's survey of 189 companies throughout North America, presumably "practitioner members" of the Product Development Management Association (PDMA), indicated that 23.3% used a ROI measure - the most frequently cited financial measure of about 12 possibilities, and 30.7% using some non-financial measure of sales performance - the most frequently cited non-financial measure out of 7 possibilities. Griffin and Page compiled a list of 75 different measures that are employed among these PDMA companies (Griffin and Page, 1993).

An amazing amount of money is spent on NPD and yet frequency of failure is still high. Each product's unique characteristics, market situation, complex cross-product relationships, ranging life cycles, and distinctive company objectives and strategy all suggest a range or portfolio of measures to be more appropriate. Page's 189 PDMA companies averaged only 2 performance measures.

There is a lot at stake in terms of launch timing. NPD systems that can improve both the speed of introduction and the likelihood of market acceptance will play a major role in helping a food company sustain competitive advantage. Firms must therefore take a closer look at their NPD system performance measures and go beyond the simplistic R&D dollars per new product developed.

At the very least NPD systems should be measured for speed and efficiency (see, for example Takeuchi, Robertson, 1993).³ Management can support these performance measures with a variety of financial measures. R&D spending decisions should be driven by both the objective to create more new products and the objective of making the NPD system more effective. A portfolio of products is often involved and NPD efforts needed to strategically extend brand equity or leverage a product champion

Designing NPD Systems

Generic descriptions of NPD systems that map out (and in many cases seem to prescribe) key components have been drafted by many. Figure 3 presents a system outlined by Cooper (1993).

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A great quote attributed to a Hitachi executive reflecting on their NPD process and the importance of timing - *"speed is god and time is the devil."* Robertson quotes George Stalk, Jr. from the Boston Consulting Group saying *"As a strategic weapon, time is the equivalent of money, productivity, quality, even innovation"*.

While such efforts may provide a useful initial framework for considering what activities ought to be involved, the structure, reward system, and activity emphasis must be also developed.⁴

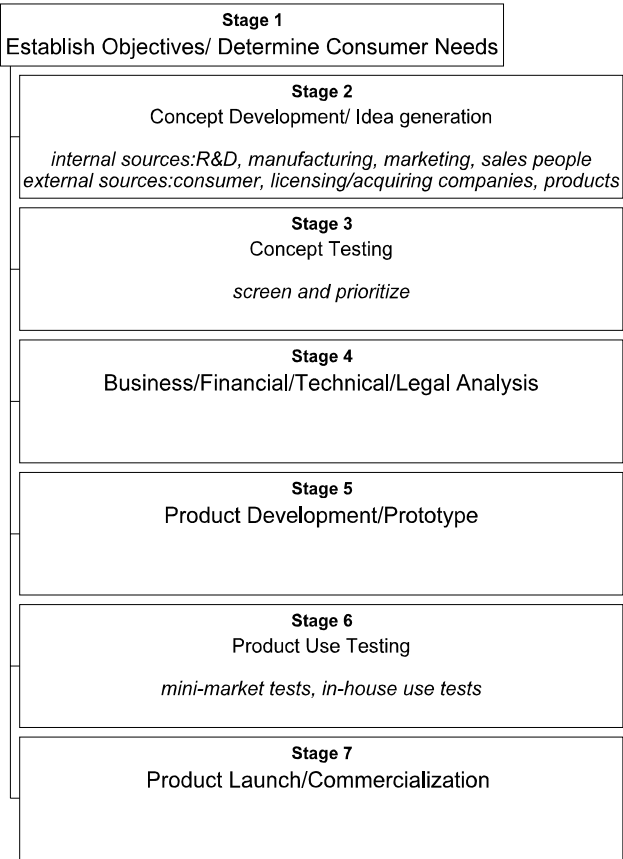


Figure 3

There has been wide ranging discussion on designing NPD systems to be more effective. The lament expressed by Bessant and Francis (1996) as they examined the telecommunications industry certainly applies to food and other sectors as well. Specifically, there is too much unstructured and uncontrolled NPD activity. Much discussion has subsequently focused on better designs for NPD systems. Page’s PDMA survey was mostly a description of what leading firms were doing, but was part of a broader research agenda that was described as PDMA’s Best Practices Study. System prescriptions echoed by Page and many others include more parallel processing, better system

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Page takes this activity mapping one step further by surveying the 189 PDMA firms to determine how many months were spent on average for each activity. An inquiry that would explore emphasis differences between food and other industries would be most revealing and perhaps provide a slightly more useful benchmark for food companies.

performance measurements, introducing innovative compensation to NPD teams or individuals⁵, and employing cross-functional or multi-disciplinary teams.

Additional generic prescriptions for improving a firm's NPD design have been suggested, including co-product development (Adler, et al, 1996), formalized feedback mechanisms (Spivey, et al, 1997), and developing a company-wide culture of innovation (Poolton and Barclay, 1998). Selecting an appropriate management structure that will effectively govern the NPD process must also be considered. A single management system will rarely be equally effective for a range of different products, and the best management system will be different for different companies. Olson, et al (1995) suggest a matrix of management considerations, mapping key functions of the NPD process against a continuum of hierarchical to autonomous governance structures that could direct the NPD system. Their premise is that flexibility in the NPD management system, choosing a system appropriate to the products and markets targeted, can be a key ingredient to success and should be explicitly considered along with any R&D budgetary discussions.

Bessant and Francis (1996) summarize over a wide literature to propose seven best practices, guidelines that every firm should strive to build or maintain. These include:

- systematic process for progressing new products
- early involvement of all relevant functions
- overlapping/parallel working
- appropriate management structures
- cross-functional team working
- advanced support tools
- learning and continuous improvement

While such BMPs can generally be defended in most NDP systems, NPD consultants are not about to go out of business anytime soon. No system is a perfect fit for every company. Furthermore, what worked for a company developing one product may not be at all appropriate for a different product. Unique resources (human and otherwise), customers and markets, product history, and strategic intent will lead to system designs that need to be flexible and learning.⁶

An interesting trend in the food and agribusiness community is the role of outsourcing and strategic alliances in the new product development process.⁷ One can only anticipate that NPD

5

See, for example, an interesting article by Leptien (1995) on various incentive systems offered by German firms to employed inventors and some of the legal difficulties both within the German system and the U.S.

6

Gordon et al (1995) highlight three basic misconceptions about NPD, traps many firms fall into. They include (1) inter-firm transferability: "*it worked there; it will work here*", (2) intertemporal transferability: "*it worked once; it will work again*", and (3) process fixity: "*we've always done it this way and we don't have the resources to change*".

7

Westgren and Sonka (1997), for example, presented the case of Monsanto and Posilac, where Monsanto partnered with a variety of other firms to develop and deliver of bundle of product features to the target customer group, farmers, of which Monsanto is the principal provider of only selected dimensions. The final product/service package ultimately delivered was derived through NPD across firms. Is this the direction NDP systems will ultimately evolve?

systems will gain more attention. Emphasis on innovation in general tends more toward processes and less on products as an industry matures. The number of truly new food products is dwindling in this crowded field. ECR and scanner-based supply-chain efforts between retailers and food manufacturers will continue to lead to harder scrutiny of new products. Poor performing new products are more easily identified and weeded out.

New Product Development and Marketing Strategies: Hazelnut Candies

A case study is presented here that examines and contrasts the NPD process of two hazelnut candy manufacturers. These two firms, Columbia Empire Farms and Ulker, are different in many ways, but illustrate in their own ways many of the issues involved in designing a new product development system for a food product.

Columbia Empire Farms Inc. / NutWorld

Dr. R. B. Pamplin Jr. is the owner and chairman of Columbia Empire Farms Inc., located in Oregon. Information about Columbia Empire Farms was been obtained from a series of structured interviews with Floyd Aylor, president of NutWorld, a wholly-owned subsidiary of CEF under which the hazelnut operation is directed. NutWorld's mission statement was given by Mr. Aylor,

“to process and market 100 percent of NutWorld's products grown as a value added product. In doing so we attempt to maximize profit and minimize cost.”

Mr. Aylor also provided their statement of objectives as,

“Be able to retail the total production of hazelnuts and fruit. We have established ourselves as a leader. We are the only grower marketing products in this fashion or to this degree.”

NutWorld is a vertically integrated company, growing the hazelnuts, then processing and packaging, and ultimately distributing and retailing new hazelnut products to the marketplace through another subsidiary of CEF, Your NorthWest. Their explanation for being vertically integrated is that in the world market, the only way to make it is to vertically integrate. They make bulk sales through their brokers and they also sell the products through mail order, the internet, and their Your NorthWest retail outlets. This retail outlet exclusively sells products only grown and produced in the northwest U.S. and has recently developed a new label for their products. They sell primarily CEF products, including hazelnut candies, but also have marketing agreements with other manufacturers of complementary products produced in the northwest.

CEF has four managers in the manufacturing department, two managers are responsible for the wholesale business, five managers for retail sales, and ten people working in the sales force. They could not provide exact annual sales information, but they estimated they made approximately \$75,000 worth of sales.

CEF is in the process of expanding by opening new retail outlets at the large, prestigious malls throughout the northwest. They are planning to open five new retail outlets in 1998 and by doing so, they are expecting to increase their retail sales to \$1-1.2 million a year. There used to be a company called Native Oregon in that area with a similar local-products marketing concept. Native Oregon went through organizational changes, and ultimately shut down many of their retail outlets. CEF hired a number of their former employees and has been aggressively expanding into their vacated

locations. Many new product and merchandising ideas have been brought over to CES by these former employees, according to Mr. Aylor.

CEF has moved into wholesaling, selling their CES brand products through brokers throughout the western U.S. They are also putting some of their preserves up under a private label branding arrangement with Costco, a west coast company emphasizing lower priced products.

CEF has a very loosely organized new product development process. They have tried to be innovative in drawing on expertise from Oregon State University food scientists who have helped with shelf life testing, spreadability, and new fruit-based products.

Packaging and label development were identified as important parts of the product development process. They have spent freely hiring professional artists to design their labels and web site. These were deemed critical ingredients for success when targeting high-income consumers with a high value products.

Mr. Aylor felt that CEF had a reasonably effective NPD system in place that allowed them to keep a focus on complementary products. There appears to be a good synergy between the fruit and nut products. They have attracted a lot of new product concepts to their Your NorthWest stores with which they have been able to effectively cross merchandise their products.

CEF Berry and Hazelnut Production Process

The CEF NPD system begins with the efforts they take at maintaining a unique production system for the generation of their raw products. Columbia Empire Farms is currently growing 500,000 to 750,000 pounds of blueberries, 800,000 pounds red raspberries and 1,400,000 pounds strawberries per year on their 800 acres of farm. They say that “successful farming takes more than rain”. They also have bees in hundreds of hives to pollinate their berry crops, which helps them to grow big crops. Bees leave them “a tip in the bargain”. Each hive is producing more than 150 pounds of sweet Oregon honey - sold through Your NorthWest, of course. They replant every four years which gives them a vigorous productive plant. They use modern agricultural products to control weeds, insects and fungus. The same pickers come to the farm every year. Columbia Empire provides them free housing, which they consider the best and the newest camp in Oregon. Their production process is highly automated.

Workers pick the berries and process them, putting them in a freezer within four to eight hours. The quick freezing process helps the fruit to retain flavor and also provides a processed berries which tastes like it is fresh from the farm. Processed berries are frozen and ready for ice cream, pie and preserves. Columbia Empire Farms itself sells preserves in jar in their retail outlets and through mail order.

When berry season is over, hazelnut season starts. NutWorld, as a division of Columbia Empire Farms, is responsible for hazelnut production and processing. Columbia Empire Farms bought NutWorld in 1978. NutWorld had been existence for 25 years prior to this purchase. At the time of the initial purchase, NutWorld had marketed all kind of nuts. They decided after the acquisition to focus only on producing and selling hazelnuts and by-products.

They get 160,000 pounds of kernels from their 200 acre orchard. It usually takes 7 years for a hazelnut tree to produce a commercial crop, but since they irrigate their all acreage, the first crop

comes in about five years. Hazelnuts grow only in new wood. Therefore, they prune half the wood in each tree in one row out of seven every seven years. The management objective is to always have hazelnuts for their customers. They pick the hazelnuts from trees, and bring them to the processing plant. They wash the hazelnuts, dry them for one day with a propane hydrator drier, size, crack and grade them.

Whole/broken hazelnuts go to bakers who use them for cakes. Whole hazelnuts, which are roasted, salted, and smoke flavored, go principally to ice creams, nut packs and candies. They melt chocolate and put it on the hazelnuts. Chocolate covered hazelnuts go through an air conditioned tunnel and they are ready for packaging process. The whole process accelerated during the summer in order to have product ready for the Christmas retailing season.

The evolution of new products since acquisition by CEF, particularly for retail sales, has been closely tied to the path of other CEF products and have been designed with a view toward fitting into the broader market and distribution channels of their new companion products. New product design and launch strategies have been crafted in a similar way to the fruit products, drawing on local food scientists, artists, packaging designers, and merchandisers. It is the objective of CEF that the NutWorld products “fit” their larger marketing strategy.

Hazelnut Candy Marketplace

CEF and NutWorld consider their marketplace to be nationwide, but also parts of Canada and some of Europe. Since the major ingredient of their products is hazelnuts, they watch closely the developments within the hazelnut industry and support generic product promotion efforts. The Hazelnut Marketing Board, which was formed in 1949 in Oregon, is the board authorized to establish quantity and volume regulations and to provide for the establishment of projects involving production and marketing research. The Oregon Hazelnut Commission, Nut Growers Society of Oregon, Washington and British Columbia, Hazelnut Growers Bargaining Association, Associated Nut Packers of Oregon and Associated Oregon Hazelnut Industries are other organizations actively promoting the American Hazelnut Industry.

The Hazelnut Marketing Board reports that there are 3.6 million trees in Oregon/Washington area. While Oregon provides the 99 percent of total United States hazelnut production, this only accounts for 3-5 percent of total world output. Foreign markets control world and domestic hazelnut prices. Turkey and Spain produce the majority of the world crop. Turkey supplied 70 percent of the world total production of hazelnut in 1996. About 99 percent of U.S. hazelnut imports were from Turkey. Another hazelnut related organization is International Nut Council (INC). INC is working with producers of all types of nuts and it has been playing an active role in the nuts industry since 1980s. In June 1997, Turkish and American hazelnut growers formed the Hazelnut Council, in order to promote hazelnuts and make the American consumer more aware of features of hazelnuts.

In addition to the competition with imported hazelnuts, hazelnuts are in direct competition with almond and pecan markets. These nuts are used widely in the confectionery industry and almonds are especially seen as the major competing ingredient whose price is inversely related with demand for hazelnut. New hazelnut product development efforts are supported by each of the regional, national, and international marketing associations. The NutWorld people therefore work in alliance with the various promotional divisions to mutually explore new product ideas.

The confectionery industry is the other market drawing on NutWorld's business. From 1985 to 1997, consumption per capita of confectionery products has increased from 18.3 pounds to 25 pounds, a 31 percent increase. At the same time, demand for chocolate confectionery products have increased, too. Consumption per capita increased from 10.1 pounds to 12.5 pounds, a 22.5 percent increase. The food industry brought 12,400 new products to the consumer in 1997, 2,500 of them introduced by confectionery industry.

The National Confectioners Association (NCA) is the major association representing the entire confection industry in the United States. NCA offers education in manufacturing, technical research, public relations, retailing practices, government relations and statistical analyses. Another related association is Chocolate Manufacturers Association (CMA). CMA's missions is "*to provide industry leadership to promote, protect and enhance the chocolate industry's interest through legislative and regulatory programs, and public relations.*" CMA members are the firms who engage in the manufacturing and distribution of cocoa and chocolate products. NutWorld can be effected by the decisions of both the NCA and CMA, since the only thing NutWorld does not grow is the chocolate and sugar, which is an ingredient of the hazelnut candy product.

Chocolate Covered Hazelnut Products

Chocolate covered hazelnut products are marketed all over the world. Consumption of chocolate confectionery products are higher in Europe, but NutWorld is not in the export business. Their smaller size and regional market focus leaves them emphasizing the domestic market. They believe that the domestic demand for hazelnut candies is growing. They are also suggesting that the demand has been there, but the product was not generally available.

They are shipping to the entire United States as part of their wholesale business, but their main sales are in the West coast, since they have concentrated their sales efforts in that area. The western market also provides a cost advantage, since the shipping cost is lower.

The decision to produce hazelnut candies was initially made based on the requests they received from consumers. They watched the product movement in the marketplace, developed trial product concepts, and provided samples to the consumer. They got a positive reaction from the consumer and decided to make a "go" decision, launching their hazelnut candy production. They pointed the fact that they do this with some caution, since new products increase the cost of product development and inventory.

When asked about their customers, the response was interesting. They said "*we are not a Blue Diamond or Planters, hence we have no need to develop in-depth marketing analysis to sell our product. We have trouble growing sufficient product to meet our sales needs.*"

They believe that what makes their product unique is the quality of the product, labels and packaging. Quality assurance is uniquely provided, since they are providing the product from field to consumer by being vertically integrated. Their special place in the market in part comes from being small and being able to do the total process by themselves. This translates to their NPD process by the speed with which they can respond or react.

Mr. Aylor noted, "*we started small and moved slowly, but we are allowing time for growth and expansion.*" The downside of being small is that they do not have a fancy research lab with highly trained experts developing new products. They believe, however, that they achieved brand

awareness in the northwest area. Their history and experience in this market is also paying dividends in better knowing what will work. They have over time determined the major factors affecting their business, such as quality, price, labeling, and packaging.

Financing new product ideas is a big challenge for a small company. Developing concepts, processing and manufacturing set-up, and developing new labels and packaging are all timely and costly. It is difficult for a smaller company to spread the risks.

Market channel diversification has been one strategy they have used. They are expecting to increase their sales by way of wider marketing channels and a wider selection of mix of products. Right now, they are in the middle of producing a new preserve product which they are planning to launch in 1998. They are producing this new product by using a similar processing technology employed by their current preserve products and they are going to sell it through most of the same marketing channels. They are benefitting from the synergy between the new product and old products, and company's familiarity to the technology, product, market and customer. Their measure of success is consumer acceptance and sales.

One of the unique production features of their hazelnut candies is that hazelnuts go through a dry roasting process. Dry roasting is a process of blowing hot air over the nuts. This process removes water, husks, and reduces oil. Other manufacturers use oil to cook the nuts. They chose dry over oil to reduce oil levels in the nut in an attempt to make it a more healthy product. Dry roasting produces higher quality candy, according to Mr. Aylor. The added oils involved in oil roasting do not mix well with chocolate. Many hazelnut processors are still using oil roasting and this is a competitive advantage emphasized by NutWorld as they compete with others in the market.

Balsu / Ulker

Balsu is one of the largest hazelnut processors in the world. They manage 260 hazelnut plantations throughout the Black Sea Region and has two major processing factories that sort and crack the nuts in Ordu and Hendek, Turkey and another that does additional processing in Istanbul (Balsu, 1997). The Balsu Group (Balsu Marketing Dis Ticaret A.S., Balsu Gıda Sanayi A.S., Balsu Nakliye Hizmetleri A.S., and Balsu Pazarlama A.S.) is operating within the food division of Azizler Holding A.S.. The Balsu Marketing head office has been in operation since 1978. Turkey supplied 70 percent of world total hazelnut production in 1996 and Balsu's share is 20 percent of Turkey's annual hazelnut exports.

Like NutWorld, Balsu is aiming to sustain a dynamic and healthy progress in the food industry at each step; from production to consumption. They buy the hazelnut from hazelnut farmers, then transport them to their cracking factories with their own transportation vehicles. Cracked hazelnuts are transported to the Balsu processing factory in Istanbul. The processing plant has roasters, grinding machines, and vacuum equipments. They also have humidity and temperature controlled warehouses allowing hazelnut conservation for at least a year without losing the first day's freshness. They use a sophisticated quality control process which provides them with consistently high quality raw products. During calibration, roasting and processing, hazelnuts face a combination of modern technology and human contact through hand-selection process. Roasted and chopped hazelnuts, hazelnut flour and hazelnut paste are the products introduced to the customers as a result of the process. They sell these roasted and chopped hazelnuts to domestic confectionery manufacturers, as well as to foreign companies.

Ulker is one of the biggest users of Turkish hazelnuts.⁸ This Turkish candy giant is one of the largest candy manufacturers selling into Europe. Their NPD initiatives in the past have involved close collaborations with Balsu, exploring new ideas and unique raw product needs. Their chocolate and cookie business is huge. The family of products developed continues to expand as they export to 75 distinct markets.

More recently Ulker has moved toward tighter vertical integration. They have expanded into the flour and fat business, they have a company that does packaging, and they have even expanded back into nut production.

New product development involves mostly in-house food scientists. Ulker has the latest production technology available in their factory. They do draw on outside consultants for market positioning. The scope of export markets makes new product development challenging. Each market has unique needs. Export sales comprise about 30% of their business with a value of \$150 million.

Ulker's success, building from humble beginnings in 1944, has grown with a steady stream of successful new product introductions. They built their chocolate and cookie biscuit business on the quality of Turkish hazelnuts and the size and efficiency of companies like Balsu that could provide the quality and volume of raw product required to grow.

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Much of the detail regarding information on the NPD strategies for Ulker is drawn from a personal interview with Mr. Eyup Demiralay, Assistant General Manager for Ulker. Additional information is discussed in a recent trade article on Ulker by Susan Tiffany, 1998.

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