

**BEFORE THE BRICKS AND MORTAR:
A CASE STUDY OF A NEW GENERATION COOPERATIVE'S PLANNING PROCESS**

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Abstract: To generate additional income for their members, many cooperatives consider forward integrating into processing activities. However, many market, industry, and economic issues must be considered before choosing a value-added processing activity to pursue. Gathering the necessary information to evaluate various processing opportunities is a considerable undertaking and may require the expertise of university personnel, economic development specialists, and possibly professional consultants. Using an Oklahoma new generation cooperative case study, this paper outlines a market assessment process for value-added ventures.

Key words/phrases: strategic planning, market entry strategies, “matrix” assessment, new generation cooperative

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Introduction

Since the late 1980's, a noticeable phenomenon in U.S. agriculture has been the development of producer-owned processing ventures and value-added marketing cooperatives (Cook). This has been particularly evident in the Northern Plains (North and South Dakota, Minnesota), where more than \$1.2 billion dollars were invested in various value-added marketing cooperatives during the late 1980's and early 1990's (Egerstrom). Noteworthy farmer-owned efforts include Dakota Growers Pasta Company, Drayton Grain Processors, AgGrow Oils, and Golden Oval. The success and proliferation of these value-added endeavors fueled interest in other areas. Over 125 new value-added enterprises (cooperatives and other producer-owned entities) were established in the Midwest during the 1990's, with producers investing over \$2.3 billion (Barton). This includes an Oklahoma-based frozen dough manufacturing cooperative that is the focus of this case.

The rapid escalation of interest by producers in the new generation cooperative (NGC) structure and value-added ventures in general has led to efforts to identify the processes in the planning, organization and development of successful ventures. A number of authors including Gerber; Harris, Stefason, and Fulton; Patrie; Stefanson and Fulton; Stefanson, Fulton, and Harris; Thyfault; Torgerson; and others have attempted to identify the key elements for the successful organization of producer-owned enterprises. While these authors do not suggest a single @road map@ to the successful development of value-added ventures, several factors in the organizational process – such as the presence of strong local support (a project champion),

comprehensive feasibility assessment, and a focused equity drive – are highlighted as key elements for success. These studies also highlight the importance of a sound market entry strategy, including the selection of the industry segment and product line.

These previous studies describe the mechanism by which specific value-added enterprises are/were evaluated and implemented. However, long before the feasibility study is completed or the equity drive initiated, the keys to success or failure may have already been determined. The most important decision is selecting the specific value-added enterprise or market segment. This decision is particularly difficult for producer groups because the organizers most often lack in-depth knowledge of food and manufacturing industries. Producer groups generally engage outside consultants to determine the feasibility of a particular venture. A well-developed feasibility study will include objective measures of a project's economic viability, such as net present value (NPV) and internal rate of return (IRR). Unfortunately, this expertise comes at a high price (often exceeding \$100,000) and few producer groups have the resources for multiple studies of alternative opportunities.

Examples of Market Segment Selection

Producer groups often select a market segment based upon the limited industry experiences of one or more organizers and/or an apparent market growth trend. Four wheat-related NGC ventures (Dakota Growers Pasta Company, Drayton Grain Processors, United Spring Wheat Producers, and 21st Century Grains) illustrate this point.

Dakota Growers Pasta Company, with its original pasta plant located in Carrington, ND, started out as a value-added cooperative processor that stemmed from the realization of a primary competitive advantage, the durum wheat itself (Demetrakakes). The experience of the project

organizers with previous pasta production efforts appears to have been the major factor influencing the group's market segment selection (Patrie). Members of the organizing committee had been involved with an unsuccessful attempt by the North Dakota Economic Development Commission to attract a major pasta venture, and two earlier successful efforts to recruit pasta operations to Cando, ND and Casselton, ND.

Drayton Grain Processors, established by 205 spring wheat producers, is co-owner of Drayton Enterprises, which manufactures frozen dough products and other food items from North Dakota hard red spring (HRS) wheat. In this case, the strategic decision to concentrate on pre-proofed frozen bread products was influenced by the management team that was assembled to head up the project. Mr. Tom Caron, founding chairman of the board and CEO of Drayton Enterprises, was a former executive with Schwan's Sales Enterprises while Drayton Enterprise's president Terry Smith was a former head of Van den Bergh's frozen dough manufacturing operation. (Gorton)

Market entry strategies of other NGC efforts have been based on anticipated market growth due to population increases and consumption patterns. United Spring Wheat Producers (USWP), a NGC consisting of HRS wheat producers from the Dakotas, Minnesota, and Montana, developed a partially-baked frozen dough facility near Atlanta, GA. Although the venture eventually failed, their decision to locate in Georgia was based on the population increases and growing market for frozen dough products in the Southeast U.S. (*Prairie Grains Magazine*). Similarly, 21st Century Grains Cooperative (based in Kansas) based their decision to manufacture specialty flours for cake mixes at a new flour mill in New Mexico on regional consumption patterns.

The Case Situation

This case study discusses the strategic planning and market segment selection processes that were used in the development of Value Added Products, Inc. (VAP) in the city of Alva, Oklahoma. While not all subjectivity can be removed from the enterprise selection decision, the case firm's approach used objective information to focus and rationalize the selection efforts. These processes illustrate how producer groups can organize relatively accessible information on crop quality, consumption trends, processing technologies, competitive environment, and geographic advantages into a decision matrix. The steps described in this case study can be used by a wide range of cooperative firms and other producer-driven, value-added efforts.

The area of Northwestern Oklahoma surrounding Alva is known as a consistent source of relatively clean (low dockage) and high quality (above average test weight and protein) hard red winter (HRW) wheat. Because of these factors, and the interest of the local "traditional" cooperative's board of directors and management team, VAP's organizing board initiated a strategic planning effort to explore investment opportunities in various wheat processing ventures.

The traditional cooperative's leaders felt that they had a strategic advantage as a consistent supplier of high quality wheat. With this in mind, they wanted to develop a project which would directly add value to producers' crops and create jobs locally. For the organizing board to understand the complexity of the value-added marketplace, they quickly recognized the need to systematically study market opportunities using all available sources of information and professional assistance.

The planning effort, which began in 1998, was initiated by the organizing board and members of the local economic development authority. The primary objective of this small group was to develop an inventory of local resources (infrastructure, financing sources, local management experience, and support industries) that might contribute to a successful processing effort. Through this process a project team was developed, which included influential wheat producers from the region, local bankers and businessmen, Oklahoma State University's Food and Agricultural Products Research and Technology Center (FAPRTC), the Oklahoma Department of Agriculture (ODA), and later a private sector wheat processing specialist. The assembly of a diverse team, unified by a joint vision to develop a local processing venture, proved to be extremely valuable in the planning effort.

The Planning Process

A new market participant in any industry must consider all potential barriers to entry. Common barriers to market entry include: proprietary technology, access to distribution channels, access to raw materials, cost advantages due to experience and technology, and the costs of capital (Porter). These barriers are particularly significant for the food industry, which is characterized by a small number of large firms, a complex regulatory framework, high technological requirements and costs, and increasingly limited access to distribution channels. Producer groups must carefully select a market segment where these barriers can be overcome.

The VAP project team's efforts were organized into four basic steps. The first step was to compile all available information concerning the quality characteristics of HRW wheat produced in the cooperative's trade territory over a period of time. Based on historical quality information such as average protein and dough elasticity, and the processing expertise of an OSU cereal chemist, an initial list of potential products was identified.

The second step was to obtain basic industry and production information for each product group. This included market size, market growth, industry concentration, location of competitors within the region, complexity of processing technology, minimum efficient scale of operation and location of major market outlets and/or distribution points. Obviously, gathering this information was not a simple task, but the combined industry knowledge and compiled market data from FAPRTC and the private industry specialist provided an appropriate depiction of each product's market trends and competition.

The next, and possibly most interesting, step in the process was the analysis of the information through a Matrix Assessment. This Matrix, which later will be discussed in detail, proved to be a valuable tool for addressing the advantages and disadvantages associated with the list of potential processing ventures. In essence, this planning tool provided a means for quantifying/rating each market segment, thereby allowing the members of the planning team to pinpoint the one or two ventures that showed the greatest promise for the region.

The final step in the process was the development of a specific action plan for pursuing the best processing alternative. Components of this action plan included determining the business structure to be used for the processing venture; the necessary facilities, equipment, and management for the venture; a plan for raising capital; and a marketing scheme for contracting

production. Parts of this action plan required the services of industry experts, who were brought in on a consultant basis.

The following sections describe the information gathering, matrix assessment, and action plan developed by VAP. The processing alternatives evaluated and the action plan developed were based upon the products best suited for manufacturing from HRW wheat with an average protein level of 12% and strong farinograph curves, which indicated very good dough elasticity from this wheat.

Wheat-Based Value-Added Possibilities

Five value-added further processing examples were considered: commodity flour, tortillas/flatbreads, refrigerated/frozen dough, specialty pasta and rye bread. It is possible to make all of these alternatives, with the exception of rye bread, using only HRW wheat. HRW wheat comprises approximately 99% of the wheat grown in Oklahoma (Oklahoma Dept. of Agriculture, USDA-NASS, 1990-1996). Rye bread was considered because many Oklahoma acres are planted in rye as an alternative to winter wheat for grazing cattle. In many cases this rye, like winter wheat, can be harvested after cattle are pulled off winter rye pastures in February/March. Harvested rye is currently channeled into seed and feed markets.

Commodity Flour

Growth in the commodity flour market has been small, especially in Oklahoma. Oklahoma has four operating flour mills, of which three are located in North Central Oklahoma. These four mills have a combined capacity of about 31,400 hundred weight (cwt.) of flour per day (Oklahoma Dept. of Commerce), almost exclusively using HRW wheat. The state's baking industry has expanded some in the past few years, but most of these newer commercial bakers are utilizing soft wheat flour imported from other states, not the HRW wheat flour generated by existing Oklahoma mills.

At the time when these planning efforts were underway, Kansas was providing the nation with almost 10% of all domestically milled flour, most of which is made from HRW wheat (USDOC, Bureau of the Census, 1998). This competitive pressure from a bordering state has further continued to limit the market opportunities for Oklahoma flour milling. Additionally, in the late 1990's a new mill was built near Ft. Worth, TX, providing even more competitive pressure for any proposed Oklahoma mill.

Tortillas/Flatbreads

The tortilla/flatbreads industry, which may be the fastest growing segment in the U.S. bakery industry, has recognized considerable market growth resulting from consumer desires for flavored and fat-free tortilla varieties. The Tortilla Industry Association stated that the overall market for tortillas in 1996 was \$2.87 billion, representing an annual increase of approximately 12% more than 1994 figures. In 1996, the Western U. S. continued to generate the largest proportion of sales revenue, approximately 30%. The Southeast accounted for 26% of the 1996 tortilla sales, and the North Central region 25% (Tortilla Industry Association).

Tortillas have extended far beyond the Latin American market that used to dictate tortilla sales. It is estimated that non-Latinos consume 60% of the tortilla products manufactured in the United States. Flour tortillas have dominated the market over corn tortillas in the last two years by a proportion of 2:1 (Find/SVP, 1997c). The Tortilla Industry Association estimated that Americans would consume approximately 75 billion tortillas in 1998, not including tortilla chips. A consumption increase of 54% was projected for the next five years (Tortilla Industry Association).

Frozen Dough/Bakery Products

Possibly the largest growth area for value-added wheat-based products is in non-bread frozen bakery products. This category includes such items as pizza dough and bulk dough for use by retail food outlets and in-store delis. According to the U.S. Department of Commerce (1992-1998), the value of shipments from domestic SIC 2053 manufacturers increased by 51.7% from 1992 (approx. \$1.67 billion) to 1996 (approx. \$2.54 billion). The value added component of those shipments (i.e., the portion of the products= value associated with the manufacturing process) increased by 47.3%, from \$919.2 million in 1992 to \$1.35 billion in 1996. As shown by the aggressive behavior of value-added cooperatives from the Upper Midwest (e.g. USWP), this is a high-growth industry with rapidly expanding markets in the Southeastern and Southwestern United States.

In a 1997 report, FIND/SVP (1997a), a market research company for consumer products, indicated that biscuit dough accounts for 41% of refrigerated/frozen dough product sales. Biscuit dough sales were expected to have an increase of 6.5% annually, with forecasted sales exceeding \$2.2 billion by the year 2000. Rolls and sweet goods, additional alternatives for

refrigerated/frozen dough processing, were predicted to show market growth of 9.6% and 16.8% (respectively) between 1993 and 2000 (Faridi and Faubion). One draw of rolls and sweet goods may be the various forms in which they can be purchased by final consumers (refrigerated dough, frozen dough, pre-proofed frozen dough, par-baked frozen dough) and easily baked at home.

Fewer than 15 marketers compete in frozen and refrigerated dough products on a national level, and fewer than five players dominate most dough market segments. The frozen dough market grew 27% in the period 1992-95 and is classified as one of the fastest growing segment among all bakery products. The top four firms in this industry are Rich Products Corp., Country Home Bakery, Inc., Hazelwood Farms Bakeries, and Pillsbury Co. These firms only control 24% of the overall market, indicating less entry resistance than most segments of the bakery industry (Lou and Wilson). However, the technological advances made in refrigerated/frozen dough processing, along with the generally higher costs of handling refrigerated/frozen products, result in high market entry costs.

Niche Market Opportunities

Although pasta is traditionally produced using durum wheat (which gives it the color and texture consumers most often associate with pasta products) HRW wheat can be used to develop acceptable specialty pastas when various herbs and flavorings are utilized. In 1995, during the early days of Dakota Pasta Growers, the three biggest pasta companies were Hershey, Borden and CPC International, which combined controlled approximately 67% of the U.S. retail market for dry pasta (FIND/SVP, 1997b). Dakota Pasto Growers has since passed some of these companies to become one of the top pasta producers. A 1997 survey of U.S. pasta-manufacturing firms suggested that many of these firms were planning expansions into the

specialty pasta market (FIND/SVP, 1997b). Approximately 50% of the companies interviewed introduced a new product in 1995, and 30% were planning to introduce new products in 1996. Targeting niche populations was a marketing strategy used by 25% of the companies interviewed.

Rye crisp bread production is another potential niche market opportunity for a Southern Plains cooperative. Rye crisp bread is defined as a plain, dry, unsweetened cracker made from crushed wheat and rye grains. It can be found in the deli sections of some supermarkets in the U.S. and abroad, and is widely consumed in Scandinavian countries. It has excellent storage properties, even without moisture-proof packaging. The production of rye crisp bread in some European countries is fully automated.

Oklahoma State University's FAPRTC conducted a research project to develop rye crisp bread from rye delivered to local elevators, then compared the resulting product batches with commercially available rye crisp bread. The results indicated that rye crisp bread could be successfully produced with small scale (laboratory scale) milling and baking equipment. Texture, taste and color were comparable to commercially available products. However, no information indicates that rye crisp bread is produced on a large scale in the U.S., nor has market information on rye crisp bread been available to the public.

Matrix Assessment of Value-Added Processing Possibilities

Table 1 represents an abbreviated form of the matrix assessment for the potential wheat-based value-added products discussed above. Depending upon the processing ventures considered and the individual advantages/disadvantages of a given cooperative, the number of factors to be considered may be extensive. After considering the previously discussed industry information, VAP's organizers developed the numerical ratings depicted in Table 1 during a two-day planning retreat.

The numerical ratings for various factors and the combined scores for the possibilities help to determine the "best" wheat processing alternative. For each factor, the numerical ratings represent a categorical ranking for that factor. For the factor of "Market Growth" in Table 1, "1" represents a declining market, "2" represents no market growth, and "10" represents 15% annual market growth or greater, with "3" through "9" assigned specific value ranges. "Scale/Capital Requirements" is similarly scored, but in this case "1" represents a high capital outlay (e.g., \$240 million or greater) and "10" represents a relatively small capital outlay (e.g., \$100,000).

This scoring system could also be adjusted for the varying importance among factors. Each factor could be individually weighted to allow for these differences in importance. For example, a cooperative may determine "Market Growth" to be twice as important as any other factor, so the score for that factor would be counted twice in the total score for each possible venture.

Market Growth

The ratings given to products for "Market Growth" in Table 1 are based upon the previously mentioned industry and market assessments. Commodity flour received a ranking of

“3” because market growth has not been as great as the growth in further processed products. Tortillas and frozen dough products received ratings of “7” reflecting the tremendous market growth of these products in recent years. Specialty pasta was rated “3” for market growth. The pasta market has experienced growth, but specialty pasta made from HRW wheat is only a small segment of this market, and future growth of this niche market is uncertain. Similarly, market information for rye crisp bread (rated “2” for market growth) is virtually unknown. An Oklahoma cooperative’s ability to profit from a rye bread venture would require that the cooperative develop an unproven niche market to fill.

Technology

This column in Table 1 represents the amount of technologically advanced equipment, as opposed to labor, necessary to manufacture a given product. Commodity flour production was rated “5” for technology while frozen dough was rated “7”. The equipment used in flour mills has changed very little in the past 30 years, so mills do not vary greatly in terms of technology. However, manufacturing refrigerated/frozen dough products requires that the dough even be mixed at refrigerated temperatures to prevent undesired yeast activity (dough rising). Therefore, refrigerated/frozen dough production requires relatively high-tech equipment that can mix cold dough, generally “tougher” than the mixing equipment common in most bakeries, and refrigeration/freezing equipment for storing products.

Tortillas, flatbreads and rye crisp bread were all rated “3” for technology requirements. All of these products can be manufactured with commonly available baking equipment. Specialty pasta production was rated “4” because many specialty pasta products require more advanced processing machinery for shaping and drying.

Scale/Capital Requirements

The homogeneous nature of some wheat-based products and/or the technologically advanced equipment necessary to manufacture some products may require high capital outlays to enter an industry. For example, the commodity flour industry is a high volume, low margin industry that requires a significant amount of processing equipment and grain/flour storage space to profitably manufacture a homogeneous product. Therefore, any flour industry entrant would have to begin with a facility large enough to take advantage of economies of size, otherwise high per unit costs would push the company out of operation. For this reason, commodity flour production was rated “5” for scale/capital requirements. While frozen dough processing can be conducted on a somewhat smaller scale, this product category received a “4” rating because of the high capital expenditures associated with equipment for processing refrigerated/frozen dough products. The production of tortillas/flatbread, specialty pasta and rye crisp bread received higher ratings for scale/capital because of the output and automation level associated with the production process.

Degree of Competition

Degree of competition refers to the level of competitive pressure for a given market, whether that pressure is on a local, regional, or national level. The commodity flour industry received a rating of “1” indicating that the industry consists of a small number of strong firms. The flour industry is largely controlled by companies such as Archer Daniels Midland (ADM), ConAgra, and Cargill, with additional medium-sized competitive pressure coming from regional mills operated by Arrowhead Milling, Shawnee Milling, and Bay States Milling. The

competitive pressure in the commodity flour industry is compounded by the fact that neighboring Kansas mills supply a large portion of the nation=s HRW wheat flour.

The tortilla industry received a higher rating of “4” indicating a lower level of domination by the largest firms. While several large firms compete in the tortilla industry, one being Mission Foods, the tortilla market is rapidly growing and this growth has provided opportunities for smaller firms. The refrigerated dough industry (rated “7”) was judged to be even less concentrated. The refrigerated/frozen dough industry includes such a variety of products that even the presence of a few large frozen dough processors does not indicate constricting competitive pressure. Specialty pasta and rye crisp bread production received intermediate ratings of “3” and “4” respectively. Specialty pasta, although considered a product for niche markets, faces strong competition from the established durum pasta brands. Although no large U.S. firms produce rye crisp bread, the market for this product is small.

Market Proximity

Market proximity refers to the distance between the processing facility (in Northwest Oklahoma, for this example) and market/customer centers. Metropolitan centers located within 600 miles (roughly one day’s drive) of Northwest Oklahoma include Oklahoma City and Tulsa; the Dallas/Ft. Worth metroplex and Amarillo (TX); Wichita and Topeka (KS); Kansas City and St. Louis (MO); and Denver and Colorado Springs (CO). For items such as commodity flour, proximity to potential customers means proximity to commercial bakers. Flour production received a market proximity score of “3” because of the limited opportunities for supplying flour to commercial bakers. Although the Oklahoma baking industry has grown considerably in the past few years, production from existing Oklahoma mills provides little opportunity for an HRW

wheat producer cooperative to market flour to in-state firms. Additionally, many of the newer in-state bakers utilize predominantly soft wheat flour. Therefore, any proposed flour mill would have to pursue distant buyers, which would give the mill a competitive disadvantage (in terms of location and transportation costs) compared to mills nearer those out-of-state bakers.

Because of Oklahoma=s proximity to the Western and Southwestern U.S. markets, both tortillas/flatbread production and frozen dough production received a high rating of “8” for market proximity. Because refrigerated/frozen dough products are less perishable than other Afresh@ value-added possibilities (e.g., flour and tortillas), the timing of product transports is not as crucial. However, even frozen dough products have limited storage life. Frozen storage of more than 60 days will generally kill off all yeasts in dough products, thereby preventing the dough from rising when baked. Specialty pasta and rye crisp bread production received moderate market proximity ratings of “3” and “4”, respectively. The analysis indicated that the rapid population growth in the Southwest would provide an Oklahoma-based entrant with some logistical advantages in servicing these niche markets.

Summary of Matrix Assessments

The overall scores for each of the five processing possibilities are included in Table 1. Table 2 summarizes each venture=s potential for the example wheat producer cooperative in Northwestern Oklahoma.

Commodity Flour

Commodity flour processing received a score of “17” out of the 50 possible points for the elements of the matrix presented in Table 1. Prior to the market planning process, the planning team had a strong preconception that flour production was the most logical value-added project.

The matrix analysis illustrated that the flour market had relatively low growth potential and that an Oklahoma based processing operation would not enjoy any significant transportation advantage. A new entrant would expect to face pressure from large existing firms and the technology and scale requirements of milling would provide only moderate protection from new entrants.

Tortillas/Flatbreads

Tortillas/Flatbreads processing received a score of “29”. The analysis reflected a relatively high rating for market growth and a moderately strong transportation advantage in supplying regional markets. However tortilla/flatbread production received low ratings for competition reflecting the market share of large firms such as Mission Foods. The analysis also indicated that a new tortilla processing operation would be at moderate risk from new market entries. The scale of operations (rated “7”) might discourage some entrants. However, from a technological standpoint, tortilla production is relatively simple and the equipment is fairly standard across all manufacturers, thereby making it easy for competitors to copy production practices.

Refrigerated/Frozen Dough Products

Refrigerated/frozen dough product production received the highest rating of “34” on the 50 point scale. This rating reflected the favorable ratings for market growth and industry concentration and a projected transportation advantage. While frozen dough processing is conducted at a lower scale of operation (relative to flour or tortilla production), the technology required for automated production systems and the facility design required for production and storage of frozen products provided a fairly high barrier to new entrants.

Specialty Pasta

Pasta production received a relatively unfavorable overall rating of “20”. The ratings reflected the marketing challenges of creating and promoting a new niche product in a moderately concentrated industry. Because pasta consumption is not concentrated in the Southwest, an Oklahoma processing operation was not projected to have a substantial transportation advantage. Even though a prototype HRW pasta would probably incorporate flavorings and spices to alter the pasta’s organoleptic attributes, technology requirements did not appear to provide a barrier from new entrants.

Rye Crisp Bread

Rye crisp bread production received an identical rating of “20” for very similar reasons. The analysis of market growth, competition situation and potential transportation advantages were relatively unattractive. The only indicated advantage of rye crisp bread production, relative to the other products under consideration was that the scale and capital requirements (over \$5 million) for an automated cracker production line would obviously deter additional market entrants.

The Cooperative’s Decision

Based upon the strategic planning steps taken, the group decided to pursue the frozen dough alternative and proceeded with a detailed feasibility study for a proposed venture. The assessment team felt that this alternative provided ample market opportunities with limited competition (depending upon product categories) in an industry that has experienced substantial growth during the past five years. After assessing available technology the group selected a

processing system and facility layout, then developed a business plan based upon the production of a handful of products perceived as most marketable.

The NGC structure was chosen as the business form for the operation for essentially three reasons: (1) the planning team's members wanted to ensure that the operation would be owned by and utilize the wheat of regional producers, (2) the planning team preferred the one-member-one-vote structure of cooperatives that would prevent a handful of large investors from controlling the business, and (3) both producers and the elevator cooperatives in the region could relate to the NGC structure as a variation of the "traditional" cooperative structure. The cooperative's equity drive (conducted in two offerings) raised just over half of the \$19 million (roughly \$10 million) needed for the operation from over 900 members. These members/owners included both agricultural producers and wheat marketing cooperatives. A government-secured loan was obtained through USDA's Rural Business-Cooperative Service to make up most of the difference.

The cooperative eventually purchased an existing building that was deemed appropriate for their needs and began a pilot-scale processing line in March 2000 while renovations for the full-scale line were being made. Output from the pilot scale facility was initially used to develop market opportunities and obtain processing contracts. After the full-scale plant became operational in September 2000, the pilot facility was designated for product development and small-order contracts.

VAP's achievements suggest that the market segment selection process was effective. Consistent with projections, VAP achieved a small operating profit by the end of their third operating year (FY 2003). The cooperative had net sales of \$4.9 million for the year, and the

recent addition of new clients suggest a considerable sales increase for FY 2004. Frozen dough products currently manufactured and marketed by VAP include self-rising pizza crusts, self-rising cinnamon rolls, filled pastries, baguettes, and croissants.

Implications for Other Cooperatives

The market entry and venture assessment described above is a simplified example of how farmer owned cooperatives and other groups can examine value-added processing possibilities for a variety of agricultural commodities. The specific factors used to assess opportunities will vary according to the organization's geographic location, business environment, financial capabilities, and business goals. The strength of the general matrix approach described in this paper is that it encourages project planners to consider value-added possibilities from several perspectives and to consider possible impacts from existing firms and new market entrants prior to expending limited resources on feasibility studies and business plans.

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Table 1: Matrix of Value-Added Wheat-Based Products and Factors Influencing the Feasibility of Processing Opportunities for an Oklahoma Wheat Producer Cooperative.

Products ^b	Selected Factors ^a					
	Market Growth ^c	Technology Requirements ^d	Scale/ Capital Requirements ^e	Degree of Competition ^f	Market Proximity ^g	Total Score
Commodity Flour	3	5	5	1	3	17
Tortillas/ Flatbreads	7	3	7	4	8	29
Refrigerated/ Frozen Dough	7	8	4	7	8	34
Specialty Pasta	3	4	6	3	4	20
Rye Crisp Bread	2	3	8	4	3	20

^a These are not the only factors to be considered in evaluating value-added alternatives, just ones utilized for this example.

^b These products serve as examples of value-added processing alternatives considered by the wheat producer cooperative in question.

^c 1=declining, 3=slight, 10=very good.

^d 1=low/copyable, 10=high/unique (a product-relative assessment).

^e Necessary size and cost to develop a cost-competitive plant. 1=\$240 million, 5=\$20 million, 10=\$100,000.

^f Based upon local/regional competition with Northwest Oklahoma. 1=few/strong competitors, 10=many weak competitors.

^g Based upon access to large consumer markets, taking into consideration product perishability and transportation costs. 1=no advantage, 10=big advantage.

Table 2: Summary of Processing Possibilities for an Oklahoma Wheat Producer Cooperative.

Product	Assessment Summary
Commodity Flour	<ul style="list-style-type: none"> \$ Homogeneous product with limited local market opportunities due to heavy competition from large millers. \$ Relatively standard industry technology allows little opportunity to be different. \$ High-volume, low margin business requiring extensive capital outlay for market entry. \$ Industry partnering may be necessary to enter this business.
Tortillas/ Flatbreads	<ul style="list-style-type: none"> \$ High market growth for fairly homogeneous product (tortillas). \$ Relatively simple manufacturing process, labor intensive. \$ Heavy competition, both in brand recognition and price. \$ Well located to access high volume market areas. \$ Much less capital intensive than most other options.
Refrigerated/ Frozen Dough	<ul style="list-style-type: none"> \$ High market growth for many refrig./frozen dough products. \$ A wide range of heterogeneous products can be made with the same equipment. \$ Product forming and refrigerating/freezing equipment entails high technology, which comes at a high price. \$ Controlled-temperature processing and storing facilities are costly. \$ Little market dominance by larger companies. \$ More opportunities for partnering with existing industry.
Specialty Pasta	<ul style="list-style-type: none"> \$ Niche market item with heavy quality and price competition from traditional durum pasta. \$ Comparatively lower costs for processing facilities. \$ Extensive marketing necessary to establish the product in a niche market.
Rye Crisp Bread	<ul style="list-style-type: none"> \$ Niche market. \$ Product could be manufactured on a small scale using common baking equipment. \$ May have limited opportunities for contracting production for retail food stores using their store brand.