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Start-up and operating costs for artisan cheese companies

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ABSTRACT

Lack of valid economic data for artisan cheese making is a serious impediment to developing a realistic business plan and obtaining financing. The objective of this study was to determine approximate start-up and operating costs for an artisan cheese company. In addition, values are provided for the required size of processing and aging facilities associated with specific production volumes. Following in-depth interviews with existing artisan cheese makers, an economic model was developed to predict costs based on input variables such as production volume, production frequency, cheese types, milk types and cost, labor expenses, and financing. Estimated values for start-up cost for processing and aging facility ranged from $267,248 to $623,874 for annual production volumes of 3,402 kg (7,500 lb) and 27,216 kg (60,000 lb), respectively. First-year production costs ranged from $65,245 to $620,094 for the above-mentioned production volumes. It is likely that high start-up and operating costs remain a significant entry barrier for artisan cheese entrepreneurs.
Key words: artisan cheese cost, economic model

INTRODUCTION

The number of artisan dairy processors has grown significantly over the past decade. For example, in Oregon, the number of artisan dairy companies has risen from 3 to 26 since 1999 (Figure 1). One important factor limiting new company growth is the lack of reliable economic data. Entrepreneurs who start these companies are challenged by the lack of available information on start-up and production costs. This complicates development of credible business plans and makes it difficult to obtain financing.

The few available studies focus on large-scale commodity milk processing (Erba et al., 1997), economic feasibility of small commodity cheese processing facilities (Becker et al., 2007), and start-up of artisan companies with no mention of financial considerations (Reed et al., 2011). Although economic data are available for large-scale processors (Ahearn et al., 1987; Papadatos et al., 2002), this is not the case for artisans, and the available data cannot be accurately extrapolated to these smaller scale businesses. Becker et al. (2007) investigated the economic feasibility of a dairy processing facility of varying processing capacities. The smallest scenario investigated was a family farm of 50 cows assumed to produce "an initial volume of 7,938 kg (17,500 lb) of milk per week for processing." In reality, much smaller volumes are observed in the current artisan cheese industry, where approximately 1,000 to 3,000 kg of milk per week is found to be more common (Sakovitz-Dale, 2006).

Nicholson and Stephenson (2007) did investigate financial considerations but only, as self-proclaimed, "an initial foray designed to highlight certain issues and pave the way for necessary more comprehensive research projects on value-added dairy processing." Their study on value-added dairy operations in New York, Vermont, and Wisconsin highlighted valuable issues in artisan cheese operations. They concluded that initial capital purchases of plant and equipment must be carefully considered through operation financial analyses; product pricing was a problem, where a minimum of $22/kg ($10/lb) of cheese was necessary to cover operational costs; and that a well-prepared business plan was essential to value-added product success. Another important conclusion made by Nicholson and Stephenson (2007) was that many of the investigated operations transitioned into value-added processing from fluid milk production, and that operators were less likely to "have good understanding of the capital needs to build and operate a small processing plant."

Common financial problems observed with small-scale dairy start-ups are often related to the following areas as listed by Axtell et al. (2008): "[Owners] treating profits as their income instead of paying themselves a salary and investing profits into the business, incorrect costing and pricing of products so that they do not make a profit, poor record keeping so they do not know if they are operating profitably, over-spending or hav-

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Table 1. General categories of questions used for the survey of current artisan cheese companies

Processing attributes	Start-up costs	Operational costs
Milk processing capacity	Equipment sizes/prices	Labor (production and sales)
Product attributes and pricing	Overall cost of start-up	Utilities and waste management
Total production per year	Facility building costs	Licensing and insurance
Facility size	Aging facility building and installation	Ingredients and sanitation liquids
Aging facility size	Milk transport equipment	Packaging/labels

ing a loan that is not repayable, and having too many debts or creditors."

The objectives of this study were to determine start-up and operating costs for artisan cheese producers, in addition to production and aging facility size. An economic model was developed as a tool to forecast costs and revenues, although only costs are presented here. The model was developed based on economic information from 6 existing artisan processors and beta-tested on 3 entrepreneurs within the start-up process. The overall outcome of the study was to help artisan cheese entrepreneurs make credible business decisions.

MATERIALS AND METHODS

Cheese Company Surveys

A 57-question survey was used to investigate the financial background of starting and operating an artisan cheese company. Brief descriptions of representative questions that were asked are shown in Table 1. The questionnaires were sent out to company owners electronically and followed up by an in-person interview. Six cheese companies participated in the extensive survey. The data from this survey were used in the design of an interactive business operations model.

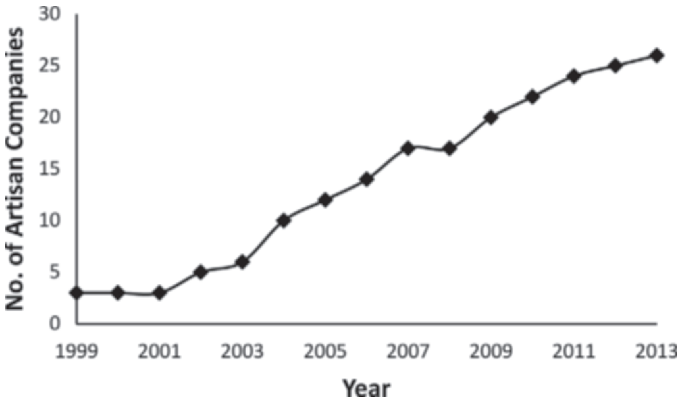

Figure 1. Number of artisan cheese companies in Oregon. Data obtained from Oregon Department of Agriculture dairy plant licenses.

Business Model and Development

Survey data were used in the design of the operating business model in Excel 2010 (Microsoft Corp., Redmond, WA). This software package was chosen because of its widespread availability to potential artisan cheese entrepreneurs. Assumptions used in the model design are summarized in Table 2. The companies surveyed ranged in size from 1,361 kg (3,000 lb) cheese/yr to 36,287 kg (80,000 lb) cheese/yr. Therefore, this model should only be utilized for company scenarios that fall within this production range.

Cost of Capital and Discount Rate. The discount rate of 10% was used to evaluate all financial analyses. This was determined through evaluation of the risk associated with starting a specialty food business. The lowest cost of capital was determined to be debt financing at 6%, and an additional risk of 4% was added for conservative calculations.

Initial Capital Investment. Initial capital investment estimates were calculated and reported as monthly loan payments. The model calculates the following information as output: initial capital needed for a down payment on the loan, 20% of principal, and additional capital necessary to operate business during negative cash flow years. The model estimated values for facility size requirements, necessary equipment, and aging room capacity to accommodate the total cheese produced at the end of the last year in the study period (yr 15).

Equipment. Necessary equipment was determined by the survey of artisan cheese companies, and pricing values were based on quotes from various equipment manufacturing companies as well as a dairy equipment installation specialist (H. Schuller, C. van't Riet Dairy Technology, DuBois, PA; personal communication).

Processing Facility. Required facility size was calculated based on data obtained from the survey. Facility sizes (not including aging room or additional areas for tasting and sales) are plotted against total yearly cheese production in Figure 2. The production data collected ranged from approximately 1,361 kg (3,000 lb) to 36,287 kg (80,000 lb) total yearly cheese production. As seen from the data points, the relationship between the area needed for the facility and desired capacity was nonlin-