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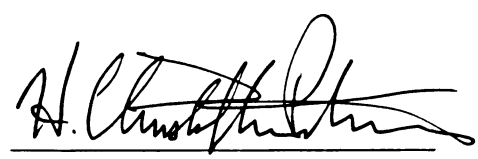
THE PRODUCTION AND MARKETING OF DIFFERENTIATED AGRICULTURAL PRODUCTS: IMPLICATIONS FOR AGRIBUSINESS STRATEGY

presented by

JON C. PHILLIPS

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Agricultural Economics



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THE PRODUCTION AND MARKETING OF DIFFERENTIATED AGRICULTURAL PRODUCTS: IMPLICATIONS FOR AGRIBUSINESS STRATEGY

By

Jon C. Phillips

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Agricultural Economics

2002

ABSTRACT

THE PRODUCTION AND MARKETING OF DIFFERENTIATED AGRICULTURAL PRODUCTS: IMPLICATIONS FOR AGRIBUSINESS STRATEGY

By

Jon C. Phillips

There has been a noticeable trend in agriculture from the production of standardized commodities to the production of specialized, differentiated products. At the same time, there has not been a great deal of research into the strategic aspects of product-oriented agriculture. This dissertation is made up of three interrelated essays that address the strategic aspects of product-oriented agriculture. These essays examine the strategic implications of the production and marketing of differentiated agricultural products at the level of the firm, and at the level of an agricultural subsector in a specific geographic location.

The first essay examines the business strategies of value-added agricultural producers, and contrasts their management emphasis, product offerings, and resource needs with those of commodity producers. An empirical study of agricultural producers provides data to test for differences between producers who produce differentiated agricultural products and those who do not. A strategy classification framework for agricultural producers is introduced, based on the production and marketing of differentiated agricultural products. The five types

of strategies in the framework are: Commodity Producers, Reverting Commodity Producers, Transitional Producers, Product Production Specialists, and Product Producer-Marketers.

Agricultural economists and government analysts have for many years produced assessments, or inventories, of resources related to agricultural production. Three prior inventorying efforts, the U.S. Census of Agriculture, the Status and Potential of Michigan Agriculture (SAPMA) project and the Florida FIRST project, were evaluated in the second essay. These prior approaches to inventorying agricultural resources are shown to be commodity-oriented. Because different resources are necessary in the new, product-oriented agricultural environment, a new resource inventorying process is needed. The second essay addresses the issue of inventorying resources to support decision making in an environment characterized by differentiated agricultural products. More specifically, it explores the question of what information is best suited for strategic analysis and strategy formulation for firms involved in product-oriented agriculture. A new framework for inventorying agricultural resources is introduced, and suggestions for implementing it are included.

The third essay features a case study of a group of agricultural producers who face a strategic decision, namely, whether or not to establish a marketing cooperative for organic vegetables. Besides facilitating the solution of a specific strategic problem, this case study presents current demand and market conditions facing the organic vegetable industry. Further, the new resource inventory for product-oriented agriculture, which was introduced in the second essay, is applied in this specific strategic situation. This application verified the workability of the theory and its usefulness for strategic planning in product-oriented agriculture.

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DEDICATION

This dissertation is dedicated to my wife Nancy, who has sacrificed so much for me.

ACKNOWLEDGMENTS

I consider it a privilege to have been able to study at Michigan State University. I'd like to acknowledge the members of my committee for their participation and assistance: Dr. Dave Schweikhardt, Dr. Dave Weatherspoon, Dr. John (Jack) Allen, and especially Dr. Chris Peterson (my major professor). It was a pleasure working with Chris, and without his guidance, feedback, and support, this research would not have been possible.

I should also mention my appreciation for all of the sources of funding that enabled me to complete my doctoral program, most notably, Project GREEEN from the Michigan Agricultural Experiment Station. Faculty members who provided other financial support were Dr. Scott Whiteford, Dr. Lindon Robison, and Dr. Marcelo Siles. Dr. Bill Metcalfe shared valuable insight into the process of completing a dissertation. I am grateful for the professional guidance I received from the following faculty members: Dr. John (Jake) Ferris, Dr. Jim Marshall, Dr. Sherrill Nott, Dr. John O'Donnell, and Dr. Paul Wessen. Further, I appreciate that Dr. Eric Crawford admitted me to the doctoral program in agricultural economics at Michigan State and advised me along the way.

The staff of the Agricultural Economics Computer Services and the Reference Room (most notably Librarian Judith Dow) were very helpful several times throughout my years of study. In addition, many of my graduate student colleagues, e.g., Bishwa Adhikari, Rui Benfica, (now Dr.) Sam Asuming-Brempong, (now Dr.) Kimberly Aldridge, (now Dr.) Berhanu Gebremedhin, John Hershey, Daniel Karanja, (now Dr.) Cynthia Phillips, (now Dr.) Jim Sterns, (now Dr.) Marcelo Wiecheteck, (now Dr.) Hong Holly Wang, Eric Wittenberg, and (now Dr.) Al Wysocki contributed assistance throughout my doctoral program. My

family also provided various forms of support (e.g., financial and emotional). I'd like to specifically acknowledge the assistance of my mother, Rosalie M. Phillips, and my wife Nancy. I also thank God for enabling me to successfully complete this project.

There were a few twists and turns along the way, but I am exceedingly pleased to have accomplished my objective. The human spirit can overcome seemingly unsurmountable adversity. I would like this volume to endure as a shining example of a man's triumph against all odds and in the face of great adversity.

PREFACE

This dissertation is written in the three-essay format. This preface is intended to give an overview of the entire research project and show how the essays of this dissertation relate to one another.

The dissertation examines value-added agriculture at an empirical and theoretical level. For the purposes of this research, a "value-added agricultural product" is defined as an agricultural product that delivers special features (other than lowest price) that are desired by a targeted group of customers.[1] Value-added agriculture involves the production and marketing of differentiated products, rather than standardized commodities. This research started with a premise that value-added agriculture is substantially different from commodity agriculture. It follows logically that different resources and skills are required to succeed in these two different types of agriculture. This conclusion is also supported by Porter,[2] as well as Brester and Penn.[3]

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1 Many agricultural economists have a more limited conception of the term "value-added agriculture." Specifically, many scholars limit the use of this term to agricultural products that have changed form through processing. To avoid confusion with this alternative definition, value-added agricultural products were referred to as "differentiated agricultural products" in this dissertation.

2 Porter, M.E. 1980. *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. New York: The Free Press.

3 Brester, G.W. and J.B. Penn. 1999. *Strategic Business Management Principles for the Agricultural Production Sector in a Changing Global Food System*. Policy Issues Paper No. 11, Trade Research Center, Bozeman, Montana: Montana State University, November.

The issue of what resources and skills are necessary to succeed in value-added agriculture versus commodity agriculture has not received much empirical attention from agricultural economists. The first essay of this dissertation seeks to address this issue. It involved an empirical study of agricultural producers aimed at examining their business strategies. Specifically, the empirical study set out to discover how widespread value-added strategies are among agricultural producers and what resources and skills are necessary to succeed in value-added agriculture. It also aimed to test whether the business strategies of agricultural producers corresponded with Porter's Cost Leader and Differentiation strategies. This first essay found that the array of business strategies employed by the agricultural producers in the subject pool was more complex than Porter's proposed strategies. A new business strategy classification scheme for agricultural producers, focusing on the production and marketing of value-added products, is one of the results of the first essay.

The empirical results in the first essay showed that the firm-level resources and skills required for value-added agriculture are different than those required for commodity agriculture. The question of what resources and skills are required to succeed in value-added agriculture may also be examined at a regional level, as opposed to a firm level. The second essay undertook to do so.

Agribusiness decision makers who are involved in (or are contemplating entering) value-added agricultural markets need information to effectively engage in strategic planning. The second essay examined the information provided in the U.S. Census of Agriculture and two state-level inventories of agricultural resources. It found that these inventories provide a great deal of information that can support decision making in commodity-oriented

agriculture. At the same time, the second essay shows that these three inventories lack certain information necessary for decision making in dynamic, value-added agricultural markets.

The second essay introduces a new resource inventory, designed specifically to support decision making in product-oriented, value-added agriculture. Two general management theories provided a basis for the new resource inventory. These theories were the Resource-Based View of the Firm[4] and Porter's Diamond Model of Competitive Advantage.[5] In addition, the empirical study from the first essay was another key building block for the resource inventory for product-oriented agriculture. The empirical study built upon the elements of the two general management theories and allowed the new resource inventory to be customized for product-oriented agriculture. The resulting inventory is a list of more-controllable and less-controllable resources that should be examined when formulating value-added, agribusiness strategy. The resource inventory that is introduced could be used by researchers in universities, analysts from commodity organizations, and decision makers from agribusiness firms. Thus, while the first essay sought to analyze and characterize individual firm behavior, the second essay sought to provide an effective tool, with a foundation in management theory, for agribusiness decision making. The empirical study of agricultural producers contributed significantly to both essays.

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[4] See, for example, Barney, J. 1991. "Firm Resources and Sustained Competitive Advantage," *Journal of Management*, Vol. 17, 99-120.

[5] Porter, M.E. 1990. *The Competitive Advantage of Nations*. New York: The Free Press.

Agribusiness strategy research, like other business strategy research, typically seeks to provide practitioners with useful insights or methods. A necessary part of this research project, therefore, was to test whether the resource inventory from the second essay met this criterion. Specifically, the test was designed to determine whether the framework could be effectively applied to a real world situation, and whether it could serve a useful purpose in strategic planning. The third essay of this dissertation provided an ideal opportunity to accomplish such a test using case study research. The case involved a group of producers of organic fruits and vegetables who were investigating whether they should form a marketing cooperative. The resource inventory that was introduced in the second essay was applied to the case of these growers. To implement the inventory, data was obtained from three sources. These sources included secondary data (e.g., trade journals), interviews with key industry informants, and face-to-face interviews with the growers involved in the project.

Each category of resources of the inventory was examined in the context of the case. Individual resources were analyzed to determine whether they could support a competitive advantage for the grower group. The conclusion from applying the resource inventory was that it served a useful purpose for business strategy development in a value-added agricultural setting. It should also be noted that the third essay has another use. The portion of the essay that defines the problem could be used as a teaching case in an academic course or in an extension setting with agricultural producers. The case presents a substantial amount of information about organic agriculture, especially information related to the demand for organic food products. It also includes consideration of potential markets or distribution channels for fruits and vegetables, from the perspective of a new or smaller grower. The most

distinctive aspect of this case, however, is its emphasis on resources and how they affect the potential achievement of competitive advantage.

In total, the contribution of this research is to advance knowledge of agribusiness strategy in two areas. The first area of contribution is the strategy classification scheme for agricultural producers that is introduced in the first essay. The second is the resource inventory for product-oriented agriculture that is introduced in the second essay. These contributions may assist agribusiness decision makers (and those who advise them) in strategic planning. Another important element of this dissertation is the third essay, which demonstrates the usefulness and workablility of the resource inventory that was introduced.

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KEY TO SYMBOLS OR ABBREVIATIONS

CBOT:	Chicago Board of Trade
C of A:	Census of Agriculture
CP:	Commodity Producer
DAN:	Detroit Agriculture Network
ECR:	Efficient Consumer Response
Florida FIRST:	Focusing IFAS Resources on Solutions for Tomorrow
HACCP:	Hazzard Analysis and Critical Control Points
HTA:	Hedge-to-Arrive
IFAS:	Institute of Food and Agricultural Sciences
IQF:	Individually Quick Frozen
ISO:	International Standards Organization
LCR:	Less-Controllable Resources
MASA:	Michigan Agricultural Stewardship Association
MCR:	More-controllable Resources
MIFFS:	Michigan Integrated Food and Farming Systems
MOFFA:	Michigan Organic Food and Farming Alliance
M-SAN:	Michigan State Sustainable Agriculture Network
MSU:	Michigan State University
PP-M:	Product Producer-Marketer
PPS:	Product Production Specialist

RBV:	Resource-Based View of the Firm
RCP:	Reverting Commodity Producer
ROI:	Return on Investment
SAPMA:	Status and Potential of Michigan Agriculture
SBA:	Small Business Administration
SOPs:	Standard Operating Procedures
TEPAP:	The Executive Program for Agricultural Producers
TP:	Transitional Producer
U.S:	United States
USDA:	U.S. Department of Agriculture

ESSAY I:

DIFFERENTIATED AGRICULTURAL PRODUCTS AND BUSINESS STRATEGIES FOR AGRICULTURAL PRODUCERS: AN EMPIRICAL STUDY

1. Introduction

In the trade press, a great deal of attention has been paid to shrinking margins and declining global competitiveness of American agricultural producers (see McManus, for example). In response to competitive and profit pressures, agricultural producers have begun to seek out ways to produce higher-value products and to add value to what they produce. Relatedly, there has been a virtual explosion of interest in value-added agriculture among land grant university scholars and state agricultural officials. This essay examines the business strategies of value-added agricultural producers, and contrasts their management emphasis, product offerings, and resource needs with those of commodity producers. An empirical study (i.e., a written survey and telephone interviews of a group of large, well-educated, and relatively young agricultural producers) provides data to test for differences between producers who produce differentiated agricultural products and those who do not. A strategy classification framework for agricultural producers is introduced, based on the production and marketing of differentiated agricultural products.

This essay begins with a section that provides a theoretical foundation for the study. Included is a review of theoretical work related to generic business strategies from the general management literature. Applications of these theories to agribusiness and the research issues for this essay are presented in the third section. In Section 4, the empirical methods used are

described. The fifth section contains the data and descriptive statistics. This section primarily concerns the written survey that was implemented in this study, but some consideration is also given to the telephone interviews that were part of this research. Analysis of the results from the written survey and the telephone interviews are given in the sixth section and seventh sections, respectively. Prescriptive recommendations are also included. The eighth and final section contains conclusions, limitations, and suggestions for future research.

2. Theoretical Background

Business policy researchers have made numerous attempts over the years to create classification systems for business strategies. The intuitive justification for generic business strategies is that a firm must have a unifying core idea to successfully compete in the marketplace. Some efforts to develop classification systems have focused on firms in specific situations. For example, Morrison and Roth developed a taxonomy of business-level strategies for firms in global industries. Miles and Snow made an attempt to classify business strategy in a general context. Their classification system, however, was eclipsed by Porter's (1980) system, which is described below.

In his seminal work on strategic management, Michael Porter (1980) proposes three generic business strategies for achieving competitive advantage. These strategies are the Cost Leadership, Differentiation, and Focus strategies. The Cost Leadership strategy entails outperforming competitors by producing goods (or services) at a lower cost. A firm with a successful Cost Leadership strategy is able to charge lower prices than its competitors, and earn the same profits, due to its lower cost structure. Alternatively, a firm with a successful

Cost Leadership strategy can charge the same price as its competitors and earn higher profits. Furthermore, a Cost Leader can better withstand a price war that often ensues as an industry matures. For these reasons, a Cost Leader is likely to earn higher than normal profits (Hill and Jones).

Using Porter's framework, Pearce and Robinson identify several resources and skills required to succeed with a Cost Leadership strategy. These include: sustained capital investment and access to capital, process engineering skills, intense supervision of labor, and products designed for ease in manufacture. Jain discusses attaining cost leadership as a strategic thrust. Requirements listed for this strategy include "relatively high market share; disciplined, persistent management efforts; favorable access to raw materials; substantial capital expenditures; and aggressive pricing."(p. 273) Some basic activities of the Cost Leadership strategy are focusing on internal efficiencies, achieving cost reductions, and producing standard commodities.

Firms with a Differentiation strategy succeed through different means than those with a Cost Leadership strategy. An essential feature of the Differentiation strategy is selling products or services that are perceived by the customer to be unique in some important way (Hill and Jones). By offering unique and superior products as perceived by customers, firms with a Differentiation strategy can charge premium prices relative to non-differentiated products (i.e., commodities). Because of the perceived advantages of these differentiated products, prices are based on "what the market will bear" rather than the cost of production (Hill and Jones). This allows firms who are successful with a Differentiation strategy to earn higher-than-normal profits.

A number of resources and skills necessary to succeed with a Differentiation strategy are listed by Pearce and Robinson. The resources mentioned are product engineering, corporate reputation for quality or technological leadership, and strong cooperation from channels. The skills mentioned are strong marketing abilities, creative flair, strong capabilities in basic research, and a long tradition in the industry or unique combination of skills drawn from other businesses. Jain mentions "Differentiate" as a potential strategic thrust. Requirements for this strategic thrust are a "willingness to sacrifice high market share; careful target marketing; focused technological and market research; and strong brand loyalty."(p. 274) The key activities of the Differentiation strategy are focusing on special customer needs, producing specialty products, and achieving premium prices.

According to Porter (1980), each of these two generic strategies can be used to serve either a broad market or a narrow market. Using either a Cost Leadership or a Differentiation approach to serve a targeted market segment is termed a "Focus" strategy. Regardless of market scope, however, the only viable strategies involve either Cost Leadership or Differentiation. Porter (1985) gives an extensive description of the management orientation and tactics required to succeed with each of these strategies.

This essay will examine in part whether Porter's theory applies to agricultural production firms. A more precise description of the research issues to be explored is given below.

3. Research Issues

The first application of Porter's generic strategies to agribusiness is found in Kennedy, *et al.* In their examination of competitiveness in agribusiness industries, Kennedy *et al* maintain that there are two sources for improved firm competitiveness. The first origin of competitiveness discussed is to increase the bundle of benefits offered to customers. This method corresponds to Porter's Differentiation strategy. The other source of competitiveness is the achievement of a favorable cost structure, which corresponds to Porter's Cost Leadership strategy.

Brester and Penn apply strategic business management principles to the agricultural production sector. They point out that agricultural production is undergoing extensive structural change. The drivers of this change include trade liberalization/globalization, advances in information technology, biotechnology, the decoupling of commodity program benefits from production, environmental concerns, and consumer demands (i.e., for high quality, safe, nutritious, and convenient foods). They maintain that because of these change forces, strategic management principles will be essential tools for farmers, ranchers, and managers of commodity organizations to generate competitive advantage within their respective markets.

One of the primary strategic management concepts reviewed by Brester and Penn is Porter's generic strategy framework. In their detailed explanation of the generic strategies, they provide examples of firms from the beef industry that have successfully implemented these strategies.

In applying Porter's generic strategies to agricultural production firms, Brester and Penn draw the following conclusion.

> "Over the next 20 years, farms and ranches will gravitate toward one of two production structures. The first type of production structure will be similar to many current farms and ranches in that undifferentiated commodity products will continue to be produced. Only low-cost producers will survive in this sector. . . A second category of producer will also evolve. Farms in this category will produce differentiated, identity-preserved products that focus on certain product attributes and consumer demands." (p. 8).

The goal of this essay is to empirically test whether this statement is currently true. Further, if two strategically distinct groups of agricultural producers currently exist, then one would expect them to differ in discernible ways. Based on these issues, the research questions to be explored may be stated specifically as follows:

1. Can two distinct groups (corresponding to Porter's Cost Leadership and Differentiation strategies)[1] be detected in a sample of large, progressive agricultural producers? If not, what taxonomy more accurately represents the current strategic orientation of large, progressive agricultural producers?
2. What are the differences between the groups in terms of their management emphasis,[2] product offerings, resource needs, and geographic scope of marketing?

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[1] For the remainder of this essay, these two groups will be referred to as "Cost Leading Producers" and "Differentiating Producers."

[2] As referred to above in the discussion of Porter's (1980) generic strategies.

While product offerings and resource needs were addressed above, an explanation of why the two groups should differ in their geographic scope of marketing is required. Cost Leading Producers (who produce standard commodities) do not need to engage in targeted marketing. Since there are many buyers for their undifferentiated commodities, they can generally identify and sell to a buyer who is located nearby. Supply chain participants who buy undifferentiated agricultural commodities from producers typically have the capacity to purchase and handle large volume in relation to the output of any one producer. This makes it unnecessary for Cost Leading Producers to sell to distantly-located customers even though physically their output may ultimately travel to very distant users. Differentiating Producers, in contrast, produce products that are differentiated in order to satisfy special customer needs. They must engage in targeted marketing to find buyers for their differentiated products. The process of targeted marketing involves searching broadly for attribute-sensitive customers, i.e., customers who demand the specific attributes and are willing to pay for them. For this reason, the customers of Differentiating Producers are likely to be more distantly located than those of Cost Leading Producers.

The concept of "differentiated agricultural products" (or value-added agricultural products) is central to this research. For the purposes of this essay, these products are defined as *agricultural products that deliver special features (other than lowest price) that are desired by a targeted group of customers*. Such products usually sell for a premium above commodity prices and are marketed with techniques that involve closer contact with the customer than is usual in commodity farming operations. Differentiated products do not have close substitutes, which causes them to have a relatively low price elasticity of demand.

Perhaps the simplest way to conceive of a differentiated product is as something that is not a commodity. But this merely begs the question of what is a commodity. While it is difficult to define an "agricultural commodity" precisely, one can easily provide examples and point to common characteristics of commodities. Harrington and Manchester list 17 agricultural commodities.[3] Commodities are often traded on commodity exchanges, such as the Chicago Board of Trade (CBOT). Commodities have associated grades and standards that specify the minimum values of important food safety, appearance, and/or nutritional characteristics. At the same time, substantial flexibility exists to accommodate differing levels of protein, moisture, and fat, etc. (Siebert, et al.). There are many buyers and sellers in commodity markets. Compared to differentiated products, whose price is determined by the uniqueness of their functional characteristics, commodities' prices are determined by more traditional notions of supply and demand. That is, the determination of commodity prices more closely matches the model wherein prices are determined by the intersection of aggregate supply and demand curves.

4. Method to Explore the Research Issues

A written survey and follow-up telephone interviews were used to obtain the data necessary for the research. The purpose of the survey was to collect actual data to explore the research issues related to the existence of distinctive groups of strategically similar agricultural producers and to delineate the management and resource differences between

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[3] Commodities listed include corn, cotton, fruit and tree nuts, peanuts, rice, sorghum, soybeans, tobacco, vegetables, wheat, beef cows, broilers, eggs, fed cattle, hogs, dairy products, and sheep.

these groups. The survey subjects were the alumni and participants of The Executive Program for Agricultural Producers (TEPAP), a continuing education program sponsored annually by Texas A&M University. This program has enrolled nearly 300 individuals since its inception in 1991.

TEPAP is an intensive, week-long program[4] that provides advanced management training to agricultural producers. The program is marketed to owners of large, progressive agricultural production operations from across the United States. TEPAP has been featured in several trade publications, including *Top Producer*, *Ag Executive*, and *Ag Lender* magazines. According to Russnogle, this program attracts the best and brightest professionals in agricultural production. He even refers to TEPAP as "the Super Bowl of ag management meetings." The level of management expertise and commitment to achieving success of the TEPAP participants resulted in their developing and implementing sophisticated, well-articulated business strategies. This made them an ideal group of subjects for this research.

The written survey was designed to obtain information about the product offerings, management emphases, and resource needs of the TEPAP alumni. The data collecting process was intended to shed light on the strategies, activities, and functions of respondents who produce differentiated products as well as those who do not. A particular point of interest was how widespread the production and marketing of differentiated products is among members of this group. To address these issues, questions on the survey were designed to determine the percentage of respondents who produce differentiated products,

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[4] There are two levels of the TEPAP program. Producers who have completed the first level can enroll in the second level the following year.

as well as which differentiated products were being produced and the special features of these products. The survey instrument also solicited information regarding the respondents' geographic scope of marketing and their level of satisfaction with their performance. Demographic data (e.g., age, years of farming experience, and educational attainment) and general information about the respondents' farming operations such as farm size were also collected. Finally, subjects were asked whether they were willing to participate in a follow-up telephone interview. See Appendix A of this essay for the full text of the written survey.

Prior to finalizing the written survey, a draft copy was distributed to several faculty members and graduate students, some of whom have agricultural production experience. Feedback was solicited, and the survey instrument was adjusted to improve its clarity and to remove potential ambiguity. This method of survey instrument development is suggested by Dillman.

After analysis of the written survey data was completed, volunteer respondents were contacted by telephone to obtain more detailed information related to their agricultural production and marketing practices. Interviews were conducted with subjects who produce differentiated products as well as those who do not produce differentiated products. This allowed the differences between the two groups (e.g., in the resources required to implement their strategies) to be identified and analyzed.

In semi-structured interviews, the danger exists that the interviewer will introduce bias into the responses through the wording and other characteristics of the questions (Silverman). If this occurs, it is unlikely that different researchers would make similar observations on different occasions. In other words, the knowledge generated through the use of biased

interviewing techniques will not have the characteristic of reliability. To avoid this potential pitfall, the lead field researcher executed a mock interview with a faculty member who is also an agricultural producer. The results of the mock interview were evaluated by the field researcher and dissertation supervisor, and necessary adjustments to the style and content of the interview script were made to help ensure the reliability of the knowledge generated. The open-ended, broad nature of the interview questions is also a key protection against the interviewer eliciting biased responses. Finally, to avoid potential interviewer-to-interviewer bias, one researcher conducted all of the telephone interviews.

5. Data and Descriptive Statistics

The purpose of this section is to provide basic descriptive information regarding responses to the written survey and to give an overview of the telephone interviews. Analysis of the data will be given in the following two sections. In the first stage of data collection, a mail survey was sent to 236 recent graduates of the TEPAP program. The same written survey was distributed to 110 participants of the TEPAP session held in January, 2000.

A total of 141 responses to the written survey were received, which is an overall response rate of 41%. Statistical tests were performed to determine if there were differences in the responses of the subjects in the two administrations. The conclusion of these tests was that there were no significant differences. Out of 141 respondents, 79 indicated that they produce products "that deliver special features (other than lowest price) that are desired by

a targeted group of customers" (i.e., "Differentiated Products").[5] Thus, respondents who produce differentiated products made up 56% of the responses received. Sixty-two respondents (i.e., 44%) indicated they do not produce such products.

The written survey also asked the producers who indicated that they grow differentiated agricultural products the approximate percentage of their gross farming revenues that comes from the sale of these products. Seventy-four producers responded to this question. Responses ranged from a minimum of 2% to a maximum of 100%. The mean response to this question was 43.5%, and the standard deviation was .302. There was substantial variation among responding producers in terms of the fraction of revenues that come from the sale of differentiated agricultural products.

Compared to the overall population of U.S. farmers, respondents to the written survey were younger. Among the responses to the age question, 59.7% were between 41 and 55 years old, only 10.1% were between 56 and 69, and none were 70 or older. In contrast, 49% of U.S. farm operators are at least 55 years old (USDA, 1997 Census of Agriculture). Written survey respondents indicated that they have high levels of education. Nearly half (48.2%) said they completed college or a technical degree, and 24.1% had graduate training. Survey respondents also reported relatively large farms, in terms of acreage. The smallest farm size reported was 500 acres. By way of comparison, 82% of U.S. farms are less than 500 acres (USDA, 1997 Census of Agriculture). The mean response for farm size was 7,418 acres. The amount of revenues received is another measure of firm size. To gage this variable, subjects

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[5] On the written survey, products meeting the definition given above were called "value-added" agricultural products. This term was chosen because it is familiar to agricultural producers.

were asked for their "firm's approximate average annual gross sales for the last three years." The modal response was between $1 million and $4,999,999 in annual gross sales.

Type of enterprise (e.g., dairy) may have a major impact on the operational and strategic management approach of a given farming operation. For this reason, information was solicited from subjects regarding the enterprise(s) that comprise their businesses. Subjects were asked what approximate percentage of their gross farm sales come from the following activities: Cash Crops, Livestock (Not including dairy), Dairy, Fruits and/or Vegetables, Nursery/Greenhouse, and Other. The primary enterprise of respondents is listed in Table 1.1 below.

Table 1.1: Product (or Enterprise) Mix of Written Survey Respondents.

Type of Enterprise	**Number (%) of Respondents with *at Least Some* Sales from this Enterprise**		**Number (%) of Respondents with *50% or More* of Their Sales from this Enterprise**	
1. Cash Crops	119	(84.4%)	90	(63.8%)
2. Livestock (Not including dairy)	62	(44.0%)	22	(15.6%)
3. Dairy	13	(9.2%)	11	(7.8%)
4. Fruits and/or Vegetables	24	(17.0%)	17	(12.1%)
5. Nursery/Greenhouse	1	(0.7%)	0	(0%)
6. Other	35	(24.8%)	6	(4.3%)

The most important point from this table is the overwhelming majority (84.4%) of cash crop producers among the respondents. Forty-two respondents (29.8%) reported 100% of their gross farm sales were from cash crops. After cash crop enterprises, livestock (not including dairy) was the most common type of enterprise. While nearly half of the respondents (44%) reported at least some gross farm sales from livestock, only 15.6% reported at least half of their gross farm sales were from livestock. Smaller (but still substantial) groups reported sales from fruits and/or vegetables and from dairy. There was just one respondent who indicated gross farm sales from nursery/greenhouse.[6] Finally, less than a quarter of respondents reported gross farm sales in the "Other" category. The majority of the respondents who reported sales in the "Other" category indicated that less than 20% of their gross farm sales were derived from other sources.

The respondents who indicated that they do indeed produce differentiated products were asked specifically what those products were and what features differentiated them. Table 1.2 below summarizes this information. Two results from this table are particularly noteworthy. First is the predominance of grains among the differentiated products. As many as 108 out of the 162 products mentioned (67%) were either corn, soybeans, or wheat. According to this group of survey respondents, therefore, *it is possible to differentiate these types of crops*. The other noteworthy fact is how commonly "seed" was mentioned as a special feature. Clearly, at least some respondents view seed crops (e.g., corn, soybeans, wheat, dry edible beans, and potatoes) to be differentiated products. The absence of certain commodities from Table 1.2 is also notable. Fluid milk was not mentioned as a differentiated

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[6] This respondent received 20% of sales from Nursery/Greenhouse.

product, for example.[7] Of course, due to the distinguishing characteristics of the sample group, the products listed in the table should not be interpreted to be representative of agricultural producers in general, and some sample-to-sample variability is to be expected.

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[7] One telephone interview volunteer mentioned that "Milk is milk."

Table 1.2: Differentiated Products Produced by Written Survey Respondents (with associated special features).

Product	Frequency Listed	Examples of Associated Special Features
1. Corn	50	seed; waxy; high oil; increased protein; high phytate availability; white; cleaning and separating human grade; high oleic oil; non-Genetically Modified Organism (non-GMO): identity preserved (I.P.); hard endosperm: food grade; white: unique handling for food; pesticide-free
2. Soybeans	39	seed; low fat; food grade; tofu; Natto: special sizing and quality requirements; packaging; rigorous quality; non-GMO identity preserved (I.P.); delivery on demand; yield stability; proprietary genetics; seed: conditioned and packaged, high quality; white hilum seed; clear hilum; high protein; high sucrose; Amylase for Burger King oil; high sucrose; low oleic oil
3. Wheat	19	seed - unique varieties, certified for genetics, purity, ready to plant, seed treatment, pedigreed, cleaned, tested and guaranteed for disease and germination; special gluten quality; hard red/white
4. Vegetables	11	special markets, cuts, packaging
5. Dry Edible Beans	9	certified seed; unique varieties; packaging; organic
6. Beef	7	high quality meat; hormone free; process verified
7. Potatoes	4	seed: sorted and shipped; chipping: sized, washed, hydro-cooled); organic; unique varieties; foil-wrapped for baking
8. Popcorn	3	gourmet, quality, unique variety
9. Alfalfa	3	quality dairy hay; high Relative Feed Value (RFV) - barn stored
10. Nuts	3	slicing, packaging
Other	20	turfgrass, barley, race horses, hairy vetch seed, I.P. Kentucky Bluegrass seed, and compost

Respondents were asked to rate how important a number of resources were to their "long-term ability to outperform competitors in satisfying customers." The following resources were listed, in order, on the written survey: Unique Land Features, Unique Climactic Features, High Quality Employees, Financial Capital Availability, Marketing Skills, Production Skills, Use of Consultants, Use of Expertise from Universities, Special Relationships with Suppliers, Special Relationships with Customers, Organizational Structure, and Transportation Infrastructure. "Production Skills" was rated the most important resource and "Use of Expertise from Universities" was rated the least important. While "Unique Land Features" ranked eleventh out of 12, it is noteworthy that this resource had the highest variability in responses, as measured by the standard deviation. Differences in how important these resources and skills are to respondents who produce differentiated agricultural products and those who do not will be explored in the following section.

In-depth telephone interviews constituted the second phase of data collection. The final question on the written survey was whether respondents would be willing to participate in a follow-up phone interview. From among the 141 written survey respondents, seventy-two volunteered for an interview. Sixty of these volunteers were successfully contacted for interviews. Of these 60, 39 were producers who indicated that they produced differentiated products, and 21 had indicated that they did not produce differentiated products.

The interviews ranged in length from 15 to 90 minutes, with most of them lasting approximately 25 minutes. With regard to interview style, open-ended questions were asked to clarify and expand upon answers given on the written survey. Interviews have an advantage over written surveys in that more detailed information can be obtained, e.g., "how"

and "why" responses. The interview questions were designed to make the most of this advantage. Analysis and discussion of the telephone interviews will be presented in section seven.

6. Analysis of Results and Discussion: Written Survey

As stated above, one of the objectives of this research was to determine whether two distinct groups (corresponding to Porter's Cost Leadership and Differentiation strategies) could be detected in a sample of large, progressive agricultural producers. Recall that Brester and Penn maintained that in the future, one group of agricultural producers would grow undifferentiated commodities and the other group would grow differentiated products. The 79 respondents who indicated that they produce differentiated products were assigned to the "Differentiating Producer" group, and the 62 respondents who indicated that they do not produce differentiated products were assigned to the "Cost-Leading Producer" group.

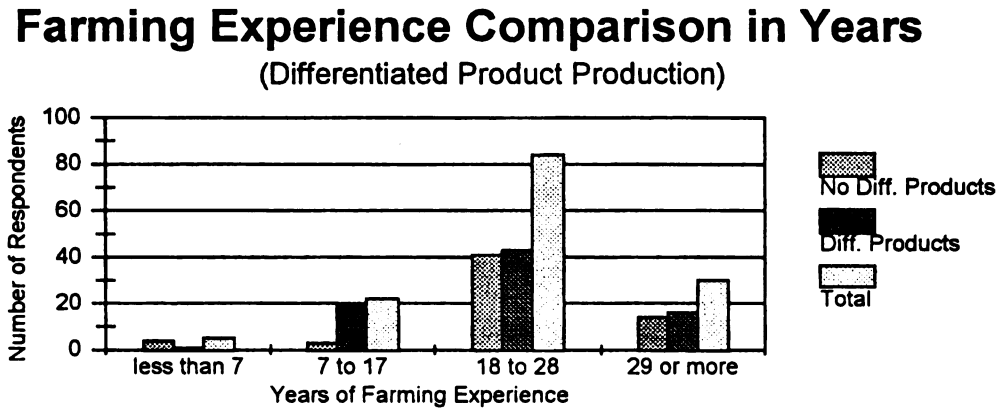
The first area of potential difference between the two groups to be explored will be demographic characteristics. The two groups were cross-tabulated versus all of the demographic characteristics on the survey. Statistical tests were performed to detect differences between the groups. Based on Pearson's chi-square test, no statistically significant difference was determined for the following characteristics: age, education level, farm size, role within the farming operation, responsibility for long-run business strategy (yes or no), and responsibility for day-to-day operations (yes or no). Only one demographic variable exhibited a statistically significant difference between the two groups: years of farming experience. The Pearson's chi-square statistic had a two-sided asymptotic

significance of .008 for this variable. Differentiating Producers had less farming experience than Cost-Leading Producers. Figure 1.1 illustrates this difference between the two groups.[8] Since there was no difference in the age of the two groups, this may imply that Differentiating Producers were more likely to have worked in a non-farming occupation than Cost-Leading Producers. It is possible that through their non-farm work experience, Differentiating Producers acquired some form of human capital that helps them to produce and/or market differentiated products.

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[8] Since more Differentiating Producers than Cost-Leading Producers responded to the survey, we would expect there to be more Differentiating Producers in each category that corresponds to an experience level. In fact, there are more Differentiating Producers in three out of four categories. The category that has the greatest difference in the number members from each of the two groups is the "7 to 17" years of farming experience group. There are many more Differentiating Producers than Cost-Leading Producers in this category, which is one of the less experienced categories. In fact, the difference in this category is enough to cause the groups to have a statistically significant difference in this demographic characteristic. Thus, the statistical results indicate that the Differentiating Producers have less farming experience than do the Cost-Leading Producers.

Figure 1.1:


Farming Experience Comparison in Years
(Differentiated Product Production)
Number of Respondents
100
80
60
40
20
0
less than 7
7 to 17
18 to 28
29 or more
Years of Farming Experience
No Diff. Products
Diff. Products
Total

Another area of potential difference between the two groups is what they emphasize (i.e., certain activities) as managers. To test for differences, survey subjects were shown three pairs of activities for which a tradeoff likely exists. The activity pairs are listed in Table 1.3 below. Subjects were asked to indicate the mix of these activities that they pursue in their operations by circling a number on a six-point Likert scale. According to Porter's (1980) theory of generic strategies, Cost-Leading Producers would be expected to emphasize Activity A (Focusing on Internal Efficiency, Achieving Cost Reductions, and Producing Standard Commodities) in each pair. It would also be expected that Differentiating Producers would emphasize Activity B (Focusing on Special Customer Needs, Achieving Premium Prices, and Producing Specialty Products) in each pair.

Table 1.3: Activity Pairs to Indicate Management Emphasis on Cost or Differentiation.

Activity Pair Number	Activity A	Activity B
1	Focusing on Internal Efficiency	Focusing on Special Customer Needs
2	Achieving Cost Reductions	Achieving Premium Prices
3	Producing Standard Commodities	Producing Specialty Products

The results were as expected: the two groups differed significantly by these three measures. The two-sided asymptotic significance of the Pearson chi-square statistic was .000 for all three tests. According to these measures, therefore, there is a significant difference between the two producer groups in the management activities emphasized. The tests clearly

showed that the management emphasis of growers who produce differentiated agricultural products is different from that of growers who do not produce differentiated products.

Since one group produces products desired by a targeted group of customers and the other group does not, it follows logically that their marketing approach will differ. One specific aspect of marketing that would be expected to vary between the groups is the geographic scope of direct marketing. The reasons why Cost-Leading Producers would be expected to market their product in a narrower geographic region were discussed in the "Research Issues" section above. The Cost-Leading Producers grow standardized commodities for which there are many buyers, and they market their output with commodity-oriented marketing techniques (i.e., techniques that do not focus on special product features or special customer needs). Thus, Cost-Leading Producers have no economic incentive to sell directly to distantly-located buyers. Differentiating Producers, in contrast, market products with special features to targeted customers. Since these customers have special needs, they may not be located nearby. We would thus expect Differentiating Producers to directly market their products over a broader geographic area than Cost-Leading Producers.

To determine how widely (i.e., geographically) sample members market what they produce, subjects were asked where they directly market their farm products. Four choices were given: local, regional, national, and international.[9] Responses to this question allowed for a comparison of the geographic scope of marketing of the two groups of producers. A graph of the responses is given in Figure 1.2, and statistical results of the comparison are listed in Table 1.4. The two groups exhibited no difference in the relative frequency of local

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[9] Subjects were asked to check all that apply.

marketing. This practice is equally common in both groups. With regard to the other three marketing zones (i.e., regional, national, and international) there *was* a significant difference in the frequency of response. Differentiating Producers were more likely to market their products in all three of these more-distant regions. In fact, the modal response of Cost-Leading Producers is "local," and the distribution tails off from there. (See Figure 1.2.) In contrast, the modal response for Differentiating Producers is "regional." The written survey results thus confirm the expectation that Differentiating Producers market their products over a broader geographic area. This empirical evidence suggests that the marketing function of the two groups differs, at least with regard to geographic scope.

Figure 1.2:

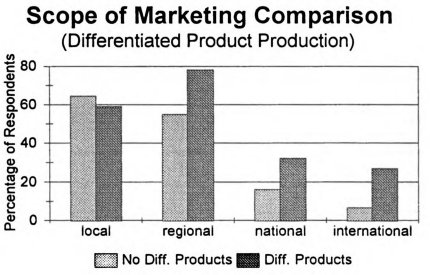

Scope of Marketing Comparison
(Differentiated Product Production)
Percentage of Respondents
80
60
40
20
0
local
regional
national
international
No Diff. Products
Diff. Products

Table 1.4: Comparison of the Geographic Scope of Marketing, Cost-Leading Producers and Differentiating Producers (Statistical Results).

Marketing Zone	% Yes: Cost-Leading Producers	% Yes: Differentiating Producers	Pearson's Chi-Square Value	Two-Sided Asymptotic Significance, 1 degree of freedom
Local	64.5%	59%	0.448	.503
Regional	54.8%	78.2%	8.647	.003
National	16.1%	32.1%	4.671	.031
International	6.5%	26.9%	9.869	.002

Porter (1980) suggests that firms pursuing a Cost Leadership strategy require different resources than firms pursuing a Differentiation strategy. If two truly distinctive groups corresponding to these strategies exists in the subject pool, it would be expected that the groups respond differently to questions pertaining to how important certain resources are to them. To test for differences related to this area, responses to the questions about the importance of the resources listed in Section 5 above were compared. Statistical results of this comparison are shown in Table 1.5.

Table 1.5: Comparison of the Importance of Resources and Skills,[10] Cost-Leading Producers and Differentiating Producers (Statistical Results). Note: Items where the two groups answered differently (i.e., statistically significant difference at the 10% level) are in italics.

Resource	Mean Rating: Cost-Leading Producers	Mean Rating: Differentiating Producers	Pearson's Chi-Square Value	Two-Sided Asymptotic Significance
Production Skills	*4.459*	*4.2653*	*6.385*	*.094*
Marketing Skills	4.1613	4.2532	1.926	.588
High Quality Employees	4.1452	4.1139	.718	.949
Special Relationships With Customers	*3.5246*	*4.4231*	*25.594*	*.000*
Financial Capital Availability	4.0492	3.7468	5.029	.284
Special Relationships With Suppliers	3.7167	3.7468	.490	.921
Transportation Infrastructure	3.5333	3.6753	5.892	.207
Organizational Structure	3.5246	3.443	4.776	.311
Use of Consultants	3.3548	3.4304	1.597	.809
Unique Climatic Features	2.8833	3.3165	5.920	.205
Unique Land Features	2.9032	3.1013	1.055	.901
Use of Expertise from Universities	2.9333	2.8987	1.497	.827

[10] Subjects were asked, "How important is each of the following to your long-term ability to outperform competitors in satisfying customers?" Respondents circled a number on a five-point Likert scale for each item. with one meaning "unimportant" and five meaning "extremely important."

Two resources (i.e., production skills and special relationships with customers) had significantly different importance ratings by the two groups. Production skills were more important to Cost Leading Producers and special relationships with customers were more important with Differentiating Producers. The greater importance the Cost Leading Producers placed on production skills is consistent with Porter's (1980) Cost Leadership strategy. This high rating for the importance of production skills (relative to Differentiating Producers) may be related to some of the characteristics of a Cost Leadership strategy mentioned earlier. These characteristics include process engineering skills, intense supervision of labor, and persistent management efforts. The greater importance that Differentiating Producers placed on special relationships with customers is consistent with Porter's (1980) Differentiation strategy. Differentiating Producers can better learn about customer needs and perceptions of product features if they have special relationships with customers (and potential customers). In other words, having special relationships with customers facilitates focused market research. Emphasizing special relationships with customers also corresponds with careful target marketing, which is another aspect of the Differentiation strategy.

The fact that these two groups rated only two resources out of 12 differently with regard to importance could indicate that the groups (as defined) are not truly distinctive. Alternatively, it could indicate that the terms used to identify the 12 resources on the survey instrument have different meanings to the two groups. For example, subjects were asked to rate how important "Marketing Skills" are to their long-term ability to outperform competitors in satisfying customers. Both groups indicated that this item was the second

most important resource or skill, and no statistically significant difference between the responses of the two groups was detected. It is quite possible, however, that *the two groups had different marketing skills in mind* when answering that question.[11] The fact that the two groups market over different geographic areas tends to support this notion. This issue was further explored in the follow-up telephone interviews.

The response rates to questions related to income are typically quite low for written surveys, making analysis and conclusions difficult. On the written survey for this research, therefore, subjects were asked for their level of satisfaction with their profitability and returns. The responses of the two groups to this performance-related question were compared. No statistically significant difference was detected between the responses of the two groups to this question. Thus, the written survey suggests that neither strategy is more likely to result in producers being more satisfied with their financial performance. And if there is a positive relationship between financial performance and satisfaction with financial performance, the results suggest that there is no systematic difference between the two groups in financial performance. Using this logic, the conclusion could be drawn that neither strategy provides a consistently superior profitability and returns. This is consistent with Porter's contention that either strategy can be successfully executed.

The results of the written survey provided some evidence that supports the existence of the hypothesized two groups of agricultural producers. One notable difference relates to

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[11] E.g., to a Cost-Leading Producer, "Marketing Skills" may imply the ability to predict commodity price movements through fundamental and technical analysis. To a Differentiating Producer, in contrast, "Marketing Skills" may imply the ability to identify buyers with special needs and to secure them as customers.

management emphasis. Cost Leading Producers emphasized internal efficiency, cost reductions, and producing standard commodities, while Differentiating Producers emphasized special customer needs, premium prices, and producing specialty products. Another area of difference pertains to geographic scope of marketing. Differentiating Producers were more likely to directly market their products regionally, nationally, and internationally than were Cost Leading Producers.

The written survey also indicated, however, that the Differentiating Producers and the Cost-Leading Producers were similar in many ways. As mentioned above, several demographic questions were included on the written survey. The two groups differed in only one characteristic, i.e., years of farming experience. This suggests that production and marketing of differentiated agricultural products is not limited to producers with particular demographic characteristics. For example, the results did not indicate that only young producers are willing and able to operate in product-oriented agricultural markets. Likewise, the results did not suggest that only college graduates can be involved in product-oriented agriculture. The normative implication for agribusiness decision makers and their advisors is that producing differentiated agricultural products should not be ignored as a strategic alternative simply due to demographic factors such as age or education level.

Among the 12 resources and skills rated for importance, two (production skills and special relationships with customers) exhibited a difference between the two groups. But due to potential ambiguity in the underlying meanings the terms had for the two groups, the differences in the importance of resources and skills are not meaningful to interpret. The broad conclusion of the written survey is that the existence of two internally homogeneous

groups was confirmed, but not conclusively. While some substantial differences were observed, there was not as great a contrast as was expected. For this reason, the telephone interviews were conducted with a goal of further probing and clarifying the strategic differences among agricultural producers in the sample pool.

7. Analysis of Results and Discussion: Telephone Interviews

7.1 Fundamental Concepts and Analytical Approach

As mentioned above, questions on the telephone interviews were designed to obtain more detailed information on the topics explored in the written survey. Questionnaires were tailored to the written survey responses of each interview volunteer. Some questions were only applicable to those interview subjects who indicated that they produce differentiated products. Examples of such questions include how long respondents have been producing differentiated products and what attracted them to produce these products. Other questions were only applicable to those interview subjects who indicated that they do not produce differentiated products. For example, these producers were asked what led them not to produce differentiated products.

Interview questions delved more deeply into subjects' management emphasis. Subjects were asked specifically what they do to carry out their focus on the applicable activities listed in Table 1.5 above. Questions were also included to obtain more detailed information about the resources required in their respective farming operations. Open-ended questions about the resources and skills that subjects consider to be most important to the long-term success of their farming businesses were included at the beginning and the end of

the telephone interviews. The intention was to give ample opportunities for subjects to provide accurate information *as applied to each of their individual situations*. Interview subjects had broad opportunities to give answers that could be considered "outside the box." In other words, they were not limited to discussing the resources and skills listed on the written survey.

In analyzing the written surveys, it was hypothesized that the producers could be divided into meaningful groups based solely on whether or not they produced differentiated products. However, a different and more complex picture related to differentiated product production emerged from the telephone interviews. If a grower produces differentiated agricultural products, it provides some indication of his strategy. But the interviews revealed that this characteristic, by itself, does not fully distinguish the complete set of strategies of agricultural producers. In addition to production of differentiated products, two other characteristics that distinguish different strategies were identified. These identifying characteristics are the presence or absence of a *differentiated production system* and whether or not the producer engages in *differentiated marketing strategy*. These concepts will be explained below.

In order to have a differentiated production system, it is necessary but not sufficient to produce differentiated products. In addition, an agricultural producer must significantly change his production system from the strictly cost-minimizing, baseline commodity production system. This typically entails a willingness to incur higher costs to produce the products preferred by the relevant customer(s). The following quote from one of the

interviews illustrates the explicit choice to incur higher costs to produce differentiated products.[12]

> "If you're in commodity production and marketing there isn't much you can do to differentiate on quality. But once you get into specialized things, you have to say, 'That extra 10 cents an acre [in cost reductions] that I used to really push for, I'm going to have to just forget about that because I need to make sure that I'm providing the service and quality that my customer's got to have.'" (Respondent #282.)

Another example from the interviews will clarify the meaning of a differentiated production system. The example pertains to a producer of seed soybeans and seed wheat.[13] To be a successful seed producer, this respondent stated that one has to provide a high quality product (i.e., pure, not mixed varieties, damage must be low, and germination must be high). This producer stated that he must store the seed he produces, sometimes for six to seven months. The producer described how challenging it is to prevent the seed from getting out of condition. The seed can get hot in the bins, and the individual responsible for storing it has to monitor it and keep it aerated so that it remains cool. The producer must harvest the seed under the correct moisture conditions. If it is too dry, the seeds will crack, and if it is too wet, the crop will mold in the storage bins. This implies that there is an acceptable humidity range for harvest. According to this respondent, "When customers call you and say, 'Can you bring it Friday at one o'clock,' they don't mean the Thursday before or the Monday after. They want it Friday at one o'clock." This comment emphasizes that in addition to providing

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[12] The deliberate nature of the choice to incur higher-than-minimum costs should be contrasted with higher costs resulting from a lack of knowledge or skill, organizational slack, etc.

[13] Respondent #504.

a product that conforms to specifications, producing differentiated products may involve performing customer service activities that are not usually associated with commodity production.

The second characteristic (besides the existence of a differentiated production system) that proved important in distinguishing among the producers was whether or not the producer has a *differentiated marketing strategy*. Producers who have implemented such a strategy engage in marketing activities that target specific customers. Effectively employing a differentiated marketing strategy often involves certain activities not associated with commodity marketing. Many of these activities have to do with customer contact. For example, producers with this strategy frequently visit customers face-to-face to ascertain customer needs. Responding to customer requests is also an important element of a differentiated marketing strategy.

The marketing practices that characterize a differentiated marketing strategy may be contrasted with those of producers who do not have a differentiated marketing strategy. The producers with an "undifferentiated" marketing strategy emphasize the use of different marketing activities and tools. These include hedging, trading in futures and options, using forward contracts and basis contracts. The producers with an undifferentiated marketing strategy often use marketing consultants or marketing advisory services. One skill they emphasize is "knowing when to pull the trigger" (i.e., sell their commodities). Finally, maximizing payments received from government programs is important to some of these producers.

The approach of producers who have a differentiated marketing strategy is much different. The way in which one interviewed producer with a differentiated marketing strategy responds to customer requests provides a concrete example of some of the key features of this type of strategy. In particular, it illustrates how a differentiated marketing strategy, when implemented properly, can contribute to competitive advantage. (See quote below.)

> "Sometimes you get some trouble when somebody says, 'Hey, can you do this?' Out of 100 things like that, you might end up doing 50 that, on a pilot process, take way more time and effort than they're worth . . . But of the 50 that you do, there may be two that, in the end, turn out to be something that amount to changing your *entire* business. But if you don't look at the 100, and you don't do the 50, you don't find out which those two are. Many people look at the bottom line on those pilot projects and say it isn't worth it. Well, it isn't worth it; you end up losing money on most of them. But it's not a huge amount of money. It's small things, nickel and dime stuff. Mostly, it's just an awful lot of extra work for not much gain the *first* time. But if you don't do them, you don't get in the door. For example, we are a certified organic processor. The only reason we are a certified organic processor is somebody said, 'Hey, can you process some organic stuff?' Of course, we don't grow organic stuff, but we process it. We said, 'Sure, let's try it.' It turned out to be just a *nightmare*, but we *learned* some stuff from it. But later on, the next guy approached us and said, 'Can you do just one container of organic wheat?' There's just no way you can possibly charge enough to make it worth your while. But it was somebody we'd never had any dealings with, and somebody we know does a lot of organic business. So we said 'sure.' We ended up processing this one container lot of wheat, putting it in little bags, stacking them to the ceiling by hand. It's a real *pain*. But this year, we did just under 1,000 metric tons of processing for that company. And they're talking about doubling their acres this year. We'll see. I never say it's a success until you've got four to five years under your belt. But from saying, 'Let's try this' for a company that we didn't know and they didn't know us. Now they *know* us. They know that we can meet their needs and do their quality, and provide the kind of service they want. And so, we're one of, at least, their favorite processors. And that's basically how things happened. But if a guy says, 'Gee whiz, we're too busy already. I can't do that container of wheat. What a pain.' Then it never would have happened." (Respondent #282).

The quote above highlights some prominent issues related to the marketing of differentiated agricultural products. First, a differentiated marketing strategy requires attentiveness to customer needs. Responding to customer requests is a logical successor of this attentiveness. Further, responding to customer requests often requires making significant and innovative changes to operations, particularly in service. These changes usually involve tailoring operations to meet the needs of particular customers. If properly carried out, this cycle of ascertaining customer needs, responding to requests, and customizing operations has a dynamic effect over time. Specifically, it cements the producer-customer relationship so that continued sales (of perhaps even greater volume) over the long term are more assured.

This cycle also enhances the producer's reputation for superior quality and/or service, which makes obtaining new customers easier and may serve as a barrier for others to enter differentiated product markets. Chance and path-dependency also play roles in the evolutionary development of 1) operations, 2) relationships with customers, and 3) producer reputations. In the preceding quotation, it is likely that chance had a role in the first customer approaching the producer and asking him to process organic wheat. And path-dependency is illustrated by the fact that once the producer decided to become a certified organic processor and dedicated sufficient resources to accomplishing this goal, his ability to meet the needs of the second, larger customer was determined. Asset specificity/fixity[14] and the biological nature of agricultural production (with its long production cycle) serve to draw out the strategy development process and reinforce its path-dependent nature.

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[14] Related to both physical assets and human capital.

The marketing practices discussed above are some of the more common features of a differentiated marketing strategy. However, this discussion does not provide an exhaustive list of these practices. Further explanation and examples will be given in the next section, in the descriptions of the individual types of strategies for agricultural producers.

7.2 Strategy Classification Framework for Agricultural Producers

As discussed above, this essay undertook to empirically test for the existence of two strategically distinct groups of agricultural producers.[15] While the written survey results suggested that there were two groups with different strategies, the evidence was not entirely conclusive. Because the written survey did not indicate as much difference between Differentiating Producers and Cost-Leading Producers as suggested by theory, the data from the interviews was examined to see if there was a more meaningful approach to classifying producers based on their respective business strategies.

As just discussed in Section 7.1, the analysis of the telephone interviews identified two distinguishing characteristics of strategy in addition to the production of differentiated products. These two other features of strategy are the existence of a differentiated production system and the existence of a differentiated marketing strategy. All three characteristics may be combined to form a strategy classification framework for agricultural producers. This framework is presented in Table 1.6 below.

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[15] Namely, one group that produces differentiated agricultural products (that corresponds with Porter's Differentiation strategy) and one group that does not produce differentiated agricultural products (that corresponds with Porter's Cost Leadership strategy).

Table 1.6: Strategy Classification Framework for Agricultural Producers[16] (based on data from TEPAP telephone interviews).

Strategy Group ☛	*Commodity Producer*	*Reverting Commodity Producer*	*Transitional Producer*	*Product Production Specialist*	*Product Producer-Marketer*
Differentiated products?	N	Y	Y	Y	Y
Differentiated production methods?	N	N	N	Y	Y
Differentiated marketing methods?	N	N	Y	N	Y

The strategy classification framework for agricultural producers provides structure to a new taxonomy of strategies for agricultural production firms. Based on data from the interviews, producers within each strategy group have certain common (or typical) attributes, which will be described below. The number and average size of firms in each strategy group are given in Table 1.7. The remainder of this section presents a stylized description of each generic strategy based on the composite profiles that emerged from the analysis of the interview data. In these descriptions, the management emphasis of each group is highlighted. Other characteristics addressed are the product offerings and resource needs of the interview

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16 Three other cases are possible. These involve differentiated production methods and/or differentiated marketing methods with undifferentiated (commodity) products. These cases do not make strategic sense, however, and were not observed among the interview subjects.

subjects who are members of each generic strategy category. When appropriate, quotations from the interviews are included to support the descriptions.

Table 1.7: Number of Interview Subjects in Each Generic Strategy Category, and Average Size.

Generic Strategy Category Name	Number of Subjects	Mean Size (Acres)	Median Size (Sales)
Commodity Producers	15	6012	"between $1 million and $4,999,999"
Reverting Commodity Producers	6	3642	three each: "less than $1 million" and "between $1 million and $4,999,999"
Transitional Producers	11	3459	"between $1 million and $4,999,999"
Product Production Specialists	4	5588	two each: "less than $1 million" and "between $1 million and $4,999,999"
Product Producer-Marketers	24	4197	"between $1 million and $4,999,999"

7.2.1 Commodity Producer (CP)

A Commodity Producer has a management orientation that corresponds to the one traditionally taught in farm management courses. First, he produces standard commodities. The commodities mentioned by the Commodity Producers (CPs) interviewed include: fluid milk, beef, rice, soybeans, wheat, corn, hay, and potatoes. Second, CPs recognize that achieving and maintaining a low-cost position are essential to their success, so controlling

costs is a primary emphasis. Further, they often explicitly express that cost leadership is their strategic approach to providing customer value. Some CPs expressed that they cannot control prices, therefore they emphasize cost reduction (which they *can* control).

Preparing an annual budget is an important activity for Commodity Producers. These producers also frequently monitor performance versus budget at the end of the operating cycle. Many CPs also compare their performance to published standards, e.g., from TEPAP or *Top Producer* (a trade publication). Along the same lines, the importance of Standard Operating Procedures (SOPs) was also emphasized by CPs.

Commodity Producers recognize the importance of marketing to their success. These producers take a traditional, commodity-oriented approach to marketing.[17] They emphasize the use of cash sales, options, HTA contracts, and other similar marketing tools. CPs typically invest significant time and other resources into marketing. For example, many CPs subscribe to marketing advisory services and/or hire marketing consultants. Some have attended multi-day seminars to learn how to use commodity marketing tools. CPs also often mentioned that they monitor the market (i.e., the CBOT) daily, or even more frequently. This reflects the prevalent view among this group that premium prices can only be achieved through proper timing, i.e., "knowing when to pull the trigger." Accurate knowledge of the cost of production (resulting from the budgeting process referred to above) is also necessary to successfully market commodities. The concept is that "you have to know what your cost

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[17] Traditional marketing methods may be contrasted with the differentiated marketing methods employed by certain other generic strategy groups to be described below.

of production is in order to know when available prices allow you to profitably market your commodities."

Many Commodity Producers in the sample have considered producing differentiated (or value-added) products but decided against it. Some CPs mentioned specific barriers to producing these products, e.g., that markets are located too far away. Other CPs made more general comments, such as "I've never found anyone willing to pay me enough to make it worth the trouble" to produce differentiated products.

Commodity Producers tend to have fairly large farms. The average size of the farming operation among the 15 Commodity Producer subjects was 6,012 acres, which was the largest of all of the groups. This is consistent with the logic that CPs succeed by being cost competitive, and that cost competitiveness is achieved in part through economies of scale.

7.2.2 Reverting Commodity Producer (RCP)

A Reverting Commodity Producer (RCP) is in many respects similar to a Commodity Producer. Regarding marketing, both types of producers tend to focus on traditional, commodity marketing tools and activities. And both types of producers tend to emphasize cost minimization in their operations. What distinguishes RCPs is that they have exhibited a willingness to produce differentiated products. The types of differentiated products produced by RCPs include: human grade corn, high oil corn, pesticide free corn, organic corn, food grade soybeans, high oleic oil soybeans, organic wheat, and U-pick raspberries.

While the Reverting Commodity Producers in the sample indicated that they produced differentiated products, they had all discontinued production of these products at some time in their respective operations. The most commonly mentioned reason for discontinuing

production of differentiated products was because the premium for the product had disappeared. This is one reflection of RCPs' commodity orientation, i.e., 'premiums' are used to compare prices received for differentiated products to prices of corresponding commodities. Yields for differentiated products are also often compared to those of their corresponding commodities. A typical RCP comment related to why production of a differentiated product was discontinued was, "The yield drag is not offset by the premium." Some RCPs expressed an unwillingness to significantly alter their operations for the production of differentiated products. When asked "Why did you think you could succeed with these products?", for example, an RCP responded, "It didn't require too many changes in our operation." For these reasons, the RCPs should be considered similar to the Commodity Producers in terms of management emphasis.

With regard to stability of product strategy, however, Reverting Commodity Producers are not similar to Commodity Producers. In contrast with the Commodity Producers, RCPs have relatively unstable strategies due to their chosen flexibility in selecting crops. The relatively unstable product strategies of the RCPs implies that the mix of production inputs used are in flux. In addition, the relatively unstable product strategies of these producers implies that they do not have a distinctive reputation. Reputation with customers, or with local producers/community members, was not mentioned by any of the RCPs.

Half of the Reverting Commodity Producers who were interviewed were engaged in animal, as well as plant agriculture. Animal enterprises included hogs, beef cattle, and dairy. Five of the six RCPs interviewed derived half or more of their sales from cash grains. The

average size of their operations was 3,642 acres, which was the second smallest among the five groups. It may be that since RCPs do not farm as many acres as the Commodity Producers, they cannot achieve low costs through economies of scale. Consequently, this inability to be cost competitive may provide the motivation for RCPs to adopt production of differentiated agricultural products, but only as long as premiums hold.

7.2.3 Transitional Producer (TP)

Transitional Producers are the third generic strategy to be considered. Transitional Producers (TPs) have made the strategic decision to compete on the basis of increasing the bundle of benefits (as perceived by customers) of products/services produced, as opposed to trying to be low-cost producers. They engage in targeted marketing activities, but they tend to have less experience in producing and marketing differentiated agricultural products than Product Producer-Marketers. (The Product Producer-Marketers, to be described below, is the group of producers whose strategy is the most similar to Porter's Differentiation Strategy.) While the TPs *do* produce differentiated agricultural products, they have not yet tailored their operations to meet individual customer needs. In other words, they do not have a differentiated production system.

The facts that TPs tend to be new to the production of differentiated products and have not developed a differentiated production system *yet* give rise to the name of this generic strategy category: *Transitional* Producers. Since Transitional Producers have made a long-term commitment to producing differentiated products, it can be inferred that at some point they will tailor their operations in some significant way (e.g., adding operations such as flexible delivery to customers). If a TP maintains a traditional, undifferentiated production

system, his differentiated product strategy is not likely to be sustainable in the long term. That is because a value chain designed to produce a commodity at the lowest cost cannot in the long run produce products with significantly more benefits (or a greater level of benefits) than provided by the standard commodity. There is "no free lunch" in agricultural production.

Transitional Producers have an operational management emphasis quite similar to that of a traditional, commodity-oriented agricultural producer. They tend to stress cost minimization, for example, through correct calibration of sprayers and efficient use of equipment. Because TPs are somewhat new to producing differentiated products,[18] they must determine the appropriate mix and levels of inputs for these new products. Like the Reverting Commodity Producers (RCPs), TPs tend to place more management emphasis on production inputs relative to producers in other generic strategy groups. As with the RCPs, none of the TPs mentioned their reputations with customers or with local producers/community members. These concepts were mentioned, however, by at least one member of each of the other groups. The TPs apparent lack of concern about reputation may result from the fact that because they are changing from commodities to differentiated products, their reputations are in flux. Alternatively, it may be that the process of adding or switching to differentiated products is so complex and time-consuming that TPs do not have the time or energy to worry about their reputations.

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[18] In some cases, TPs stated that they are in the process of adding differentiated products to their respective product lines.

While the production and operations systems of Transitional Producers are similar to those of Commodity Producers, their marketing strategies are quite different. TPs have a differentiated marketing strategy, as described in Section 7.1 above. TPs often attend meetings that are also attended by other producers of differentiated products and buyers of these products. Such meetings provide opportunities to gather information about new varieties of agricultural products and who is planning to buy these new varieties. TPs also visit customers to make a presentation of their farm's products and capabilities. Convincing potential customers that the quality and/or features of the products offered are worth the premium price is another activity performed by TPs. When they find a willing buyer for their products, TPs often contract with a processor to grow a variety of agricultural product that is suitable for a particular use.

Among the five generic strategies described here, a transitional strategy appears to be the most "unstable" strategy. While these producers have expressed a long-term commitment to producing and marketing differentiated products, it is an open question whether or not they will succeed. Those producers who "figure out the formula" for producing and marketing differentiated products will become Product Producer-Marketers (see below). To do this, a Transitional Producer must tailor his value chain to meet the needs of targeted customers. It is possible that a TP will eventually choose not to produce differentiated products. This may be due to either a deficiency in some essential resource or capability or simply an unwillingness to perform the customized operating or service functions that are required to satisfy individual customer needs. If he chooses to discontinue producing differentiated agricultural products, the TP will revert to commodity production.

Another possibility is that a Transitional Producer may continue to produce differentiated products, but choose to outsource targeted marketing activities. Once again, such a choice may be due to insufficient skills in this area, or an unwillingness to perform targeted marketing activities, which can be psychologically demanding. If (for whatever reason) a TP develops a differentiated production system but outsources targeted marketing functions, then he may be classified as a Product Production Specialist. (This type of producer is described below.)

The farming operations of the Transitional Producers interviewed ranged in size from 1,000 to 9,000 acres, with an average of 3,459 acres. This was the smallest size of operation of any strategy group. It is possible that TPs chose to adopt differentiated products because their relatively small size prevented them from being low-cost commodity producers, i.e., by precluding economies of scale. In terms of product mix, six of ten were 100% cash grain and one was 100% beef. Three had a mix of cash grains and livestock (two beef, one hogs).

7.2.4 Product Production Specialist (PPS)

The fourth type of strategy for agricultural producers is the Product Production Specialist (PPS). Agricultural producers who make up this category have a differentiated production system, but they do not have a differentiated marketing strategy. Put another way, their production systems are tailored to the production of differentiated products, but they have chosen to "outsource" the required targeted marketing activities. This was the least common generic strategy in the interview sample. Only four producers exhibited this strategy out of 60 interview subjects.

Producing high quality, differentiated agricultural products is important to Product Production Specialists. In order to accomplish this, PPSs are willing to adjust their operations to produce the features and specifications desired. In the words of one PPS, "I'd rather spend the money to produce it and get it out on the back side, than be just as cheap as I can be and try to cram it down the buyer's throat." Production system adjustments may involve adding operations, such as hydro-cooling vegetable crops at harvest. PPSs also tend to be very innovative in production. All of these characteristics also apply to Product Producer-Marketers, who are described below.

What distinguishes the Product Production Specialist from the Product Producer-Marketer is that the PPS does not place as much emphasis on marketing as the latter group. Instead, PPSs often rely on others to handle most marketing functions. In other words, certain essential marketing activities such as communicating with customers to determine their needs are outsourced. It is essential that the PPS trust the merchandiser or broker who provides the marketing service. PPSs tend not to use their relationships with their customers as a resource in their businesses.

The reasons for outsourcing marketing functions vary. Generally speaking, it comes down to whether the producer has the ability and willingness to engage in activities such as networking with customers to determine their needs. Engaging in networking activities (e.g., attending meetings or conferences that are also attended by buyers and visiting potential customers) can be quite time-consuming. In fresh produce, chain stores typically deal with sellers who provide a 12-month supply. This precludes a grower who can only sell for a limited season (e.g., from mid-July until the first killing frost) from dealing directly with the

chain stores.[19] In these circumstances, the PPS relies on an agent to network with customers and to identify and service customers outside the local area.

For Product Production Specialists in the seed or specialty grain businesses, the approach to marketing is somewhat different. Grain-producing PPSs tend to monitor the market (i.e., prices on the CBOT) on a daily basis. Some PPSs concentrate on developing a reputation among local growers as a producer of high quality agricultural products (e.g., seed and beef cattle). Some PPSs develop a reputation for selling grain that is free of impurities, or with a high protein level (in the case of wheat). This reputation leads local customers (e.g., who buy seed or calves) to approach the PPS in question, and this is how new customers are obtained. The marketing method is based on customer attraction, and is more passive than that of the Product Producer-Marketer.

Product Production Specialist operations from the sample were large, averaging 5,588 acres. They tend to be family-run businesses, however, with simple organizational structures. The fact that PPSs have large farms and few management personnel may contribute to the decision to outsource targeted marketing activities. The size of PPS operations in terms of sales was relatively small. Half of the respondents in this category had annual gross sales less

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[19] An exception would be a fresh produce grower who is willing and able to develop a source of supply in a counter-seasonal production region. Such a grower could be a 12-month supplier to grocery chains. But in order to implement such a strategy, substantial additional functions that would ordinarily be performed by a broker would have to be performed by the grower. In a real sense, the grower would have to start a brokerage operation, and run it in addition to the agricultural production operation. The additional demands of starting and running a brokerage operation preclude most produce growers from implementing such a strategy.

than $1 million. Finally, family support and having a balanced family life are important resources for producers with this strategy.

7.2.5 Product Producer-Marketer (PP-M)

The producers with both a differentiated production system and a differentiated marketing strategy are called Product Producer-Marketers. This name reflects the fact that these producers not only grow differentiated agricultural products, they also engage in targeted marketing activities. A Product Producer-Marketer (PP-M) aims to capture a greater share of the overall value produced within the food chain. To accomplish this, he takes a value chain approach to analyzing what is demanded by the end user and what products and/or services he can provide to optimize the effectiveness of his operation. Analyzing customer needs with regard to quality and other features is a key element of this process.

One common method that the Product Producer-Marketers in the sample used to succeed is to provide better service. An examples of this is short-notice delivery in response to emergency orders. A comment from one of the PP-Ms interviewed[20] provides an example of using service to satisfy special customer needs: "Just this past week we had a rush order on some navy beans. We just rescheduled our labor, and got two guys working all night, so they could get the extra product through. . . We didn't pass up the sale, we could still take advantage of it." Providing customers with detailed information about practices used to produce agricultural products is another way to differentiate by providing extra service.

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[20] Respondent #157.

Innovation is important to Product Producer-Marketers. And for these producers, "innovation" does not mean "adopt a new production technology to marginally increase yield." Rather, PP-Ms focus on radical innovations that sometimes change the way they do business. PP-Ms often employ an "attitude of openness" in order to effectively conceive of and implement radical innovations. Ideas for new products or services often come from customer requests, and thus open-minded consideration and flexible, creative responses to such requests are necessary for PP-Ms. On-farm research and experimentation, in cooperation with customers, is often employed by PP-Ms. In fact, these producers typically develop strategy in an adaptive fashion: experimenting and semi-permanently adopting successful innovations while discarding unsuccessful ventures. The following quote from an interviewed PP-M illustrates the evolutionary nature of product offerings and the importance of paying attention to customer needs.

> "We used to do just regular soybeans, like a commodity. Then, we started doing seed soybeans, which took added effort. Then, we started doing foundation seed soybeans, which is one generation newer, and much more tedious. We kept looking at those types of things. So instead of just growing common corn, we started growing specialty corns. In the early days, we grew them just on a per-acre basis. Like dull horny corn, high amylase corn, white waxy, very unique corns. We ended up concentrating more on yellow waxy corn, and we've done work with high oil. We have specific customers for those, and we try to figure out what their needs are, and try to meet those needs." (Respondent #245.)

Since special customer needs are often met by supplying multiple varieties of an agricultural product, preserving the identity of specialty products and matching them with the correct customer often is a key capability. Record keeping is an additional skill related to the

process of preserving identity and matching products with the appropriate specific characteristics to the proper customer.

Customer contact is very important to a Product Producer-Marketer. Visiting with customers (usually face to face) is an important tool for analyzing customer needs. Predicting what will be in demand prior to planting is a common function in agricultural production. What sets PP-Ms apart in this area is that predictions are based on first-hand knowledge gained through contact with individual customers. Networking with customers is one way to maintain contact, to ascertain current and potential future customer needs, and to identify new customers. Because of their innovative management style, many PP-Ms benefit from networking with selected, knowledgeable businesspeople from outside agriculture. A resource that is related to networking is reputation, e.g., as a producer of high quality agricultural products, or as a supplier who delivers products exactly as they were promised. Having a positive reputation is an important resource for PP-Ms. Relationships with customers are also important to Product Producer-Marketers. Further, these relationships must be built over a significant period of time. PP-Ms are confident enough in their unique ability to satisfy customer needs that they make relationship-specific investments in both physical equipment and human capital.

A Product Producer-Marketer recognizes that production costs directly affect profitability, so he does not ignore his cost of production in either day-to-day or long-term strategic decision-making. At the same time, the emphasis is on increasing the bundle of benefits perceived by the customer. So potential cost reductions are viewed through this lens, and any changes (e.g., in input rates) are rejected if they denigrate quality in any way. The

way PP-Ms look at costs is illustrated by a comment from Respondent #245: "I concentrate on increasing income. Not that we try to ignore or elude costs, but it's not our number one focus."

Many of the concerns and activities of Product Producer-Marketers mentioned above are unique to product-oriented agricultural production. In other words, these are additional, incremental tasks that producers of commodities do not perform. Due to finite time and bounded rationality, the fact that PP-Ms perform additional activities requires them to delegate other, more traditional agricultural production activities. These producers recognize that a single decision maker does not know everything, and that he does not need to know everything so long as he has access to the information. For example, PP-Ms are likely to place more reliance on agronomic consultants than are other producers.

The average number of acres farmed by Product Producer-Marketers was 4,197. This average farm size places the PPMs in the middle of the five generic strategy groups, larger than the Transitional Producers and the Reverting Commodity Producers, but smaller than the Commodity Producers and the Product Production Specialists. This seems to imply that the products produced by PPMs have a higher value (measured on a per-acre basis) than the commodities produced by Commodity Producers and that by engaging in targeted marketing, the PPMs retain more value than Product Production Specialists who outsource these activities.

7.3 Financial Performance

Business strategy research often has a normative orientation. That is, one aspect of business strategy studies usually involves developing prescriptive recommendations for

managers. Firm performance is often used to indicate which strategies, tactics, and so on are preferred under different circumstances. This research also examined the performance (more specifically, the financial performance) of the respondents to the written survey and interviews.

In finance and strategic management research, market measures[21] have often been used to indicate performance. Members of the subject population of this research typically own (either solely or as a partner) privately held firms. Since privately held firms generally do not publish share prices or dividends, the use of market measures of performance were not feasible in this research. Instead, performance measures were obtained from the subjects' answers to questions on the written survey and in the interviews. Due to the nature of the research and the characteristics of the sample population, collecting self-reported performance data was the only viable alternative for obtaining information on performance.

As mentioned above, information on the level of satisfaction with profitability and returns was obtained for written survey respondents. There was no statistically significant difference in this measure between respondents who produce differentiated products and those who do not. The telephone interview format provided an opportunity to obtain information more directly related to financial performance. The interview script included two performance-related questions. One question asked, "What return on investment do you expect?" This was intended to gage the financial performance standards of the subjects. The second asked, "Would you be willing to share an estimate of your actual average return on

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[21] Namely, shareholder returns in the form of dividends and capital gains.

investment over the last three years?" This question was intended to get a direct measure[22] of financial performance.

Among the 60 subjects interviewed, 42 responded to the "expected ROI" question and 36 responded to the "estimate of actual ROI" question. Expected ROI responses ranged from 3.5% to 22.5%, with an average of 12.9%. Estimates of actual ROI ranged from -1.2% to 39%. The average estimated actual ROI was 10.1%. At least 30 responses from each group would be required to test whether the mean performance measures were different across the groups. Since there were less than 30 producers in each generic strategy group, the number of responses was too small to carry out meaningful statistical tests.

Even though there were not enough responses to statistically test for differences between the groups in mean performance, one measure was so strikingly different that it deserves mention. Based on two responses (out of four group members), the mean estimate of actual ROI for the Product Production Specialists was only 2.4%. To place this in perspective, the Product Production Specialists had an average estimated ROI that was less than one quarter as large as the mean of all the respondents combined.[23] The limited sample size prevents any definitive conclusions, but this remarkably low level of financial performance calls into question whether the Product Production Specialist strategy can provide as high a rate of return as the other strategies. One possibility is that the agents who market the products of Product Production Specialists retain a disproportionate share of the value of the products supplied.

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[22] Or, more precisely, an estimate of a direct measure of financial performance.

[23] The overall average estimate of actual ROI was 10.1%.

7.4 Prescriptive Recommendations for Agricultural Producers

This research has a number of implications for agricultural producers who are concerned about crafting and implementing strategy for their respective operations. Prior to elaborating prescriptive recommendations, however, a note of caution should be expressed. As indicated (in detail) above, the subject pool is not representative of North American farmers. Survey respondents tended to be relatively young, well-educated, and have large operations in terms of acreage and sales. Care must be taken, therefore, in generalizing the findings of this study to populations of agricultural producers that are markedly dissimilar.

Four enduring strategies (i.e., Commodity Producer, Reverting Commodity Producer, Product Production Specialist, and Product Producer-Marketer) and one transitional strategy exist for agricultural producers. Based on the limited number of responses received regarding "actual ROI," producers with a Product Production Specialist strategy had by far the poorest financial performance. Recall that the Product Production Specialists (PPSs) produce differentiated products with a customized production system, but do not engage in marketing activities aimed at targeted customers. These results suggest that compared to having a PPS strategy, it is more profitable to either be a Commodity Producer, a Reverting Commodity Producer, or a Product Producer-Marketer. In other words, if an agricultural producer wants to succeed financially in "the product world," he may not be able to outsource marketing activities. It is only by both producing *and marketing* differentiated products that financial success may be most readily achieved in the product world.

To succeed with a Product Producer-Marketer strategy, producers must be willing and able to do two things. One is to successfully implement a differentiated marketing

strategy. This typically involves targeting customers and visiting them to determine their needs. In addition, customer intelligence obtained must be used to customize operations to meet special customer needs. Frequently, operations or services are customized in response to customer requests. Flexibility and capacity for innovation are key characteristics (or resources) for Product Producer-Marketers.

The interviews indicated that producing differentiated products is not the only route to financial success. In fact, the expected and actual reported ROI of Commodity Producers (CPs) were not less than that of the respondents who produce differentiated products. Producers who go the commodity route must have certain resources and skills to succeed. Production skills are very important for CPs, as are marketing skills. But the specific marketing skills required for this strategy are the diligence to keep abreast of commodity markets and the discipline to carry out a marketing plan based on futures, options, cash sales, HTA contracts, and similar tools. Budgeting and tracking costs are also key skills for CPs. Resources that contribute to success for CPs include assistance from marketing consultants and having a farm large enough to achieve economies of scale.

8. Conclusions, Limitations, and Suggestions for Future Research

This essay addressed the subject of business strategy for agricultural producers. The research question of whether agricultural producers exhibit Porter's Cost Leader and Differentiation strategies was addressed with a written survey of the TEPAP alumni and participants. The survey data were tabulated, and statistical tests were applied to check for

differences between two groups of respondents.[24] A number of differences between the groups were detected. The starkest difference between the two groups related to their management emphasis. Statistically significant differences in management emphasis were detected in all three areas inquired about on the survey. Cost Leading Producers emphasized focusing on internal efficiency, achieving cost reductions, and producing standard commodities. Differentiating Producers, in contrast, emphasized focusing on special customer needs, achieving premium prices, and producing specialty products. These results were highly supportive of expectations, based on Porter (1980).

Other differences were in the following areas: years of farming experience, the importance of production skills, the importance of special relationships with customers, and geographic scope of marketing. At the same time, there were even more areas of similarity between the two groups. While the written survey provided empirical support for the existence of two groups of agricultural producers, the results were not without ambiguity.

The written survey results supplied direction for telephone interviews of volunteers from the written survey. A telephone survey instrument was designed to gather more detailed strategic and operational information from agricultural producers. The purpose of the interviews was to provide the basis for a more accurate system for classifying the strategies of members of the subject pool. Interviews were conducted with 60 volunteers from the written survey. Analysis of the interview data resulted in three major findings.

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[24] The two groups were formed based on the respondents' answers to the question of whether they produce agricultural "products with special features (other than lowest price) that are desired by a targeted group of customers."

Analysis of the written survey was based on the assumption that the production of differentiated products was the distinguishing factor between strategic categories of agricultural producers. While the interviews reinforced the importance of the production of differentiated products as an indicator of strategy, two other equally important factors emerged. *First, the interviews indicated that the existence of a differentiated production system was an additional relevant characteristic to distinguish between agricultural producers in different generic strategy groups. This was the first major finding from the interviews.* Producing differentiated products is necessary but not sufficient for a differentiated production system. Customization, or tailoring of value chain activities to meet the special needs of customers is also required for a differentiated production system.

Second, the interviews also provided evidence that another characteristic, the existence of a differentiated marketing strategy, was equally important to the existence of a differentiated production system in distinguishing between the business strategies of producers in the subject pool. The identification and specification of this characteristic was the second major finding from the interviews. To have a differentiated marketing strategy, an agricultural producer must undertake activities to seek out targeted customers. A differentiated marketing strategy also involves striving to determine special customer needs, and meeting these needs by supplying products with special quality and features or by providing tailored services, whenever it makes sense to do so. Networking with customers to determine their product and service needs is typically a part of a differentiated marketing strategy.

As mentioned, this research started out with the assumption (from prior theoretical work) that if growers produce differentiated products, then they are in a different strategic category than growers who do not produce such products. More specifically, prior theoretical work suggested that this one characteristic was sufficient to determine the strategic approach of agricultural producers. In this essay, the production of differentiated products was combined with two other characteristics to create a strategy classification framework for agricultural producers. These other two characteristics were 1) the presence of a differentiated production system[25] and 2) the presence of a differentiated marketing strategy.[26] The strategy classification framework was introduced in Table 1.6. Each of the five columns of Table 1.6 represents a generic strategy type. *The introduction of the five new generic strategies for agricultural producers was the third major finding from the interviews.* The generic strategy groups are the Commodity Producers (CPs), the Reverting Commodity Producers (RCPs), the Transitional Producers (TPs), the Product Production Specialists (PPSs), and the Product Producer-Marketers (PP-Ms). Each of these five groups was described in detail. Prescriptive recommendations for agricultural producers were also given. This material may prove useful to extension agents and consultants who provide technical assistance to agricultural producers.

The methods used to collect the data for this study, written surveys and telephone interviews, introduce some limitations. Examples of these limitations include non-response bias, limited recall, and the possibility of biased responses due to improper interview

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[25] The first major finding from the interviews.

[26] The second major finding from the interviews.

technique. Efforts were made, as explained above, to prevent inaccurate and/or biased results. Further, all methods for collecting empirical data have weaknesses (as well as strengths). Upon careful consideration of all relevant factors, these methods were selected because they provided the best available means of collecting the data required.

The subject of actual and expected financial performance was addressed in the telephone interviews. The number of interviews completed, however, was insufficient to perform statistical tests on whether the generic strategy groups differed in financial performance. (The category containing the fewest members, the Product Production Specialists, had only four members, for example.) Further research could overcome this limitation. It would require the use of similar but larger sample populations so that a larger number of responses could be obtained. A larger sample of real performance data is required to draw conclusions about the financial performance of producers belonging to the generic strategy groups introduced in this essay. A study with a substantially larger sample size could thus extend this research by allowing for rigorous evaluation of the financial performance that results from these strategies. Further, one of the basic tenets of finance is that the riskiness of an investment is proportional to its expected returns. Returns for two projects (or enterprises) with different levels of associated risk should therefore be adjusted for risk to make comparisons meaningful. The telephone interviews in this study allowed the collecting of data on respondent firms' levels of return, but not the associated risk. Further research could address the issue of relative risk and returns for agricultural producers with differing

strategies. A long-term, panel data research design would enable risk-related questions to be addressed.[27]

Another limitation of the analysis of financial performance is the fact that performance is a function of a number of factors, only one of which is the strategy selected by firms. For example, Phillips and Peterson propose a model which specifies that agribusiness firm performance is a function of the following factors: unanticipated environmental disturbances, the strategic plan (or strategy), firm characteristics, the strategic planning process, and the implementation of strategy. In addition to examining performance as a function of the strategy chosen, a research design should control for these other factors.

The subject pool for the empirical study is not representative of the overall group of North American farmers. This may limit the generalizability of the findings of this research. Despite the fact that using narrower, more homogenous populations tends to limit the generalizability of a study, "solid findings about a narrower population are far better than marginal findings, of questionable generalizability, about a more broadly defined, but less homogenous population." (Chrisman, et al., p. 416, citing McKelvey.) There was also a positive aspect of the relatively narrow subject population chosen for this study. Because the subjects were progressive and educated agricultural producers, they had sophisticated, well planned business strategies. The respondents also had the ability to articulate their respective strategies and the activities undertaken to implement them. This facilitated the identification

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[27] In addition, a long-term, panel data research design could shed more light on the processes of adoption of differentiated products (i.e., the Transitional Producers) and reverting from differentiated production to commodity production.

of key distinguishing characteristics of agricultural producers' business strategies, and the development of the strategy classification framework.

A potential research project to extend this study would be to implement a similar survey with a group of agricultural producers with different characteristics, e.g., producers with smaller farming operations or producers from a different part of the world. This would test for generalizability of the findings of this research. A research project that involves collecting data from participants at a different level of the agri-food chain would shed additional light on generic strategies of agricultural producers as well as on the characteristics and activities of successful agricultural producers. Examples of groups that could be surveyed to obtain different perspectives of the strategies of agricultural producers are input suppliers, consultants, first handlers, and processors. The insights these groups could provide about the agricultural producers with whom they regularly do business may further clarify the range of strategies employed by growers.

This study extended knowledge on the subject of agribusiness strategy. Brester and Penn had proposed that agricultural producers would adopt one of two generic strategies (i.e., corresponding to Porter's Cost Leadership and Differentiation Strategies). This study investigated whether this was true, and the findings revealed a richer and more complex array of business strategies for agricultural producers. Five groups of producers with distinctive strategies were discovered, rather than two. The differences between the groups were subtle and more complicated than expected. These differences related to whether or not producers had a differentiated production system and a differentiated marketing strategy, in addition to whether or not they produced differentiated agricultural products.

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Appendix A: Written Survey Instrument for Empirical Study of Agricultural Producers.

Texas A & M University **Michigan State University**

TEPAP ALUMNI SURVEY ON VALUE-ADDED MARKETING

Please describe yourself or your farming operation by answering the questions below.

1. *A **value-added agricultural product** is one that delivers special features (other than lowest price) that are desired by a targeted group of customers. Such products usually sell for a premium above commodity prices and are marketed with techniques that involve closer contact with the customer than is usual in commodity farming operations.*

   Based on this definition, do you produce any value-added agricultural products as part of your farming operation? (Check one.)

   ____ Yes ➜ ***Please continue with Question 2 and complete the survey.***

   ____ No ➜ ***Please go to Question 4 and complete the survey.***

2. **What approximate percentage of your farming gross revenues comes from sales of value-added products? _____%**

3. **Please use the space provided below to list each value-added agricultural product that you produce and its corresponding value-added feature(s).**

PRODUCT	VALUE-ADDED FEATURE(S) *(e.g., high oil content, special packaging, unique variety, etc.)*
A.	
B.	
C.	
D.	
E.	

4. **Successful businesses often make tradeoffs among important activities. Following are three pairs of business activities. Circle the number on the scale that best represents the mix of the two activities that you pursue in your operations.** *(For example, a 3 for the first pair indicates a slightly greater focus on efficiency over special customer needs. A 6 would represent a nearly exclusive focus on customer needs over efficiency.)*

Focusing on internal efficiency	1--2--3--4--5--6	Focusing on special customer needs
Achieving cost reductions	1--2--3--4--5--6	Achieving premium prices
Producing standard commodities	1--2--3--4--5--6	Producing specialty products

5. **How important is each of the following to your long-term ability to outperform competitors in satisfying customers? (Please circle one number on the scale for each item.)**

	Unimportant				*Extremely Important*
a. Unique Land Features	1	2	3	4	5
b. Unique Climactic Features	1	2	3	4	5
c. High Quality Employees	1	2	3	4	5
d. Financial Capital Availability	1	2	3	4	5
e. Marketing Skills	1	2	3	4	5
f. Production Skills	1	2	3	4	5
g. Use of Consultants	1	2	3	4	5
h. Use of Expertise from Universities	1	2	3	4	5
i. Special Relationships with Suppliers	1	2	3	4	5
j. Special Relationships with Customers	1	2	3	4	5
k. Organizational Structure	1	2	3	4	5
l. Transportation Infrastructure	1	2	3	4	5
m. Other (specify)_____	1	2	3	4	5

_____

6. **Please indicate approximately what percentage of your farm gross sales come from the following activities:**

____% Cash Crops
____% Livestock (Not including dairy)
____% Dairy
____% Fruits and/or Vegetables
____% Nursery/Greenhouse
____% Other (describe) _____
100% Total

7. **What were the total number of acres (managed, owned and/or rented) farmed in 1998?** _____acres

8. A. **If you have livestock or dairy, what type of animal do your raise?** _____

B. **What is the capacity of your livestock operation, in animal units?** _____

9. **Please indicate your age.** (Please check one answer.)
___25 yrs. or less ___26-40 yrs. ___41-55 yrs. ___ 56-69 yrs . ___ 70 yrs. or over

10. **What is your role within the farming operation?** (Please check one answer.)
____ owner ____ minority partner ____ division manager
____principal partner ____ general manager ____ other (specify)_____

11. A. **Are you the primary decision maker in your farming operation for long-run business strategy?** (Please check one.) Yes_____ No_____

12. B. **Are you the primary decision maker in your farming operation for day-to-day operations?** (Please check one.) Yes_____ No_____

13. **Please indicate your highest level of education.** (Please check one answer.)

___ less than 12 yrs.
___ completed high school
___ some college or technical education
___ completed college or technical degree
___ graduate training

13. **Please indicate your farming experience.** (Please check one answer.)
___ 7 yrs. or less ___ 7-17 yrs. ___18-28 yrs. ___ 29 yrs. or more

14. **Where do you directly market your farm products?** (Please check all that apply.)
____ local ____ regional ____ national ____ international

15. **How would you describe your level of satisfaction with the profitability and returns from your farm operation?** (Circle the appropriate number on the scale.)

Highly Satisfied 1 2 3 4 5 Highly Dissatisfied

16. **What was your firm's approximate average annual gross sales for the last three years?** (Please check one answer.)
_____ less than $1,000,000
_____ between $1,000,000 and $4,999,999
_____ between $5,000,000 and $19,999,999
_____ $20,000,000 or more

II Beyond the information that you provided above, we would like to ask additional questions about the kind of resources (capital, human, marketing, etc.) that you have come to rely on for success in your operation. This additional information would help improve instruction at TEPAP and contribute to a broader study on the changing resources needed to support agricultural production.

WOULD YOU BE WILLING TO PARTICIPATE IN A FOLLOW-UP PHONE INTERVIEW (NOT TO EXCEED ONE HOUR)?
(Check one) Yes ____ No ____

IF YES, PLEASE PROVIDE THE FOLLOWING:

Name: _____ **Phone No.** (_____)_____

Best day/time to call: _____

Please return the completed survey in the enclosed, postage-paid envelope by December 15, 1999.

Thank you very much for your help! Your opinion on each question is valuable to us.

ESSAY II:

INVENTORYING RESOURCES: AN APPLICATION TO PRODUCT-ORIENTED AGRICULTURE

1. Introduction

The long-term trend in agriculture of moving from the production of general commodities to the production of products with special characteristics has been cited frequently in the agricultural economics literature. (See, for example, Bonnen and Schweikhardt, and Connor and Barkema.) Agricultural economists and government analysts have for many years produced assessments, or inventories, of resources related to agricultural production. As will be shown in this essay, prior approaches to inventorying agricultural resources are commodity-oriented. Because different resources are necessary in the new, product-oriented agricultural environment, a new resource-inventorying process is needed. This essay addresses the development of a resource inventory to support decision making in an environment characterized by differentiated agricultural products. More specifically, it explores the question of what information is best suited for strategic analysis and strategy formulation for firms involved in product-oriented agriculture.

In the following section, product-oriented agriculture is distinguished from commodity agriculture, and the importance of a new approach to inventorying agricultural resources is established. Two theoretical concepts, the Resource-Based View of the Firm (RBV) and Porter's Diamond Model of National Competitive Advantage, are reviewed in the third section. An empirical study of producers involved in product-oriented agriculture is also reviewed. In the fourth section, three examples of past inventories of agricultural resources

are examined. The limitations of these approaches to inventorying resources for product-oriented strategy formulation are highlighted based on the theoretical and empirical findings laid out in the third section. A new method of inventorying resources for product-oriented agriculture is introduced in the fifth section of this essay. Its implications for agribusiness decision makers are also given. The final section includes a summary, conclusions, and suggested areas for future research.

2. The Importance of Product-oriented Agricultural Resource Inventorying

Many systematic changes have led to increasing competition and shrinking margins in American farming. Trends contributing to this situation include the globalization of agricultural markets, industry consolidation at multiple levels of the supply chain, and increasing environmental regulation. Another important trend is the gradual switch from standardized commodities to differentiated agricultural products. In fresh fruits and vegetables, for example, two methods of differentiating products based on production practices have emerged, namely organic and eco-labeling (Blend). The trend toward products with specialized output characteristics has also affected feed grains. Two examples include high oil corn (better feed performance) and low phytic acid corn (better nutritional and environmental properties) (Dobbins, et al). Because the methods suggested by this essay are in response to this latter trend, the increasing predominance of differentiated agricultural products will now be examined in some further detail.

Briefly, agricultural commodities are undifferentiated goods produced by growers. At the level of the producer and first handler, markets for commodities typically consist of

many buyers and sellers. Agricultural commodities have grades and standards that specify minimum values for food safety, nutritional, and/or appearance characteristics. Other common features of agricultural commodities are government price support programs and organized trading exchanges (e.g., the Chicago Board of Trade). Differentiated agricultural products, on the other hand, do not have the characteristics mentioned for agricultural commodities. Instead, differentiated agricultural products tend to have markets with relatively few buyers and sellers, and they have tighter specifications for important characteristics. They are more likely to have nonmarket coordinating mechanisms, such as contractual agreements, rather than traditional open markets (Connor and Barkema). In short, differentiated agricultural products are products with special features (other than lowest price) that are desired by a targeted group of customers. In this essay, agricultural producers who grow and market differentiated products will be called product-oriented agricultural producers.

Handy and Padberg identified the shift from the production of standardized commodities to the marketing of specialized consumer products three decades ago. In addition, Bonnen and Schweikhardt (p. 5) discussed the transformation of agriculture from an industry producing commodities to "many smaller, distinctively different production and marketing sectors." This trend was also noted by Senauer, Asp, and Kinsey. Finally, Boehlje asserted that the "old concept" of commodities is being replaced by the "new concept" of specific attribute/differentiated raw materials.

In their research and extension roles, agricultural economists are concerned with assessing and improving the competitiveness of agribusinesses in the regions they serve. A

common element in accomplishing this overarching objective is generating information to support the planning and decision making of agricultural producers and other participants in agricultural subsectors. An essential part of such an information base is an inventory of resources that exist in a geographic region. Examples of past efforts to create an inventory of agricultural resources include the Status and Potential of Michigan Agriculture (SAPMA) project and the Focusing IFAS[28] Resources on Solutions for Tomorrow (Florida FIRST) project. The unit of analysis for such studies has typically been a state, but these analyses could also be performed at a different level, e.g., a regional or multi-county analysis.

The resource inventories produced in the past were primarily oriented toward commodity agriculture. (This commodity orientation of traditional resource inventories will be specifically shown in the third section of this essay.) For example, traditional agricultural resource inventories emphasized production issues, such as acreage planted and crop yields. As will be argued in this essay, commodity-focused information is not well suited to producers and processors in the new product-oriented agricultural environment. Other types of information (e.g., producers' reputations for quality and service; producers' ability to communicate, network, and research; and the level of problem-solving skills among employees) are more strategically useful to decision makers in product-oriented agriculture. A new type of analysis will be shown to be preferred in providing the dynamic, product-oriented information that will effectively support the strategic management efforts of agricultural producers and other participants in increasingly product-oriented agricultural subsectors. This essay will draw upon theoretical literature from general management and

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[28] Institute of Food and Agricultural Sciences, a unit of the University of Florida.

an empirical study of agricultural producers to develop a new method of inventorying agricultural resources for product-oriented agriculture.

The issues and prior research discussed above provide the foundation and justification for the questions that will be addressed in this essay. Following are the two research questions that will be evaluated.

1. Is there a resource inventory that would be particularly relevant to product-oriented agricultural producers? If so, what is it?

2. How does the inventory differ from historic agricultural resource inventories?

In order to fully address these questions, it is necessary to examine theoretical and empirical work that is related to strategic analysis and strategy formulation for agribusiness firms, especially those that produce differentiated agricultural products. This information will furnish a basis for the examination of prior approaches to inventorying agricultural resources and the development of a new method of inventorying resources.

3. Theoretical Background

This section examines three sources that are relevant to a resource inventory for product-oriented agriculture. Two of these sources are theories from the general management field: the Resource-Based View of the Firm (RBV) and Porter's Diamond Model of National Competitive Advantage. The third source is an empirical study of agricultural producers whose strategy involves differentiated agricultural products.

3.1 Resource-Based View of the Firm

Relevant business theories that incorporate resource assessments would seem immediately relevant to determining the foundations of a resource inventory for product-oriented agriculture. But which specific theories would be most appropriate? One such theory is the Resource-Based View of the Firm. Product-oriented agriculture involves products with special features. The production and marketing of special product features involves rare, or perhaps even unique, resources (Barney, 1997). Because the Resource-Based View of the Firm (RBV) concentrates on resources with these characteristics,[29] it is particularly relevant to the task at hand. In particular, the RBV supplies a structured framework for identifying resources that have the potential to provide a sustained competitive advantage.

Wernerfelt is often credited with introducing the RBV. He defines resources as "those (tangible and intangible) assets which are tied semipermanently to the firm" (p. 172). Barney's (1991) concept of resources includes assets, capabilities, firm attributes, information, knowledge, and organizational processes that allow firms to conceive of and implement strategies that improve their efficiency or effectiveness. Specifically, he defines three classes of firm resources. These classes are physical capital resources, human capital resources, and organizational capital resources. Barney added financial resources as a class of resources in his 1997 work.

The RBV starts with the assumption that firms have different resource endowments (Barney [1991], Rumelt, Wernerfelt, Peteraf). In other words, firms are heterogenous with

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[29] This will be explained more fully below.

respect to the resources they control. Resources differ in terms of their efficiency or effectiveness in satisfying customer wants and needs. Further, firms with superior resources will earn rents[30] (Peteraf). Wernerfelt provides examples of types of resources that can lead to large profits. These include customer loyalty, production experience, and technological leads. A second assumption is that resources are immobile (or, at least, not perfectly mobile) between firms. The RBV sets out several conditions that must be satisfied in order for a resource to enable a firm's achievement of a sustained competitive advantage. Prior to discussing these conditions, it is necessary to clarify what is meant by "competitive advantage" and "sustained competitive advantage."

A *competitive advantage* is achieved when a firm implements a value creating strategy not concurrently being implemented by competing or potentially competing firms. A *sustained competitive advantage* is achieved when a firm implements a value creating strategy that is not concurrently being implemented by competing or potentially competing firms, and when these other firms are not able to duplicate the benefits of the strategy (Barney, 1991). That is, a sustained competitive advantage is that type of competitive advantage that cannot be competed away by another firm. The definition of sustained competitive advantage hinges on the possibility of competitive duplication, rather than the amount of calender time that it can be maintained. This is not to say that a sustained competitive advantage will last forever. On the contrary, a sustained competitive advantage can be nullified by an unanticipated environmental shock (e.g., a Schumpeterian shock). Such a shock would have that effect if

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30 According to Peteraf, "Earnings in excess of breakeven are called rents, rather than profits, if their existence does not induce new competition" (p. 180).

it alters the economic environment of the firm's industry and eliminates the strategic value of the resource(s) upon which the sustained competitive advantage was based (Barney, 1991).

The fact that a sustained competitive advantage is not possible without heterogeneity of firm resources is shown by Barney (1991). Hypothetically, if all firms in an industry have identical resources, then no one firm is capable of conceiving of and implementing a strategy that the other firms in the industry are not also capable of conceiving of and implementing. Thus, if one firm conceives of and implements a strategy that improves its efficiency and/or effectiveness, all of the other firms will do the same, and in turn they all will enjoy the same performance. Consider further the case of first-mover advantages. In order to be a first-mover and achieve a sustained competitive advantage, a firm must have a resource that enables it to recognize and take advantage of environmental opportunities before its competitors can. But this is not possible in an industry wherein the incumbent firms have homogenous resources.

The necessity of resource heterogeneity, along with imperfect resource mobility, also applies to barriers to entry. In some industries, firms that are protected by entry barriers earn super-normal profits (compared to firms outside the industry). However, barriers to entry are only possible if current and potentially competing firms have different resource endowments and resources are immobile. For an entry barrier to exist, firms not subject to the barrier must be implementing different strategies than firms seeking to enter the industry. If all firms have the same strategically relevant resources, then this is not possible, as explained above. In addition, resources must be imperfectly mobile, because if potentially competing firms could acquire the relevant resources of the firms operating inside the protected area of competition,

then they could duplicate the strategies of these firms. This would enable them to circumvent the entry barriers, thus nullifying the competitive advantage formerly held by the firms protected by these barriers (Barney, 1991).

Barney (1991) argued that several resource attributes lead to sustained competitive advantage. The first necessary attribute for resources is that they must be *valuable*, i.e., that they exploit opportunities or neutralize threats in the firm's environment. Firm resources are valuable when they enable the firm to conceive of or implement strategies that improve its efficiency or effectiveness.

The second attribute necessary for resources to provide a sustained competitive advantage is that they be *rare* among the firm's present and potential competitors. It is apparent from the definition of competitive advantage that widely available (i.e., common) resources cannot be the source of a competitive advantage. No common resource can enable a firm to conceive of and implement a strategy that could not also be conceived of and implemented by many other firms. (This is not to say that valuable but common resources are not important. In situations of competitive parity, valuable but common resources can help to ensure firms' survival.) Firms with valuable and rare resources will often be strategic innovators. A firm may achieve a temporary competitive advantage by using these resources to conceive of and/or implement strategies before competitors, and thus achieve a first-mover advantage.

The third necessary attribute for resources to provide a sustained competitive advantage occurs if other firms cannot obtain them. They are then said to be *imperfectly imitable*. This attribute received the most extensive consideration from Barney (1991). In

addition, Peteraf emphasized that ex post limits to competition[31] must be present in order for firms to receive rents from superior resources. Imperfect imitability and a lack of substitute resources (to be addressed below) are presented as potential ex post limits to competition.

Barney (1991) gives three potential reasons why a resource may be imperfectly imitable. First, the resource may be a product of special historical circumstances. In such cases, path dependency may play a role in the inability of firms to duplicate a successful strategy of a firm with a different history. The second reason a resource may be imperfectly imitable is due to causal ambiguity related to the link between the competitive advantage and the resource. If resources are to be imperfectly imitable due to causal ambiguity, the link between the resource and the competitive advantage must be ambiguous to all firms, including the one possessing the resource. Otherwise, firms that do not possess the resource could obtain knowledge about its capacity to provide a sustained competitive advantage (e.g., by hiring key knowledgeable individuals away from the firm that possesses the resource). This would enable firms without the resource to imitate it, in time.[32] The third reason for resources to be imperfectly imitable is that they may be the result of socially complex processes (Barney, 1991). This complexity may prevent the imitation of these resources. For example, the benefits from a desirable organizational culture which arises from socially complex processes cannot be duplicated by implementing a plan from a management textbook.

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31 Ex post limits to competition means that "*subsequent* to a firm's gaining a superior position and earning rents, there must be forces that limit competition for these rents" (Peteraf, p. 182).

32 Rumelt also discusses causal ambiguity in the context of uncertain imitability.

The fourth requirement for a resource to provide a sustained competitive advantage is that it must not be *substitutable* (Barney, 1991).[33] In other words, there must not be any strategically equivalent resources that can be deployed that are valuable, but are either not rare or not imperfectly imitable. Two resources (or bundles of resources) are considered strategically equivalent if they can be used to conceive of and implement the same strategies. If a valuable, rare, and imperfectly imitable resource has no strategically equivalent resources, then it can provide a sustained competitive advantage. But if different resources are strategically equivalent to such a resource, then other firms which possess these other resources can conceive of and implement the same strategy, and a sustained competitive advantage is not possible. Wernerfelt also stated that the availability of substitute resources will diminish the returns to a given resource.

One way for firms to substitute strategically equivalent resources is by developing or obtaining similar resources (Barney, 1991). For example, say a firm has a temporary competitive advantage that derives from a particularly effective management team. While a competing firm may not be able to duplicate the other firm's management team exactly, it is possible that it could develop its own unique management team that is equally effective. Firms can also achieve substitution by deploying very different resources (Barney, 1991). An example of this would be a strategic planning system that gives a firm a very clear vision of

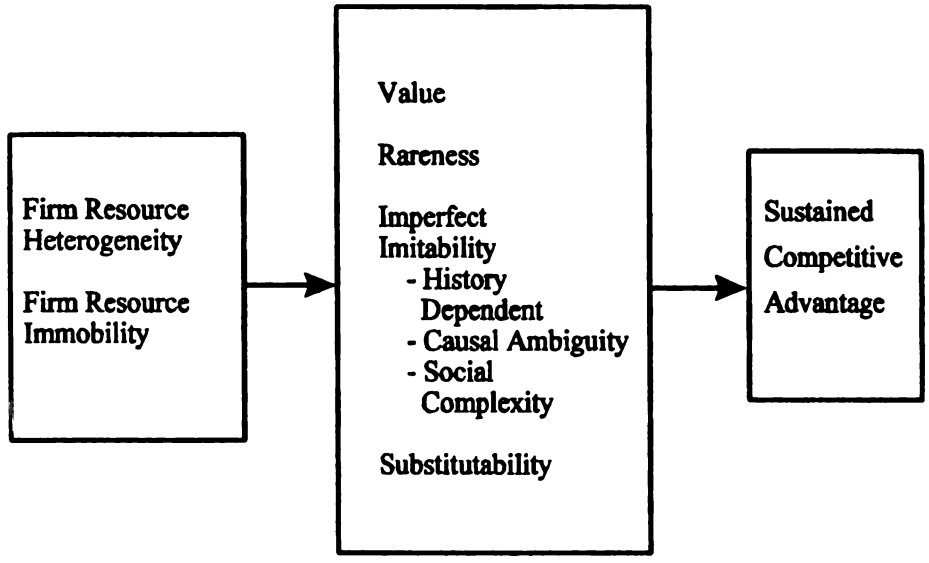
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[33] It should be noted that Barney (1997) combined imperfect imitability and non-substitutability into one attribute that resources must have to provide a sustained competitive advantage. He also added another attribute: that firms must be suitably organized to exploit the valuable, rare, imperfectly imitable resource. Furthermore, it may be more grammatically correct to refer to this attribute as *substitutable for*, rather than *substitutable*.

the firm's future. Such a system could be strategically equivalent to a charismatic leader that provides his firm with a very clear vision of its future.

With its emphasis on resources and how they can provide a sustained competitive advantage, the RBV framework is quite relevant to a resource inventory for product-oriented agriculture. A graphic presentation of the key attributes of the RBV is included as Figure 2.1. Firm resource heterogeneity is one of the underlying assumptions of the RBV. The resource inventory for product-oriented agriculture, therefore, must contain more than a simple count of homogenous assets. To be meaningful strategically, it must consider characteristics of assets that may allow firms to base a competitive advantage on them. The RBV suggests certain types of resources that should be considered in an inventory for product-oriented agriculture. In particular, there are four categories of resources that should be included in a resource inventory: physical capital resources, financial capital resources, human capital resources, and organizational capital resources. Each of these resource categories should be customized to be applicable to agriculture.

Figure 2.1: The Relationship Between the Elements of the Resource-Based View of the Firm (RBV) (Source: Barney, 1991)



3.2 Porter's "Diamond" Model of National Competitive Advantage

In addition to the Resource-Based View of the Firm, another theoretical framework is particularly relevant to the evaluation of resources. This additional framework is introduced in *The Competitive Advantage of Nations*, by Michael E. Porter. To draw conclusions about why particular national industries gain competitive advantage, Porter undertook a four-year study of ten important trading nations. The study also examined the issue of which industries in a given location have the best opportunity to achieve and maintain a dominant global competitive position. The focus of Porter's study on the attainment of competitive advantage makes it especially applicable to the development of a resource inventory suitable for decision makers to use in achieving competitive advantage in product-oriented agriculture. Further, the emphasis on the influence of certain location-specific aspects of firms' environments also makes it very relevant to the evaluation of resources for product-oriented agriculture because geographic specialization often occurs in the production of differentiated agricultural products. One of the reasons for this phenomenon is that the production of certain differentiated agricultural products is made possible by the presence of special agro-climatic conditions that are highly localized geographically.

The major contribution of Porter's work is the "Diamond" Model of the determinants of national competitive advantage. As shown in Figure 2.2, there are four broad, national attributes that promote (or impede) the achievement of competitive advantage for particular industries. These include factor conditions, demand conditions, related and supporting industries, and firm strategy, structure, and rivalry. The determinants are defined as follows.[34]

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[34] Two other entities that influence competitive advantage, chance and government, will be addressed below.

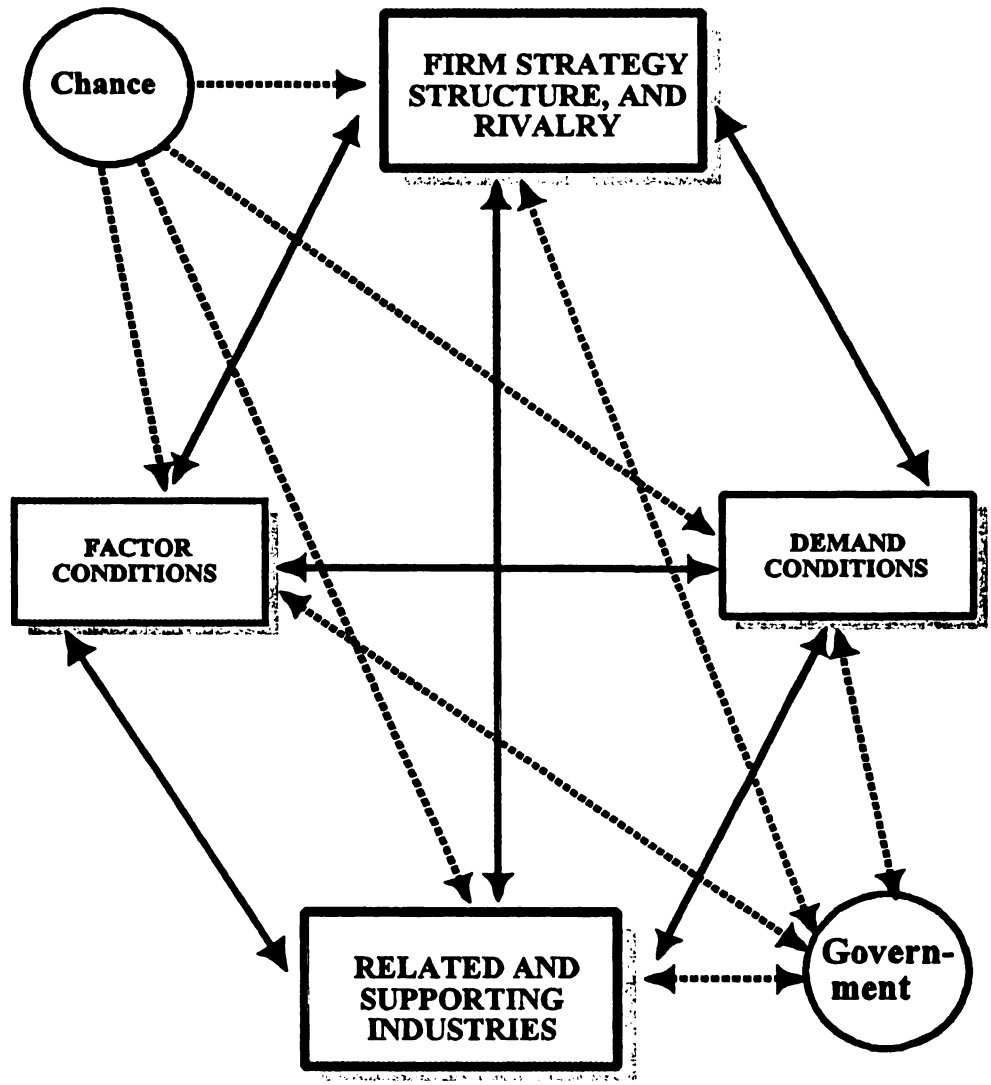
"1. *Factor conditions*. The nation's position in factors of production, such as skilled labor or infrastructure, necessary to compete in a given industry.

2. *Demand conditions*. The nature of home demand for the industry's product or service.

3. *Related and supporting industries*. The presence or absence in the nation of supplier industries and related industries that are internationally competitive.

4. *Firm strategy, structure, and rivalry*. The conditions in the nation governing how companies are created, organized, and managed, and the nature of domestic rivalry" (Porter, p. 71).

Figure 2.2: The Diamond Model (Source: Porter)



In addition to these four determinants, Porter acknowledges two other influences on national competitive advantage: chance and government. These two entities, however, are not direct determinants. They influence national competitive advantage through one or more of the four primary determinants. Social and political history, the existence of individual leaders, and "cultural factors" (e.g., values) also affect the economic environment facing firms. Similar to chance and the government, these variables influence national competitive advantage through the four determinants rather than acting in isolation from them. Advantages in all aspects of the "diamond" are not necessary for success, especially for simple or resource-dependent industries.

The four determinants listed above act as a dynamic, interdependent system to allow particular national industries to achieve a global competitive position. Many examples of how the determinants interact to evolve the "diamond" are given by Porter. Three of these are listed below.

- Demanding and sophisticated buyers induce upgrades in product features and technology. Upstream entry may also take place, thus strengthening industry structure and rivalry.

- World-class suppliers enable firms to make improvements in their products and processes.

- Dedication to improvement and innovation, as well as specialized factor creation mechanisms, are frequently cited as characteristics of globally competitive industries.

The first determinant, factor conditions, deserves further description. Porter introduces a distinction among factors that will be termed here "degree of development." The less developed factors are *basic* factors. Following is Porter's definition of basic factors.

> "Basic factors include natural resources, climate, location, unskilled and semiskilled labor, and debt capital. . . . Basic factors are passively inherited, or their creation requires relatively modest or unsophisticated private and social investment. Increasingly, such factors are either unimportant to national competitive advantage or the advantage they provide for a nation's firms is unsustainable"[35] (p. 77).

At the other end of the degree of development scale are *advanced* factors.

> "Advanced factors include modern digital data communications infrastructure, highly educated personnel such as graduate engineers and computer scientists, and university research institutes in sophisticated disciplines. . . . Advanced factors are now the most significant ones for competitive advantage. They are necessary to achieve higher-order competitive advantages such as differentiated products and proprietary production technology." (p. 77).

Porter also makes a distinction between *generalized* factors and *specialized* factors. Generalized factors may be deployed in a number of different industries. Examples given include the highway system, a supply of debt capital, and pools of motivated, college-educated workers. Porter characterizes specialized factors as follows.

> "Specialized factors "involve narrowly skilled personnel, infrastructure with specific properties, knowledge bases in particular fields, and other factors with relevance to a limited range or even to just a single industry. Examples would be a scientific institute with expertise in optics, a port specialized in handling bulk chemicals, a cadre of skilled model makers for automobiles, or a pool of venture capital seeking to fund software companies" (p. 78).

He also points out that specialized factors are better able to provide a sustainable competitive advantage than are generalized factors.

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[35] Porter does note the continued importance of basic factors in agriculturally based industries.

A number of conclusions may be drawn regarding how Porter's diamond model applies to inventorying resources for product-oriented agriculture. Most obviously, an inventory of resources should catalog resources according to the four determinants of competitive advantage.[36] For two reasons, one of the determinants of competitive advantage, factor conditions, is especially applicable to an inventory of resources for product-oriented agriculture. The first reason is that the emphasis that authors such as Debartin have placed on agricultural production firms as input-combiners has established factors as a familiar frame of reference among many agribusiness practitioners. The second reason is that the biological nature of the production process and the criticality of land and climatic variables necessitates examining factors of production, especially to identify opportunities to produce products with special features. Further, advanced and specialized (rather than basic and generalized) factors are more important to a product-oriented agricultural industry in a given location because they are more likely to provide a competitive advantage that cannot be competed away by a lower-cost competing industry. The way the elements of the diamond work togther as a system implies that the components of the resource inventory should not be analyzed in isolation. Rather, the complete inventory should be examined holistically, taking consideration of whether and how the component elements influence and reinforce each other, and how the development of one resource affects (and is affected by) other resources. Finally, the diamond model points out that while government is not a direct determinant of competitive advantage, it indirectly influences the competitive advantage of industries under its jurisdiction. Consideration should thus be given to government in any resource inventory.

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[36] That is: factor conditions; demand conditions; related and supporting industries; and firm strategy, structure, and rivalry.

3.3 TEPAP Study: Written Survey and Interviews of Agricultural Producers

An empirical study of the alumni and participants of The Executive Program for Agricultural Producers (TEPAP) was conducted in 1999 and 2000. (A description of the research methods employed and the demographic characteristics of the respondents are included in the first essay of this dissertation.) Since one of the expressed objectives of the study was to investigate the resources and skills required to successfully produce and market differentiated agricultural products, the study is particularly relevant to creating a resource inventory for product-oriented agriculture.

A number of activities were commonly mentioned by the TEPAP respondents who produce and market differentiated agricultural products. These activities can be grouped into two general categories: gathering customer intelligence and providing customer service. One key activity related to gathering information about customer needs is networking with customers. An example of this is attending meetings with groups of end users of differentiated agricultural products. The producers who attend meetings with end users benefit from the interaction by obtaining information about the products, special features, and services that will be demanded in the future, and by promoting themselves as progressive, responsive producers.

Another method of gathering customer intelligence is visiting customers. Many of the TEPAP respondents who produce and market differentiated products visit customers (and potential customers) to find out their needs and to communicate the products and services they have to offer. Some of the respondents employ one or more sales representatives who visit customers. In other cases, the owner of the farming operation visits customers and potential customers personally. In this age of fax and e-mail, one could argue that visiting

customers has decreased in importance as a marketing activity. But surprisingly, the TEPAP respondents stressed the benefits of face-to-face, one-on-one contact in establishing and maintaining relationships with customers.

The services provided to customers by the TEPAP respondents who produce and market differentiated products were quite varied, but they all reflect a focus on increasing the perceived bundle of benefits provided to the customer. Many of these customer services have to do with innovation. Some producers mentioned engaging in experimentation, such as field trials of new varieties or of tillage methods. In one case, an end user hired a producer by the acre to grow an experimental variety, i.e., the payment was not contingent on the quantity of the product produced. Of course, in such cases the customer must have a great deal of confidence in the technical capabilities of the producer. Such confidence is usually built over time through repeated transactions.

In certain cases, customers of the TEPAP respondents took the initiative and suggested innovative changes to producers' operations. This implies that in these instances the producers did not need an active program to gather customer intelligence. Rather, all that was required was to have lines of communication open with customers, and to pay attention to the customers' requests. Sometimes customers requested innovations that entailed significant changes in the operations of TEPAP respondents. In one case, a potential customer asked if the TEPAP respondent could process and package a shipment of organic wheat. In another case, an egg producer was requested by his primary customers to implement a Hazzard Analysis and Critical Control Points (HACCP) system for ensuring food safety. Both of these producers accepted the challenge of significantly modifying their

operations in response to customer requests. And both were pleased with the resulting improvements in efficiency, effectiveness and/or marketability.

Certain production and storage activities performed by the TEPAP respondents are aimed at increasing customer satisfaction. Seed buyers, for example, want a pure product with high germination. To be a seed grower, e.g., seed soybeans and seed wheat, requires special care in harvest, handling and storage. The seed must be harvested at the correct humidity level so it does not crack while in storage. The product must be kept pure and mixing varieties must be avoided, which may require extra storage bins. Targeting a particular market may involve testing for a specific quality characteristic, for example, relative feed value with alfalfa hay. Products must be kept segregated based on this characteristic (and, presumably, the intended target market), and identified while in storage.

Some of the TEPAP respondents mentioned that they provide special delivery services that are not traditionally provided in commodity agriculture. Perhaps the most basic method of differentiated delivery service is delivering products at the desired time on the desired day. Another example of this type of activity is rapid response delivery, or fulfilling rush orders. Some TEPAP respondents also distinguish themselves through special packaging and the fulfillment of small orders. The common theme of these methods of satisfying customers through delivery activities is paying attention to what customers want and taking care to give it to them.

Information management is essential for producers of differentiated agricultural products, especially for those who store what they produce. A quote from a producer and packager of dry edible beans[37] illustrates the importance of information management.

> "The computerized record-keeping systems are critical to us now in managing our positions. We run a lean staff in the office here. Everything is keyed in, so we know instantaneously what our positions are. We're handling nine different varieties of dry beans, and that's not including all of our other farm products. Within that, you've got anywhere from three to five "quality classes," let's say. And it just kind of exponentially grows, to keep track of our positions and what we're really handling here, and to manage our plants accordingly, and what they're processing or shipping each week."

A different producer[38] (who produces and markets high quality alfalfa hay) provided another example of the importance of information management and logistics. He emphasized his ability to segregate his hay by quality and to determine the appropriate market for each lot. He stated that for the dairy market "everything has to be right." In contrast, for his local beef cattle sale barn, the primary concern is that the hay "has to look right."

Information management applications besides the quality and varieties of products held in inventory were also mentioned by TEPAP respondents. One producer discussed an Internet-based system that he uses to post crop development information. This system enables his European customers to stay informed of the status of agricultural products they have contracted as the products are being grown. Some TEPAP respondents stressed the management of information related to their farmland. These producers maintain detailed computerized records of what was grown on each plot of their land, yields, chemicals applied (and how much), and so forth. These producers believe that in the long term this information

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37 Respondent #157.

38 Respondent #320.

will enhance the value of their land when it is communicated to potential purchasers of their land.[39]

These activities (i.e., networking and visiting with customers; implementing innovations in functions such as production, storage, inventory management, and delivery; and progressive information management) can have cumulative, positive impacts over time. There are two special areas of potential impact that are intangible but potentially very valuable. First, relationships with customers are established and developed over time. If a particular producer has performed well in the past by providing high quality products or exemplary service, then a stock of customer goodwill is built. While this intangible asset is difficult to measure, TEPAP respondents noted that customer relationships had a positive effect on customer decisions.

Second, good performance in the listed activities leads to the intangible asset of a good reputation. Other buyers of agricultural products who are not current or former customers become aware of the reputation of a given producer. A positive reputation could be the determining factor when a buyer is selecting a new supplier. The concept of producer reputation, however, actually extends beyond the population of current and potential customers. Producers have reputations among suppliers, other agricultural producers, and throughout the community. A producer's reputation among these non-customer groups can indirectly affect success at obtaining new business. Consider, for example, a corn grower seeking to obtain a contract to grow seed corn. When he approaches a local seed corn dealer

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[39] Of course, maintaining and using this type of information is not limited to producers of differentiated agricultural products.

(i.e., a supplier) to ask for a referral to the individual in charge of contracting seed corn acreage (i.e., a potential customer), reputation may affect the amount of cooperation received.

The TEPAP study suggests that a number of items should be included in an inventory of resources for product-oriented agriculture. First is the extent to which producers in the agricultural subsector under consideration engage in networking. This will entail an assessment of the frequency that producers put themselves in position to engage in informal discussions and promotional activities with end users of their products. Examples of networking opportunities include trade shows, conferences, and other meetings. While the amount of networking that has already taken place is a key indicator, the *capacity* of the producers in the subsector to engage in networking also matters. To the extent possible, the resource inventory should include an assessment of the willingness and ability of producers to network with end users. Participation in certain activities may provide indirect evidence of networking capacity. For example, serving in local government or in leadership roles in civic or religious organizations almost certainly requires meeting diverse people, communicating and persuading, and other activities that require interpersonal skills. If producers in a given subsector have this type of experience, then they would likely be able to engage in networking activities with end users. Training in public speaking, human relations, and foreign languages would also provide evidence of networking capability at the level of the individual.

The preceding discussion about networking also applies to visiting customers. A resource inventory for product-oriented agriculture should contain information on the capacity of producers to interact with customers to ascertain the products, features, and services that will be in demand, and to communicate their capabilities to provide these

attributes. Since past behavior is a good indicator of future activities, the inventory should include an assessment of how commonly visits by agricultural producers to current and potential customers have occurred. If producers in the subsector employ sales representatives, that should be noted. The inventory should also include an appraisal of the willingness and ability of the agricultural producers to visit customers, especially if customer visits have been infrequent in the past.

As indicated above, producers may have an opportunity to enhance the perceived bundle of benefits to the customer by performing service activities. An inventory of resources for product-oriented agriculture should contain an assessment of the capability of producers to perform customized and innovative operations or services. Certifications (e.g., organic and HACCP) provide evidence of innovative services. It should be noted if producers have a history of working with end users to develop new products through field trials, post-harvest processing, or innovative packaging.

Being responsive to customer requests (e.g., for special product features or services) is pivotal in building relationships and establishing a positive reputation for a producer of differentiated agricultural products. For this reason, a resource inventory for product-oriented agriculture would be incomplete without some measure of the degree of responsiveness demonstrated by producers in the relevant subsector. This variable would probably best be measured by surveying customer groups. It should also be noted that even if producers are willing to become more responsive to customer requests than they had been in the past, they may be hamstrung by a negative reputation among customers.

Other capabilities addressed above in this section should also be part of an inventory of resources for product-oriented agriculture. These include capabilities related to storage,

segregation and identity preservation, logistics, responsive delivery (e.g., small quantities or short notice), and information management. These capabilities can be assessed by surveying both the agricultural producers and customers of the subsector in question. One possibility is that the producers may claim to have greater capabilities in these functions than is perceived by customers. Such a situation may arise for different reasons. One explanation may be puffery on the part of the producers. Alternatively, the producers may actually believe that they have advanced capabilities but they are in fact unaware of the true state of the art of technology. Finally, it may be that the producers truly have outstanding capabilities, but for some reason the customers are not aware of the capabilities of the producers. In any case, the producers in question would benefit by being informed of the disconnect between the capabilities they claim to have and how they are perceived by customers.

The resources and skills discussed in this section have generally been intangible in nature. For example, a positive reputation, special relationships with customers, and the ability to respond to customer requests were mentioned as necessary for producers to compete successfully in product-oriented agriculture. The TEPAP interviews revealed that these intangible resources and capabilities were most essential in creating value in the production and marketing of differentiated agricultural products. This is not meant to imply that tangible resources are unnecessary or unimportant in product-oriented agriculture. At the same time, tangible resources (such as physical facilities and equipment) are among the most easily imitated; and according to the Resource-Based View of the Firm, easily imitated resources cannot provide a sustained competitive advantage.

4. Traditional Inventories of Agricultural Resources

Scholars at land grant colleges of agriculture and government analysts historically have produced inventories of agricultural resources. Some of these inventories use a state for the unit of analysis and some have a national focus. This section will examine three inventories that have been compiled: the 1997 U.S. Census of Agriculture, the Status and Potential of Michigan Agriculture (SAPMA), and the Florida FIRST Base Papers. A brief description of the three inventories and their respective methodologies is included below. The section will conclude with an examination of the information contained in these three inventories of agricultural resources, and a consideration of how well suited these traditional inventories of agricultural resources are for strategic decision making in differentiated agricultural markets. In particular, the limitations of past approaches (to support strategic decision making in product-oriented agriculture) will be specified.

The U.S. Census of Agriculture is the first example of a resource inventory for agriculture. Since 1840, the federal government has periodically taken a census of agricultural activity. The frequency of these censuses has been every four or five years, starting in 1925. The information is obtained using survey research techniques. For the 50 states, data is collected by mailing out census report forms and having respondents mail back completed forms. In 1997, for example, more than 3 million report forms were sent out to individuals and businesses involved with production agriculture. The information presented in the Census is based solely on producer responses. This necessarily limits the scope of the information included in the Census.

Michigan State University and the Michigan Agricultural Experiment Station undertook a project "to take inventory of relevant research, identify trends and future

scenarios of Michigan agriculture, and appraise the potential for growth" (Ferris, p. 1.) The Status and Potential of Michigan Agriculture (SAPMA) project is the second example of an agricultural resource inventory. It involved the efforts of approximately 70 faculty and graduate students at Michigan State from 1990 through 1992. The SAPMA initiative was undertaken in two phases. In Phase I, a series of background reports about the history and current environment of Michigan agriculture was generated. The Phase II reports focused on individual agricultural commodities. The project culminated in a two day conference that was attended by the researchers and nearly 150 representatives of Michigan's agriculture sectors.

Another assessment of the resources of a state and how they could be capitalized upon by agriculture was produced by the University of Florida in 1999. The results of the study were published in an Institute of Food and Agricultural Sciences (IFAS) document titled *Florida FIRST Base Papers*. Florida FIRST (Focusing IFAS Resources on Solutions for Tomorrow) is a strategic planning project serving the state's food, agricultural, natural, and human capital resources. The scope of the Florida FIRST project was somewhat broader than that of SAPMA. Florida FIRST was intended to "identify opportunities for UF/IFAS to help Florida expand domestic and international business, enhance natural resources, provide consumers with a wide variety of safe and affordable food, support community development, maintain a sustainable food and fiber system, and improve the quality of life" (Martin). The Florida FIRST project was similar to SAPMA, however, in that it involved a large number of university researchers and resulted in several background papers and commodity-specific papers.

The contents of the three inventories of agricultural resources are summarized in Table 2.1 below. The table entries for the 1997 Census are based on Volume I, Part 51 (i.e., the national series). The information given in the parts of the Census covering individual states covers the same information categories, only reported at a state level. A detailed (i.e., itemized) listing of contents of these three inventories of agricultural resources is presented in Appendix B.

Table 2.1: Summary of the Type of Information Included in Three Inventories of Agricultural Resources.

Information	*C of A*	*SAPMA*	*FIRST*
A. Agricultural Inputs	**Yes, in part**	**Yes, in part**	**Yes, in part**
B. Agricultural Outputs	**Yes, in part**	**Yes, in part**	**Yes, in part**
C. Demographic Information Regarding Farms and Farmers	**Yes, in part**	**Yes, in part**	**Yes, in part**
D. Prices and Returns Related to Farming	**Yes, in part**	**Yes**	**Yes, in part**
E. Environmental Information	**Yes, in part**	**Yes, in part**	**Yes**
F. Consumer/Market Information and Projections	**No**	**Yes, in part**	**Yes**
G. Labor Force Information and Community Demographics	**Yes, in part**	**Yes, in part**	**Yes, in part**
H. Supply/Demand Projections	**No**	**Yes**	**Yes, in part**
I. Information, Trends, and Projections Related to Other Factors That Influence Agriculture	**Yes, in part**	**Yes, in part**	**Yes, in part**

(Note: C of A = 1997 Census of Agriculture, SAPMA = Status and Potential of Michigan Agriculture, FIRST = Florida FIRST.)

As indicated in Table 2.1 above, there is a tremendous amount of information related to agriculture in the three resource inventories featured. The information provided in these traditional inventories generally relates to the process of producing standardized outputs using standardized inputs. Some of it pertains to cost of production, presented with the underlying perspective that competitive advantage is primarily enjoyed by agricultural industries in low-cost areas. This information is very useful for decision making in commodity-oriented agriculture. The relevance of these inventories for product-oriented agriculture now needs to be assessed.

Due to its method of collecting data and broad scope, the Census of Agriculture is limited in supporting decision making for firms involved in product-oriented agriculture. As mentioned above, the Census of Agriculture is a compilation of mail survey responses from firms that are related to agricultural production. This precludes the inclusion of information related to the market structure of input industries and customer industries. Analyses of upstream and downstream industries are important parts of Porter's Diamond Model. Furthermore, the fact that the Census of Agriculture is based on millions of mail survey responses makes it impossible to include consideration of resources that are valuable and rare, two of the four requirements for resources to provide a sustainable competitive advantage.

The SAPMA reports and the Florida FIRST Base Papers give some consideration to factor conditions, supporting (i.e., input) industries, and customer groups. The information provided, though, is not as detailed as required to implement a full analysis based on Porter's Diamond Model. Inadequate attention is paid to the quality of human capital resources, for example. Further, it would be useful to have an evaluation of how innovative the firms are in industries that provide inputs to agricultural producers in the region under consideration

and how demanding and sophisticated local customers are. This type of information is not included in the SAPMA or Florida FIRST reports.

The majority of the information in all three inventories (e.g., land in farms and number of farms) is related to standardized inputs or standardized outputs of the agricultural production process. In product-oriented agricultural markets where special varieties and special characteristics matter, this type of information is of limited value. The SAPMA reports and the Florida FIRST Base Papers do provide information on resources such as agro-ecological conditions that could potentially support a sustainable competitive advantage for product-oriented agriculture. When these resources are considered in these inventories, however, there is typically not enough context given to determine how significant the resources are to production of differentiated agricultural products.

Some issues that influence competitive advantage[40] are not fully addressed by the three inventories. For example, when agricultural policy is addressed in the SAPMA or Florida FIRST reports, it is done at a federal level. While federal laws and regulations can significantly affect the competitiveness of production agriculture at a national level, they have much less effect on inter-regional competitiveness. When examining the competitiveness of, say, the Michigan potato industry versus the North Dakota potato industry, information specific to institutions in these states (e.g., state environmental regulations and state tax policy) would be more useful than projections of federal agricultural policy.

Both Porter's Diamond Model and the Resource-Based View of the Firm indicate the importance of inter-regional comparisons in identifying potential competitive advantages. But

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[40] According to the Resource-Based View of the Firm, Porter's Diamond Model, or the TEPAP study.

there are, in fact, very few inter-regional comparisons in the SAPMA or Florida FIRST reports. One of the few examples of an inter-regional comparison is a comparison of the cost of production of competing regions that appears in a SAPMA Phase II report. But this type of comparison is most useful for commodity agriculture, since it focuses on which region can produce commodities at the lowest cost.

The TEPAP empirical study of agricultural producers indicated that several resources are necessary to succeed in the production and marketing of differentiated agricultural products. Several of these resources are not included in three prior efforts to inventory agricultural resources. For example, no mention is made of information resources. While SAPMA and Florida FIRST mention human capital resources, the information provided in these inventories is not sufficiently detailed to be of strategic value to product-oriented agricultural producers. In particular, none of these inventories addresses the quality of human capital resources. The TEPAP interviews indicated the importance of marketing skills and resources to product-oriented agricultural producers. Examples of these skills and resources include producers' reputations for quality and service and ability and willingness to visit customers, to network with customers, and to investigate customer needs. The topic of marketing resources, however, is not addressed by these three inventories. Due to the deficiencies and limitations discussed above, the three prior efforts to inventory agricultural resources are not particularly well suited for product-oriented agricultural business strategy formulation.

This section reviewed three prior efforts to inventory agricultural resources. One effort (the 1997 U.S. Census of Agriculture) was national in scope and the other two (SAPMA and Florida FIRST) focused on one state. While the scope and quantity of

information contained in these inventories is great, the content is primarily applicable to commodity agriculture (i.e., quantities of generic inputs and generic outputs). Other information, not included in these inventories, must be gathered and presented to support strategic management in product-oriented agriculture. Examples of this type of information were given.

5. Resource Inventory Framework for Product-oriented Agriculture

Given the deficiencies of prior inventories, a new approach appears appropriate. A proposed alternative resource inventory framework for product-oriented agriculture will now be introduced based on the Resource-Based View of the Firm, Porter's Diamond Model, and the empirical study of TEPAP producers. This framework is a theoretical contribution in that it represents a significantly different approach to inventorying agricultural resources than past approaches, and is grounded in the most relevant management theories. The resources in the proposed inventory framework are divided into two general categories: "Less-controllable Resources" and "More-controllable Resources." The first category, less-controllable resources (LCR), may be defined as assets over which individual firms have incomplete power to regulate and direct. While firms (either individually or collectively) may have some degree of influence over LCR, they do not have unrestricted command over them. This category is mainly comprised of resources that are elements of the external environment of the firm. In contrast, more-controllable resources (MCR) are assets over which individual firms have general authority to regulate and direct. Individual firms have substantial control over the deployment (or use) of MCR. This category is mainly comprised of resources that are internal elements of individual firms.

The two categories of resources are described more fully below. In particular, the critical items to inventory for product-oriented agriculture (versus commodity agriculture) are emphasized. It should be noted that the "external/internal" dichotomy is not as important as the degree of control agribusinesses have over resources. This distinction will become clearer in the discussion of implications for agribusiness decision makers at the end of this section.

5.1 Less-controllable Resources

Most of the resources in this category are suggested by Porter's Diamond Model, but some resources unique to agribusiness are also included. In accordance with Porter's Diamond Model, the less-controllable resources are related to the geographic location of the agricultural firm or subsector under consideration. There are six subcategories of resources in the category of less-controllable resources. These subcategories are listed in Table 2.2 below.

Table 2.2: Types of Less-controllable Resources.

Less-controllable Resource Subcategory	*Examples*
1. Agro-ecological Resources	Micro-climatic zone, lack of pest pressure
2. Access to a Beneficial Labor Supply	Supply of available workers in the area who have skills and experience related to agricultural product production
3. Institutional Infrastructure	Advantageous tax treatment, lenient regulation
4. Physical Infrastructure	Well developed system of roads and railroads
5. Access to Beneficial Markets	Nearby processor(s), final consumers, as applicable
6. Access to Beneficial Related and Supporting Industries	Nearby production input suppliers, consultants, financial institutions, etc.
7. Support Infrastructure	County and state extension personnel, SBA office

5.1.1 Agro-ecological Resources

The first subcategory of resources in Table 2.2, agro-ecological resources, is specific to agribusiness. Agro-ecological resources are important for agricultural production firms, especially in crop production. Agro-ecological resources are so important to agricultural production (in contrast to non-agricultural manufacturing) that they warrant explicit consideration in an inventory of resources. A list of some of the different agro-ecological resources required for commodity agriculture and product-oriented agriculture is presented in Table 2.3 below.

Table 2.3: Examples of Agro-ecological Resources Required for Commodity Agriculture and Those Required for Product-oriented Agriculture.

Agro-ecological Resources crucial to the success of commodity-oriented agribusiness firms:	*Agro-ecological Resources crucial to the success of product-oriented agribusiness firms:*
1-C. Large tracts of land.	1-P. Land laid out so that cropping flexibility and diversity are possible.[41]
2-C. Day length, growing degree days, etc., amenable to the production of the major commodity crops with world-class yield per acre and per labor hour. (Goal is to maximize yield, subject to some minimum quality standard.)	2-P. Day length, growing degree days, etc. amenable to the production of a portfolio of specialty crops that are complementary in terms of marketing channels or some other value chain activity. (Goal is to provide unique products that satisfy the ever-changing wants and needs of specifically targeted customers. This involves product or service differentiation, e.g., through quality.)
3-C. Crop genetics that lead to the production of (commodity) output with world-class yield per acre and per labor hour.	3-P. Crop genetics that lead to the production of output with special attributes/characteristics that are in demand.
4-C. Soil that will not lose fertility after many seasons of commodity crop production.	4-P. Soil with unique properties that allows the production of crops with outstanding quality characteristics (e.g., flavor).
5-C. Long growing season with moderate temperatures that facilitates high-yield crop production.	5-P. Timing of growing season that provides a 'window of opportunity' to supply customers with a perishable product when competing regions cannot.
6-C. Moderate climate with stable temperature and humidity that allows for low heating costs and disease losses with livestock.	6-P. Unusual climate that is well-suited to the production of special breeds of livestock whose products are desired by a small but highly profitable group of consumers.

[41] Geographically dispersed or separated production sites tend to be more appropriate for product-oriented (or value-added) agriculture than for traditional/commodity agriculture.

An example of a climatic agro-ecological resource that provides a competitive advantage to product-oriented producers is given by McCallum. Two competing regions for tart cherry production are Michigan and Utah. Many years ago, a Michigan producer developed a method to make dried cherries, which are sold as a niche market product. In the 1980s, Utah growers adopted the technology, and modified it to meet their needs. Due to Utah's dry climate, however, Utah cherries ripen with a higher sugar content than Michigan cherries. This results in a very good tasting product with different production costs. Consequently, Payson Fruit Growers, a Utah cooperative, has met with substantial success in producing and marketing branded dried cherries.

As mentioned in the theoretical background section above, Porter calls natural resources such as agro-ecological resources "basic factors." And since basic factors tend to be either unimportant in creating competitive advantage or create an unsustainable competitive advantage, agro-ecological resources should not be overly emphasized in a resource inventory for product-oriented agriculture. According to the RBV, on the other hand, it is possible that agro-ecological resources could provide a sustained competitive advantage. This will only occur if the specific resource meets the criteria for a sustained competitive advantage, i.e., valuable, rare, imperfectly imitable, and non-substitutable. Some agro-ecological resources are indeed rare, although perhaps not unique. This highlights the issue (addressed in Barney, 1991) of how rare a resource must be to provide a competitive advantage. As long as the number of firms that possess the valuable resource is less than the number required to generate perfect competition, then it may provide a competitive advantage. Imitability and substitutability are also important issues for agro-ecological resources. Certain agro-ecological resources (e.g., an early season that provides a window

for supplying vegetables) may be imitated or substituted for in laboratories or greenhouses. It is unlikely, however, that these methods would be economically feasible methods of supplying commercial volumes. Thus, the possibility exists that agro-ecological resources could provide a sustained competitive advantage.

5.1.2 Access to a Beneficial Labor Supply

Because labor is an essential input for agricultural production firms, the second subcategory of less-controllable resources (LCR) is access to a beneficial labor supply. One example is the requirement for seasonal workers in some agricultural production enterprises. Furthermore, including workers available (but currently outside of firms) in an analysis of resources is advisable since a resource inventory for product-oriented agriculture may be compiled to gage the potential for expansion of a subsector in the study area. Access to a beneficial labor supply is characterized by the labor market conditions facing the firms in the agricultural subsector being studied. The labor supply that makes up this subcategory is the pool of workers available for expanding or newly-formed firms. It does not include the human capital resources that are employed by firms in the subsector under consideration, which will be considered as a separate type of more-controllable resources below.

To create a resource inventory for product-oriented agriculture, a reasoned estimate must be made of the unskilled labor (both seasonal and year round) required to produce the products under consideration. A simple count of the number of the number of available unskilled workers is a somewhat straightforward exercise. Unskilled labor is required in the production of most agricultural products, but as Porter noted in his discussion of hierarchies of factors, skilled workers are required to achieve product differentiation. The implication of this is that a resource inventory for product-oriented agriculture must contain an

assessment of the general skill level of the work force available to firms in the subsector under consideration. Such an assessment is less clear cut than a count of the unskilled workers available, but a reasonably clear picture could be developed by the analysis of secondary data. Examples of data sources for the assessment of labor quality include demographic information on the education level of residents of the study area and performance of students in area schools on standardized tests.

The labor supply available to firms in an agricultural subsector is largely determined by the total pool of workers available locally. It is also possible, however, that firms in a subsector could draw workers who are currently living in distant locations. This applies to both skilled and unskilled workers. To get a complete picture of a local subsector's access to a beneficial labor supply, therefore, the potential for the recruitment of workers from other regions must also be assessed. Such an assessment should include a number of factors. One of these factors is the quality of life in the area, including such issues as climate, housing, schools, health care, recreation and cultural opportunities. Perhaps as important as the actual quality of life in the area is *how potential employees perceive* of the quality of life in the area. Another factor is the ability of firms in the subsector to offer attractive pay and benefit packages to new employees, and their reputation for meeting the needs of employees.

5.1.3 Institutional Infrastructure

The third subcategory of less-controllable resources is the institutional infrastructure, or rules of the game. The institutional infrastructure is comprised of all of the laws, rules, and policies that are in effect in the region that is being inventoried. This subcategory of resources is related to the "government" element in Porter's Diamond Model. Because of the wide range of activities involved in agricultural production, the scope of the relevant

institutional infrastructure is quite vast. It includes practically the entire set of laws, rules, and policies that apply to non-agricultural manufacturing. This includes tax law, labor law, and policies for motor vehicle registration (among others). But due to the degree to which land is required for agricultural production, another set of laws, regulations, and policies also apply. For example, there are special environmental regulations for agricultural production, and laws and policies regarding wildlife are also relevant.

In most cases, the advantages provided by institutional infrastructure are related to cost. Consider, for example, a two-state region that is suitable for growing a processing vegetable. The first state could have lower taxes (e.g., on income, personal property, and for workers' compensation), more lenient environmental and labor regulation, and a case law history that is more pro-business than the second state. Assuming that the quality and service levels in the two producing regions are identical, processors in this case would likely procure raw materials from the first state, since the institutional infrastructure supports a lower cost structure there. But institutions that reduce costs for agricultural production firms are not as relevant to competitive advantage in differentiated product markets as they are in commodity markets. Therefore, if the inventory of resources is intended to support decision making by firms involved in product-oriented agriculture, the emphasis should not be on institutions that contribute to a relatively low cost structure.[42]

Some institutions (e.g., laws, regulations, and policies) can potentially contribute to the competitive advantage of product-oriented agriculture. These would include government

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[42] A possible exception is if there is a law that places agricultural production firms in a state at a profound and obvious cost disadvantage. Such a law could be highlighted so that affected parties could lobby to change the law, thus leveling the playing field.

efforts to distinguish or promote agricultural products from a particular region. For example, the Georgia legislature passed a law that restricts the use of the term "Vidalia Onions" to a small number of counties in Georgia, plus a few other farms in adjoining counties that were grandfathered into the legislation. The legislation includes monetary penalties for firms involved in fraudulently marketing unqualified onions as Vidalia Onions. A related example pertains to institutions that establish specially designated viticultural regions. These regions specify where grapes may be grown that produce wine with a name that is recognized for quality. A state with an organic certification program that is well recognized and respected would be another example of an institution that contributes to the competitive advantage of product-oriented agricultural production firms.

Laws and policies that contribute to the differentiation and promotion of agricultural products grown in a state should be emphasized in a resource inventory for product-oriented agriculture. In addition, laws and policies could enhance the quality of labor in a region or provide support in business planning, obtaining financing, or other important functions. These types of institutions affect competitive advantage through other types of resources, such as human capital resources and support infrastructure, which will be discussed below.

5.1.4 Physical Infrastructure

The fourth subcategory of less-controllable resources is physical infrastructure. This subcategory includes such things as roads, railroads, deep seaports, airports, telecommunications infrastructure, and customs offices. It should be noted that the items in this category are *public* infrastructure, generally available to all firms in a region. (Private physical assets will be discussed in the context of physical capital resources in Section 5.2.1.)

As cited above, many of the items that make up the physical infrastructure of a region are generalized factors, using Porter's terminology. And since generalized factors tend not to support sustainable competitive advantage, the physical infrastructure components that are generalized factors should not receive undue attention in a resource inventory for product-oriented agriculture. It is possible, though, that specialized and advanced elements of physical infrastructure could contribute to the competitiveness of an agricultural subsector in a given region. One area in which physical infrastructure could have a positive impact is in facilitating just-in-time delivery of perishable products. For example, Kenya has developed a sophisticated air transport system to allow for the timely delivery of cut flowers to European markets (Kimenye).

5.1.5 Access to Beneficial Markets

The preceding subcategories of less-controllable resources have all pertained to supply-related issues. No resource inventory would be complete without addressing demand. For this reason, access to beneficial markets is included as a subcategory of resources in the inventory. Access to beneficial markets is related to Porter's determinant of national advantage termed "Demand Conditions." On the surface, it may appear that "demand" and "markets" do not qualify as resources as defined in the Resource-Based View of the Firm because they are not tied to (or controlled by) firms. But the *access* that firms have to markets (due to their proximity to customers or to their reputation and status among industry participants, or both) is a semi-permanent characteristic, and therefore can be legitimately considered a resource.

The access that agribusiness firms have to markets arises from two sources. First, firms may have established contacts and relationships with customers. Because market access

from this source is largely controllable, consideration of this type of resource will be included in the discussion of more-controllable resources below. (See Section 5.2.4, "Marketing and Information Resources.") This part of the resource inventory concerns less-controllable resources, which are generally related to the environments of firms. For this reason, the access to markets considered in this section relates to the proximity of markets, i.e., nearby customers and potential customers.

To establish a clear picture of the markets in a particular state or region, a resource inventory must include certain basic information that characterizes demand at different downstream levels. This information will, of course, vary depending on the agricultural product under consideration. For studies involving fresh fruits and vegetables, the basic information will include the number of end consumers in the study area as well as a description of industries made up of intermediate members of the supply chain. In this case, these industries would include the packing and shipping industries, the part of the retail food industry that markets fresh produce, food service distributors, the restaurant industry, and the institutional food service industry.

Porter suggests that the mere *size* of demand in a region is not the most important factor in determining whether demand conditions contribute to competitive advantage in an industry. Rather, the *quality* of demand in a region also plays a role in competitiveness. That is why this subcategory of resources is called access to *beneficial* markets. As mentioned above, it is better for an industry to have demanding and sophisticated customers located nearby. Further, industries benefit when nearby customers are progressive in their preferences. In other words, it is better for an industry if local customers are "ahead of the curve" regarding product features and services demanded. Based on this reasoning, the

resource inventory for product-oriented agriculture should include more detailed information than simply the number of final consumers in the region and the number and size of channel customers and processors in the region. The detailed information required is an assessment of the quality of the demand at each downstream level of the supply chain. This should include, for example, whether or not channel customers and end consumers are demanding, sophisticated, and have progressive preferences relative to their counterparts in other regions.

It is difficult to quantify the progressiveness and the degree of sophistication of customer preferences. An accurate qualitative evaluation, however, could be made by examining data from multiple sources. An example of a useful source of information concerning customer evaluations is a trade magazine or newsletter that publishes ratings of processors or distributors. Further, the age and quality of the physical equipment and facilities of downstream customers will shed light on their progressiveness. The adoption of certain modern management programs or systems also tends to indicate that supply chain participants are progressive. Example of these programs include HACCP, ISO 9000,[43] category management, and Efficient Consumer Response (ECR).[44] All of these factors can be evaluated by visiting applicable facilities, by obtaining relevant newspaper or trade press articles, or by interviewing key industry informants. To be useful, this information should be compared to a benchmark industry in a competing region or to a national average.

Finally, the fact that a user of an agricultural product is located nearby does not guarantee that producers of the product will also have access to this market. It may be that

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[43] ISO 9000 is an international quality standard for manufacturing operations.

[44] ECR is a program implemented by grocery manufacturers and retailers intended to drastically reduce distribution costs.

due to prior experiences (or an inaccurate perception of the capabilities of local growers), a processor may not consider local sources. In such a case, despite the fact that producers have a nearby market, from a practical standpoint, they do not have access to this market.

5.1.6 Access to Beneficial Related and Supporting Industries

This subcategory of resources arises directly from Porter's concept of Related and Supporting Industries. Related industries are defined as ". . . those in which firms can coordinate or share activities in the value chain when competing, or those which involve products that are complementary." (p. 105). Porter's discussion of supporting industries focuses on supplier industries. Agricultural producers' access to beneficial related and supporting industries should thus be included in the resource inventory for product-oriented agriculture.

Related industries can benefit a given industry if they can share activities such as technology development, manufacturing, distribution, marketing, or service (Porter). An example of this relationship involves further processing of soybeans. Manufacturing a frozen beverage made from soybeans uses some of the same equipment that is required to process individually quick frozen (IQF) vegetables. A local soybean subsector could potentially benefit, therefore, if IQF vegetable processing facilities are located nearby. This is an example of two related industries sharing manufacturing capacity. Another example is two different agricultural crops that may be grown in a certain region that both require irrigation. Presumably, advances in irrigation technology (i.e., technology development) for one crop could also be applied to the other crop.

Suppliers of inputs can also benefit an agricultural production industry in a given location. The particular inputs (as well as the quantity and quality of each) required for

production varies depending on the specific agricultural commodity or product. Commonly mentioned types of inputs required include financial capital, seed, agricultural chemicals, vehicles and equipment, and buildings.[45] All of these inputs are relevant to both commodity and product-oriented agriculture. In product-oriented agriculture, however, the availability of certain other, more sophisticated inputs may also contribute to the competitiveness of a subsector in a specified location. Examples of these more sophisticated inputs include consulting services and financial services tailored to the needs of agricultural producers who produce differentiated products.

In some cases, proximity to supporting industries will affect the cost structure of an agricultural production firm. A TEPAP respondent who produces feed grains in Montana referred to this phenomenon. He stated that his firm is at a cost disadvantage compared to firms in other states, because many of his inputs have to be shipped great distances. Of course, a resource inventory for product-oriented agriculture should focus more on proximity to suppliers of inputs that facilitate production of agricultural products with special features, rather than suppliers of inputs that simply contribute to a low cost structure.

The availability of basic factor inputs should be viewed as a necessary but not sufficient condition for competitiveness in differentiated product markets. This is also supported by the RBV's requirements for a resource to provide a sustained competitive advantage. The types of inputs that could contribute to competitive advantage in product-oriented agriculture are advanced factors. An example of this type of input is sophisticated, proprietary technology for storage or packaging. But in order for such an input to provide

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[45] Another input, labor, was considered separately in Section 5.1.2, "Access to Beneficial Labor Markets."

a sustainable competitive advantage, it must meet the conditions of imperfect imitability, imperfect mobility, and non-substitutability. Other advanced factors could provide a source of sustainable competitive advantage if they are limited in supply, and firms in the study area have better access to them than firms in other regions have. An example of such a factor would be a consulting firm with special abilities related to identifying specialized markets who has a full load of clients in the area where the firm is located.

5.1.7 Support Infrastructure

The final subcategory of less-controllable resources is the support infrastructure. It is comprised of nearby government agencies and nonprofit organizations that could benefit an agricultural subsector. This subcategory overlaps with the Government element and the Related and Supporting Industries determinant from Porter's Diamond Model. Due to historical factors, agricultural production is a unique industry in terms of the amount of government support it receives. At the federal level, the USDA provides a vast array of services. These services include, but are not limited to, the following: grants to study the feasibility of value-added ventures, varietal field trials, research into pests and diseases, and loan guarantees. In theory, each agricultural producer in the United States has equal access to the services and research results of the USDA. But in practice, agricultural producers benefit by having nearby offices that administer programs, by having USDA research conducted locally, and by having particularly skillful or helpful federal employees stationed nearby. A resource inventory for product-oriented agriculture should thus include a listing of the federal offices and facilities in the study area, as well as an assessment of their (actual and potential) contribution to the production and marketing of differentiated products in the region.

There are also a substantial number of government organizations at the state level that assist agricultural firms: state departments of agriculture, land grant colleges of agriculture, and agricultural experiment stations. Cooperative extension services have a statewide presence as well as county offices staffed by specialists in various fields. Over the years, some land grant universities and state extension services have de-emphasized agriculture in favor of community development, environmental issues, natural resource issues, and other program areas. In Wisconsin, for example, the Community, Natural Resource, and Economic Development program within extension has expanded so that it is nearly as large as the agriculture program (McDowell). In addition, Ilvento notes that during the 1980s, the University of Minnesota shifted extension funds and personnel from the college of agriculture to other colleges. Extension and the land grant universities in some other states have maintained an emphasis on agriculture. For example, Michigan State University and MSU Extension have placed increased emphasis on the production and marketing of value-added products. Two extension agents have been appointed as value-added specialists to facilitate the establishment of grower-owned processing enterprises in Michigan.

The public economic development infrastructure in a state can also have a major impact on the success of new, product-oriented agricultural ventures. Due to the substantial state-to-state variation in the quantity and quality of government organizations that assist agriculture, an assessment of state support organizations for agriculture (including, but not limited to: extension, the applicable land grant university, and the public economic development infrastructure) should be included in the resource inventory for product-oriented agriculture.

The support infrastructure relevant to product-oriented agriculture in a particular state is not limited to government organizations. Private, nonprofit groups also serve agriculture. In Michigan, there are a number of organizations that support sustainable agriculture.[46] Other states have private, nonprofit organizations that promote agricultural cooperatives or explore novel ways to utilize (or process) the agricultural products grown in the applicable region. Foundations also provide assistance to groups of producers. While most large foundations provide grants to applicants located throughout the nation (or even internationally), local applicants will likely have an advantage in receiving funding. The Kellogg Foundation in Battle Creek, for example, has shown special interest in Michigan agriculture by making grants for several projects focused on Michigan over the years. Additionally, statewide commodity groups are involved with research, education, and promotion. These groups have varying funding levels and degrees of influence. Since these types of organizations can have a substantial impact on the competitiveness of differentiated agricultural product industries in a state, a resource inventory for product-oriented agriculture should contain a listing and assessment of the applicable private, nonprofit organizations.

5.2 More-controllable Resources

This section considers resources that agribusiness firms have greater control over, as compared to the resources examined above. These resources, called "more-controllable resources," are generally internal to firms. While agribusiness decision makers have a great

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[46] These include Michigan State Sustainable Agriculture Network (M-SAN), the Detroit Agriculture Network (DAN), the Michigan Organic Food and Farming Alliance (MOFFA), Michigan Integrated Food and Farming Systems (MIFFS), and the Michigan Agricultural Stewardship Association (MASA).

degree of control over the resources described below, it should be noted that they do not have *complete* control over them. Consider the employees of an agribusiness firm (i.e., human capital resources), for example. Managers can exert a substantial degree of control over employees' behavior through training and by establishing incentives, but managers can never control absolutely every aspect of employee behavior. At the same time, employee behavior may be controlled to a much greater degree than agro-ecological resources or the institutional infrastructure.

The five subcategories of more-controllable resources are listed in Table 2.4 below. These resources are drawn primarily from the Resource-Based View of the Firm. The remainder of this section contains a description of the types of resources in Table 2.4 and information on how they should be included in the resource inventory for product-oriented agriculture.

Table 2.4: Types of More-controllable Resources.

More-controllable Resource Subcategory	*Examples*
1. Physical Capital Resources	Specialized packaging equipment, special storage facilities
2. Financial Capital Resources	Liquid funds and lines of credit
3. Human Capital Resources	Workers of varying skill levels employed by firms
4. Marketing and Information Resources	Databases containing information about customer needs, networks of customer contacts
5. Organizational Capital Resources	Socially complex and causally ambiguous processes within firms

5.2.1 Physical Capital Resources

The first subcategory of more-controllable resources is called physical capital resources. These are the tangible tools, equipment, computers, vehicles, buildings, and other facilities possessed by firms in the subsector under consideration. (For a complete consideration of the economics of physical capital resources, see Williamson.)

A listing of general purpose tractors, barns, and other physical capital resources would suffice for commodity agriculture. To be informative for strategy development in product-oriented agriculture, however, an inventory of physical capital must be much more detailed and focused. Such an inventory should include, if applicable, the physical capital resources in a subsector that are advanced and specialized factors of production. For example, the TEPAP study indicated that identity preservation and segregation of special varieties of agricultural products is critical to implementing certain differentiated product strategies. Therefore, an inventory of physical capital resources for product-oriented agriculture should

focus on the compartmentalized product storage facilities and related hardware that exist in the subsector under consideration.

The resource inventory should concentrate on physical capital resources that meet the RBV's criteria for providing a sustainable competitive advantage, i.e., assets that are valuable, rare, inimitable, and non-substitutable. Resources that meet these criteria will likely be difficult to identify, for at least two reasons. First, physical capital resources are quite easily imitated. The second reason is that if a firm possesses a physical capital resource that is valuable, rare, etc., there is a strong possibility that they will try to keep it proprietary and decline to fully reveal it to researchers. Some possible exceptions to this general rule may be noted. For example, it may be that a firm possesses a physical capital resource that can only be used effectively in the unique agro-ecological zone where the firm is located. Alternatively, the firm may possess a physical capital resource used by a specially skilled operator in a causally ambiguous way. In both cases, the physical capital resource in question had to be combined with another special resource to provide a potentially sustainable competitive advantage. If a physical capital resource was created by the unique historical context of the firm, or is protected by patents, then it may provide at least a temporary competitive advantage.

Certain difficulties may arise in creating an inventory of physical capital resources for product-oriented agriculture. Obtaining a detailed inventory of the physical capital resources (including unique or idiosyncratic resources) belonging to all of the agricultural producers in a specified subsector may be an overly onerous task.[47] With the consolidation that has taken

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[47] The quality of the physical capital resources of downstream supply chain participants also influences the competitiveness of an agricultural subsector. These

place in agricultural production, though, such an inventory is becoming more feasible. The potato and apple subsectors in Michigan, for example, both have fewer than 200 producers, and the majority of output is produced by a much smaller number. Another potential difficulty, as mentioned above, is the proprietary nature of this information. An inventory will likely have to restrict published materials to summary statistics and conclusions. Finally, the quality of the subsector's physical capital resources should be emphasized in the resource inventory. For example, apple and dry bean growers with well-maintained, modern product-handling equipment are better able to meet customer quality requirements. Also, special computer hardware and software may facilitate communication regarding crop progress and quality to overseas customers. To get an accurate assessment of this, it may be necessary to collect a substantial amount of qualitative data. Such data may be obtained through key industry informant interviews, focus groups made up of suppliers and/or downstream participants of the relevant supply chain, observational site visits to exemplary farms in the study area and in competing regions, or some combination of these techniques.

5.2.2 Financial Capital Resources

Financial capital is "all of the different money resources that firms can use to conceive of and implement strategies." (Barney, 1996, p. 143). This subcategory of more-controllable resources includes both equity and the firm's ability to attract debt capital. Sources for equity capital include entrepreneurs, venture capitalists, individual investors, and retained earnings. Debt capital may also be obtained from different sources, including individual investors (by obtaining personal loans or by selling bonds), public or quasi-public economic development

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resources were addressed in the access to beneficial related and supporting industries section of the inventory.

organizations, and a myriad of different types of private financial intermediaries, such as banks. External sources of financial capital resources were included in Section 5.1.6, "Access to Beneficial Related and Supporting Industries" above. The financial capital resources considered here are those resources that are internal to firms currently competing in the agricultural subsector under consideration.

The sources of financial capital resources mentioned above indicate the complementarity that often exists between this type of resource and other types of resources (e.g., supporting industries such as banks and venture capitalists). To provide an assessment of financial capital resources, therefore, a resource inventory should consider both the more-controllable internal financial resources of firms in the subsector under consideration as well as the less-controllable complementary resources, such as firms in Supporting Industries, organizations in the support infrastructure, and elements of the institutional infrastructure. If firms in a given regional industry lack these resources, the competitiveness of the industry will be restricted. Further, the existence of an adequate amount of internal (more-controllable) financial capital resources is also necessary for a competitive product-oriented or commodity-oriented agricultural industry. Because financial capital resources are essential for a viable agricultural subsector in a given region, they should be included in a resource inventory for product-oriented agriculture.

5.2.3 Human Capital resources

Human capital resources make up the third subcategory of more-controllable resources. Human capital is comprised of the experience, insight, intelligence, judgement, relationships, and training of *individual* managers and workers in a firm (Becker). The supply of workers available to firms in an agricultural subsector (but not currently employed by these

firms) was covered in Section 5.1.2, "Access to a Beneficial Labor Supply," above. Thus, the human capital resources described in this part of the inventory (i.e., the more-controllable resources section) are workers and managers currently employed by firms in the agricultural subsector under consideration.

The skill level of workers and managers employed by firms determines the quality of the human capital resources in an agricultural subsector. The TEPAP study indicated that a number of skills are required to succeed in product-oriented agriculture. The particular skills required depend on the product that is produced, but innovation and experimentation are required to be competitive in many differentiated agricultural product markets. As described in Section 3.3 above, some producers of differentiated agricultural products are involved in field experiments with new varieties of agricultural products. The experimentation and innovation also often involves downstream value chain activities, such as storage, packaging and delivery. These innovations involve adaptations of the producer's operations to meet customer needs for special handling, cleaning, packaging, delivery, and so on. Thus, the capacity to develop and implement innovative systems to perform these functions is required to be competitive in product-oriented agriculture.

Standardization of products and processes has been a longstanding trend in many agricultural production industries. The increasing size of hog production facilities, for example, has led to increasing use of standard operating procedures for employees. Developments such as those that have occurred in the hog industry have to a certain extent led to routinized production activities for agricultural commodities. Routinization of production tasks facilitates cost reductions by documenting and replicating least-cost methods and by allowing the employment of lower skilled workers.

The situation is different, however, in the production of differentiated agricultural products. Because product-oriented producers aim to add value by increasing the bundle of benefits provided to customers, there is not as much pressure to reduce costs through the routinization of production activities. Further, the production of an extensive menu of products (that may change from year to year) does not provide as much payoff to routinization as is potentially available to large scale commodity production. Many TEPAP interview respondents emphasized that they strive to differentiate what they offer to buyers by providing outstanding customer service. To effectively implement such a strategy requires employees with special customer service skills (e.g., critical thinking skills and problem-solving skills). It is difficult, if not impossible, to routinize employee-customer interactions when the goal is to provide products and services tailored to the needs of individual customers. These circumstances indicate that in product-oriented agriculture, simply employing an adequate quantity of workers is not sufficient – the quality of the work force also matters.

The skills and activities described above should be considered in a resource inventory for product-oriented agriculture. More specifically, a resource inventory for product-oriented agriculture should contain an assessment of the skills and abilities of the agricultural producers and the employees currently working for firms in the subsector being studied. The ability of agricultural producers in a specific subsector to engage in these activities could be assessed by using survey research techniques to ascertain the amount and type of education and training they have completed. The amount of funds that sector firms commit to training employees should also be part of the measurement of the quality of human capital resources.

5.2.4 Marketing and Information Resources

Definitions of marketing in agriculture have traditionally focused primarily on such issues as price discovery and risk management, and secondarily on storage and transportation. In product-oriented agriculture, marketing is a much broader concept. It includes product attributes, promotion, and certain information resources (e.g., data related to demand trends and the wants and needs of specific customers) in addition to price and physical distribution. Due to the broader scope of marketing in product-oriented agriculture and the emphasis the TEPAP respondents placed on marketing skills and resources, a separate subcategory of more-controllable resources is made up of marketing and information resources.

The TEPAP empirical study of agricultural producers indicated the importance of marketing skills for owners (or managers) of firms that produce and market differentiated products. Several skills and abilities related to marketing suggested by the TEPAP respondents are listed in Table 2.5 below.

Table 2.5: Marketing Related Skills and Activities Required for Product-oriented Agriculture.

General Category	*Specific Activity*
I. Communication Skills	A. Determining customer needs (i.e., listening)
	B. Communicating the special features/benefits of products to customers and potential customers
	C. Negotiating with customers regarding compensation for special quality, features, or services
	D. Communicating a high confidence level in products and services
	E. Promoting reputation for quality and service
II. Networking Skills	A. Prospecting for customers to identify new markets
	B. Attending meetings, shows, etc., where customers and potential customers will be present
	C. Establishing and maintaining positive, long-term relationships with customers
III. Research Skills	A. Reviewing trade magazines and other secondary data sources to keep abreast of demand trends (including the needs of downstream participants in the supply chain) and new products that are becoming available
	B. Creating parameters that provide shortcuts to information
	C. Finding new markets

It should be noted that in order to effectively market differentiated products, producers must have both the *ability* and the *willingness* to perform the activities listed above. Qualitative interviews of agricultural producers and customers could provide information about the skills of the producers and their willingness to engage in these activities.

In addition to the skills listed in the table above, several other marketing resources can contribute to competitiveness in the production and marketing of differentiated agricultural

products. The major differentiated products and services produced in a given subsector are marketing resources in themselves. The resource inventory for product-oriented agriculture should consider the differentiated products produced, their respective brand capital and reputations, stages in the product life cycle, and market positions versus products produced in competitive regions. An assessment of the strength of relationships with transportation suppliers and other channel arrangements should also be included. Consideration should also be given to the potential of new products that are currently in development.

This group of resources also includes information resources. An example of an information resource would be a proprietary customer database that includes names, addresses, "demographic" information, purchase history (including product type, quality, and volume), delivery requirements, and other preference information. One of the TEPAP respondents[48] who sells seeds mentioned having such a database. His database divides customers into three groups: large cropping enterprises, intermediate sized (or "mom-and-pop") farms, and hobby farms. Based on the customer characteristics stored in the database, the system provides ideas for "suggestive selling" by the firm's sales representatives. Information about special customer needs and demand trends are especially important for product-oriented agriculture versus commodity agriculture, because this industry markets products with special features (other than lowest price) to targeted groups of customers.

Besides information about particular customers, broader marketing information is also useful to firms that produce and market differentiated agricultural products. In product-oriented agriculture, strategic opportunities may arise due to shocks in technology or

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[48] Respondent #154.

customer preferences. Future-oriented databases and scenario models that predict and track shocks may enable firms to develop action plans to take advantage of these shocks before they take place. Further, firms that are quick to perceive important shocks and to take actions that capitalize upon them may achieve a competitive advantage. And if such firms can establish a barrier so that other firms are not able to duplicate the resources upon which the strategy is based, the competitive advantage can be sustained (Wernerfelt). Even if other firms can imitate or substitute for the critical resource(s), firms with the ability to identify opportunities earlier than competitors may be able to achieve a series of temporary competitive advantages. In a sufficiently turbulent business environment, a sequence of temporary competitive advantages could be sustained indefinitely if the opportunity-detection system is effective enough. This possibility highlights the strategic potential of marketing information databases and models for product-oriented agriculture. A resource inventory for product-oriented agriculture should assess whether or not subsector participants have access to such information systems, as well as the quality and effectiveness of the applicable systems.

Only those information resources that meet the requirements of the RBV (valuable, rare, inimitable, and non-substitutable) can provide a sustainable competitive advantage to a firm. It is unlikely that publicly available information (e.g., from government or university web sites) can meet these requirements. At the same time, it is necessary for the agricultural producers in a given region to be aware of all of the potentially valuable sources of information that are publicly available if they are to achieve competitive parity with producers in other regions who are fully informed of the relevant sources of information. Due to the need to be cognizant of publicly available information resources, a resource inventory for product-oriented agriculture should include an assessment of the awareness of these resources

among the participants of the subsector being studied. An examination of how many producers in the relevant subsector have Internet access would provide input to this assessment. Of course, resource inventory items such as "Producers' Knowledge of Potentially Informative Internet Sites" could just as easily be included in the human capital resources section. The key point is that the resource inventory should contain an assessment of the information resources that are accessible to the employees and owners of the firms in the relevant subsector.

5.2.5 Organizational Capital Resources

The fifth group of more-controllable resources is called organizational capital resources. While human capital resources reside in *individual workers and managers*, organizational capital resources reside in *collections* of individuals (Barney, 1996). Organizational capital resources include the administrative framework of firms, e.g., the structure of reporting relationships, standard operating procedures (SOPs), and the like. This subcategory of resources also includes a firm's formal and informal systems for planning, controlling, and coordinating; its culture and reputation; and relationships both among groups within the firm and also between the firm and elements of its environment (Tomer). Because of their potential contribution to subsector competitiveness, organizational capital resources should be included in a resource inventory for product-oriented agriculture.

As mentioned above, many of the TEPAP interview respondents who are involved in product-oriented agriculture produce and market a diverse selection of differentiated products. This implies that firms involved in product-oriented agriculture must have the ability to preserve the identity of differentiated products and to perform logistics so that targeted customers are shipped the correct products. The case of a producer of seed grains

and other differentiated specialty grains from the TEPAP survey is illustrative. Since purity is a key aspect of product quality in these markets, extensive cleaning is required in harvesting and storage operations (e.g., vacuuming out grain drills and sweeping out grain bins). Organizational capital resources such as efficient and effective SOPs can help to ensure that these functions are performed properly. Of course, adequate mechanisms to transmit this information to employees must also be in place, and employees must follow the SOPs.

As with many of the other resources described above, the organizational capital resources of the agricultural producers in a subsector could be assessed by collecting qualitative data through survey research techniques. A mail survey of all of the producers in a subsector would be a good starting point for determining the quantity and quality of organizational capital resources available. If this method is selected, the survey instrument should include questions about the whether firms engage in strategic planning, the degree of sophistication and formality of firms' strategic planning systems, and similar questions about firms' systems for planning, controlling, and coordinating.

Issues such as culture, reputation, and relationships among firms would likely prove more difficult to assess using a mail survey due to the formidable challenge of measuring qualitative constructs. A more promising method of measuring culture, reputation, relationships, and similar forms of organizational capital would be through case study methods. One way to implement this method would be for researchers to select (and gain the cooperation of) a small number of typical agricultural production firms in a subsector. The researchers would spend approximately two weeks in field work with each selected firm, making observations and collecting data on the organizational capital resources of each firm. During this time, researchers would interview multiple stakeholders in each firm, e.g., owners,

managers, employees, suppliers, customers, and neighbors. Following the field work, data on organizational capital resources from each firm would be summarized, and data from across firms would be compared and combined to create a menu of organizational capital resources for the subsector. Finally, three to five focus groups could be implemented to verify whether this information is generalizable to other agricultural production firms in the subsector.

Two examples of organizational capital resources, relationships with customers and a reputation for quality and service, were mentioned by the TEPAP respondents who produce and market differentiated agricultural products. In compiling a resource inventory for product-oriented agriculture, it may prove difficult to distinguish between some forms of human capital resources and organizational capital resources. For example, is the reputation of a small, family owned and operated farm attributable to the owner or the organization as a whole? While the inclusion of organizational capital resources is important to complete the framework, in practice many of these resources may be recorded in other sections of the inventory. The point is that in order to have a complete and accurate inventory of resources for product-oriented agriculture, these items must be recorded *somewhere*. The particular part of the inventory where they are recorded is of secondary importance.

5.3 Implications for Agribusiness Decision-Makers

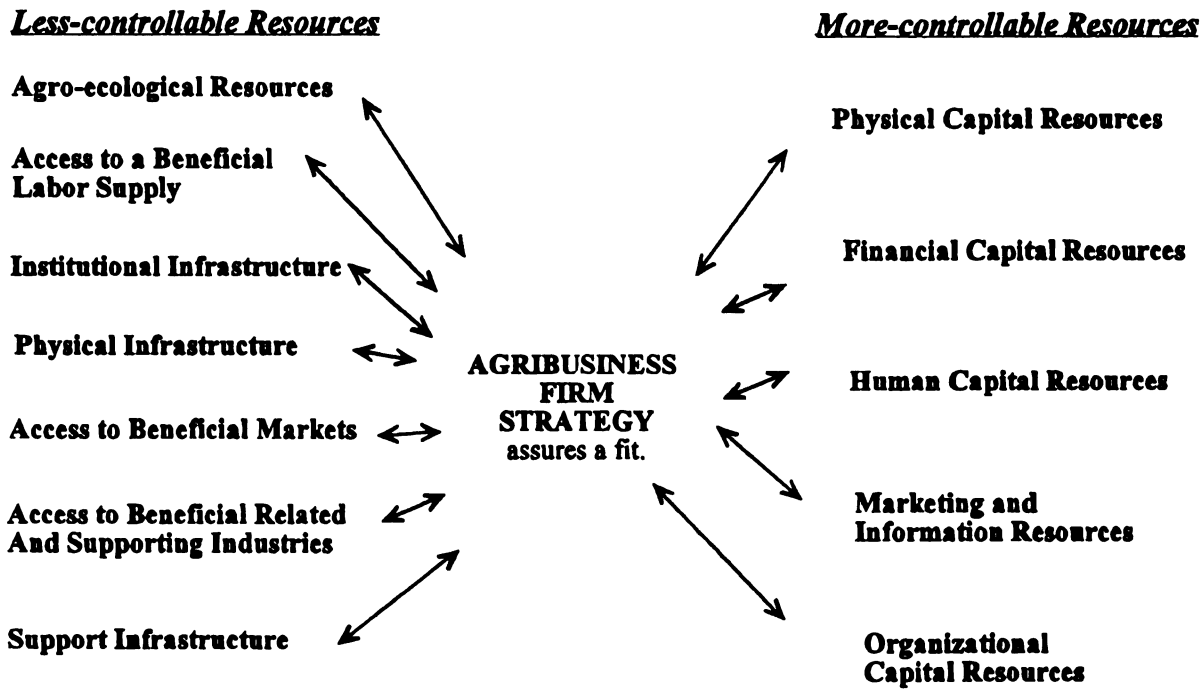
All of the resources described in Sections 5.1 and 5.2 influence the performance of agricultural production firms. To create an effective strategic plan, agribusiness decision-makers must have an accurate picture of the less-controllable and more-controllable resources relevant to their particular enterprise. Beyond merely giving a picture of the strategic position

of an agribusiness firm, the resource inventory provides a general framework for strategy formulation. Specifically, the agribusiness decision-maker's problem can be stated as follows:

> **Given the set of less-controllable resources that apply to my agribusiness firm, how can I best organize and adapt my more-controllable resources to achieve my strategic goals?**

Ideally, agribusiness firm strategy assures a fit between the less-controllable resources and the more-controllable resources (Figure 2.3).

Figure 2-3: The Relationship Between Agribusiness Firm Strategy and Resources.



A key point of the resource inventory is that resources vary with respect to the degree of control producers have over them. Further, agricultural producers should strive to *know and understand* the relevant less-controllable resources and effectively *assemble and deploy* a set of more-controllable resources to take advantage of them. While producers and producer organizations have some degree of control over resources such as the institutional infrastructure (e.g., tax and regulatory policy), they would likely be better served by taking action to upgrade their more-controllable resources. For example, producers would benefit by supporting factor-creating mechanisms, such as programs and organizations that enhance human capital resources.

This does not imply that agricultural producers and the groups that represent them should make no effort to modify the less-controllable resources, e.g., the institutional infrastructure. While it is more difficult to influence these resources than the more-controllable resources, it is not impossible. If the state under consideration has a regulatory framework that is significantly more onerous than that of a competing state, for example, it behooves growers to try to change the applicable institutions to level the playing field. Likewise, if a competing state has a law that gives growers an advantage in securing procurement contracts for state-owned food service operations, growers should take action to get a similar policy implemented in their own state. But such efforts should be limited to achieving competitive parity. Any advantages obtained through preferential institutional treatment (e.g., protectionism) are precarious because they can be lost if a new government administration eliminates the preferential treatment policy. Further, innovation and upgrading are often stifled in industries that benefit from longstanding, preferential government policies.

The proposed resource inventory requires the assessment of several constructs that are difficult to quantify. Examples of this related to human capital resources include the level of experimentation and innovativeness of agricultural producers, and the amount of problem-solving skills and customer service skills among employees. This difficulty will influence how information on certain inventory items will be gathered and evaluated. Further, it will also impact the presentation format of these items. It will be necessary to describe certain inventory items using qualitative categories, such as "highly competitive," "adequate," or "deficient." To qualitatively rate resources in this way, they must be compared to other, analogous resources, e.g., the resources of competing geographic regions or the resources of exemplary agricultural subsectors in the same geographic area.

Another issue related to operationalizing the resource inventory relates to who (or what type of organization) should undertake various inventorying activities. Ideally, an inventory of subsector resources should be accomplished by representatives of both public and private organizations. Some of the information required for the resource inventory is general in nature, in that it applies to nearly all firms in a specified geographic area and is observable (or accessible) by non-participants in the subsector. This information, which usually pertains to less-controllable resources, is best collected, analyzed, and presented by representatives of public agencies. These organizations are well suited to such functions because they have research experience and established channels for communicating findings to specified groups or the general public. In addition, if a public agency performs these functions, the potential obstacle of organizing a group to carry out the tasks (while avoiding free riding) is sidestepped. Examples of public agencies that would be prime candidates for performing these inventorying tasks include academic departments in universities, state

departments of agriculture or commerce, and county-based economic development organizations.

Other information, which generally applies to more-controllable resources, is not accessible to public agencies because of its proprietary nature. Thus, private organizations are better able to inventory the more-controllable resources. The specific private organization best suited for the task will vary depending on the subsector being studied and other considerations. These considerations include the capabilities of the various parties or organizations who could inventory the resources and who is likely to benefit from the study. It could be a commodity group, a cooperative, a partnership comprised of agricultural producers, or a consulting firm hired by one of these organizations.

The question remains of what are the essential steps in completing the resource inventory, and what is the proper sequence of activities. This information, along with who could be responsible for each activity, is summarized in Table 2.6.

Table 2.6: Implementation Steps for Resource Inventory Studies, Including Responsibility for Each Step.

Step	Activity	Primary Responsibility
1	Establish public/private study partnership.	Public Group
2	Delineate the boundaries of the study (vertically, horizontally, and product scope).	Joint
3	Create master blueprint of data needed for the inventory.	Public Group
4	Obtain pertinent secondary data sets.	Public Group
5	Identify gaps between available data and what is necessary to complete study.	Public Group
6	Assign responsibility for collecting necessary data.	Joint
7	Develop and implement survey research instruments, as needed.	Both groups, as indicated in Step 6
8	Analyze data and generate report(s).	Joint
9	Extract strategic implications from study, make necessary adjustments to strategic plan, and implement specific action plans.	Private Group

The time required to complete a resource inventory will vary depending on the subsector selected,[49] the number of personnel involved, and the related experience of the groups. Due to the learning curve effect and the departure from traditional agricultural resource inventories, the cost for the initial studies for each group may be substantial. It is beyond the scope of this essay to develop a full cost budget for the exercise; however, such a budget and funding sources would be critical to ultimate implementation.

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[49] E.g., a resource inventory for chipping potatoes would require less time to complete than a resource inventory for all vegetables would.

On the other hand, significant benefits may result from a resource inventory study. One important benefit is the identification of new, high-value, specialized markets for the agricultural products produced in the subsector. Additionally, opportunities may be perceived for adding value locally through producing products with special features, processing products, or performing customer service activities. If subsector participants successfully capitalize on such opportunities, firms in the area may earn increased profits, local jobs may be added, and the tax base enhanced. In general terms, performing a resource inventory study has the potential of improving the efficiency and effectiveness of resource allocation. Even if firms in the relevant subsector do not immediately change their strategies based on the study's results, they still may benefit in the long run. Specifically, the private group employees who engage in study activities and other subsector participants who are involved may significantly improve their business strategy skills. Incremental skill development may lead to better strategy formulation and implementation in the long run, which will lead to similar benefits. The type and quantity of benefits will also certainly vary depending on the competitive potential of the subsector under consideration. To maximize the potential for benefits, care should be taken to select a subsector whose products can be marketed to customers with high-value uses, and that have shown supply growth locally and demand growth nationally (or globally). It should also be noted that studies based on the new resource inventory should be consistent with the recommendations from the literature on industry strategic planning. (See, for example, Woods, Lyford, and Ricks.)

6. Summary, Conclusions, and Areas for Future Research

The transformation of agriculture from the production of standard commodities to the production of products with special features or attributes, intended for specific end uses, has been well documented. This change has had a significant impact on agricultural producers. In particular, a new set of resources and skills are required to effectively compete in differentiated agricultural product markets. The resources and skills necessary to succeed in product-oriented agriculture are to a certain degree similar to those necessary to succeed in non-agricultural manufacturing. Theories from the general management literature such as Porter's Diamond Model and the Resource-Based View of the Firm (RBV) are thus quite relevant to strategic analysis and strategy formulation for firms that produce and market differentiated agricultural products.

Three prior efforts to inventory agricultural resources were reviewed in some detail in this essay. Based on management theory (i.e., Porter's Diamond Model and the RBV) and an empirical study of agricultural producers who are involved in product-oriented agriculture, these prior efforts were shown to have limited usefulness to decision makers in differentiated agricultural product industries. A new resource-inventorying process was introduced, founded upon these two management theories and the empirical study featured in the first essay of this dissertation. This new resource-inventorying process was specifically designed to be useful to decision makers in product-oriented agriculture.

The primary conclusion of this essay is that the resource inventory for product-oriented agriculture introduced in Section 5 should be used to provide strategic information in certain circumstances. In particular, if a preliminary analysis indicates that agribusinesses

in a given region could benefit by pursuing opportunities in product-oriented agriculture, then compiling the information in the resource inventory introduced is warranted.

A secondary conclusion is that the U.S. Census of Agriculture should be modified to include the less-controllable resources described in Section 5, if it is intended to provide information that is relevant and useful for strategy formulation in differentiated agricultural product markets. This would be a significant change and would involve additional and more complex methods of data collecting. In order to be workable, changes to the census would probably have to be incremental, with a long-term goal of including as much of the less-controllable resource information as reasonably possible. This conclusion also applies to state level efforts to inventory agricultural resources. Such efforts include projects undertaken by land grant universities and projects done by state agencies. If these efforts are to contribute to effective decision making by product-oriented agricultural firms, steps should be taken to gather and present the information described in Section 5, (i.e., the resource inventory for product-oriented agriculture). State level projects will be most effective if they are undertaken by a team of public researchers and analysts from a private organization, as outlined in Table 2.6.

The description of the resource inventory for product-oriented agriculture above omits many of the specific details (e.g., data collection methods and presentation format) for implementing it. Prior to doing any large scale national (or multi-sectoral regional) agricultural resource-inventorying studies, a small number of pilot projects should be undertaken. An agricultural subsector in a specified state could be selected for applying the proposed resource inventory. A possible candidate for a study is the pickling cucumber subsector in Michigan. Pilot projects would test the resource inventory for product-oriented

agriculture for workability and completeness. Follow up evaluation studies would provide feedback on the usefulness of the information presented and suggestions for additional information.

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APPENDIX B

Table B.1: Detailed/Itemized Summary of the Contents of Three Inventories of Agricultural Resources.

Legend: C of A = 1997 Census of Agriculture, SAPMA = Status and Potential of Michigan Agriculture, FIRST = Florida FIRST, Y = Yes (i.e., Includes This Information), N = No (i.e., Does Not Include This Information), P = Partial Data.

Information	*C of A*	*SAPMA*	*FIRST*
A. Agricultural Inputs			
1. Land in Farms (historical)	Y	Y	Y
2. Size of Farms (percentage & no.; cross-tabulated by various other indicators; historical)	Y	P	P
3. Value of Land and Buildings (percentage of farms and historical)	Y	P	N
4. Production Expenses (no. of farms, by expense component, historical)	Y	P	N
5. Market Value of Machinery and Equipment (historical)	Y	Y	N
6. Irrigated Land (historical)	Y	P	N
7. Total Farm Expenses (historical)	Y	Y	N
8. Commodity Credit Corporation Loans	Y	N	N
9. Irrigation (no. of farms, acres)	Y	N	N
10. Agricultural Chemicals Used, Including Fertilizer (no. of farms, acres)	Y	P	P
11. Land in Orchards	Y	Y	N
12. Agricultural Technology Trends and Outlook	N	Y	Y
13. Overview of Pesticide Issues, Supply, and Demand	N	Y	Y
14. Farm Debt and Interest Costs (historical)	N	Y	N
15. Overview and Projections of Issues Affecting Debt Levels and Interest Costs for Farms	N	Y	N

Table B.1 (cont'd)

16. Review of Current Situation for Agricultural Input Industries	N	Y	Y
B. Agricultural Outputs			
1. Market Value of Agricultural Products Sold (historical)	Y	Y	Y
2. Value of Crops Sold	Y	Y	Y
3. Value of Livestock, Poultry, and Their Products Sold	Y	Y	Y
4. Market Value of Agricultural Products Sold (cross-tabulated by various other indicators; percentage of farms; historical)	Y	P	P
5. Crops Harvested	Y	Y	Y
6. Value of Livestock, Poultry, and Their Products Sold (by type of animal)	Y	Y	Y
7. Livestock and Poultry Inventories and Sales (no. of animals, historical)	Y	Y	Y
8. Selected Crop, Fruit, and Nut Inventories and Sales (no. of farms, acres, bushels, historical)	Y	Y	Y
9. Value of Agricultural Products Sold Directly to Individuals for Human Consumption (no. of farms and total value, historical)	Y	N	N
10. Fish Sales	Y	N	N
11. Fruits and Nuts (farms, acres, vines or trees)	Y	Y	Y
12. Berries Harvested for Sale (farms, acres, irrigated, quantity)	Y	N	Y
13. Nursery and Greenhouse Crops, Cut Christmas Trees Harvested, Mushrooms, and Sod Grown for Sale (farms, sq. ft. under glass, open acres, sales)	Y	Y	Y
14. Yields for Field Crops, Fruits, and Vegetables (historical)	N	Y	P
15. Volume of Selected Varieties Produced (Apples and Christmas Trees)	N	Y	N

Table B.1 (cont'd)

16. Production and Consumption Volume of Major Farm Commodities	N	Y	P
17. Processed Fruits and Vegetables (Tonnage and Value)	N	Y	P
18. Value of Exports of Agricultural Products (historical)	N	Y	N
19. Percent Changes in Production of Crops and Livestock	N	Y	N
20. Aquaculture Status and Trends	N	Y	Y
C. Demographic Information Regarding Farms and Farmers			
1. Type of Organization (percentage of farms; cross-tabulated by various other indicators; historical)	Y	N	N
2. Tenure (percentage of farms; cross-tabulated by various other indicators; historical)	Y	N	N
3. Percentage of Operators, by Days Worked Off Farm	Y	N	N
4. Principal Occupation (cross-tabulated by various other indicators; historical)	Y	P	P
5. Percentage of Farms and of Market Value of Agricultural Products Sold	Y	Y	N
6. Farms by Market Value of Agricultural Products Sold: Historical	Y	N	N
7. Operators by Days Worked Off Farm (historical)	Y	N	N
8. Age of Operator (cross-tabulated by various other indicators; historical)	Y	N	N
9. Selected Characteristics of Irrigated and Nonirrigated Farms	Y	N	N
10. Selected Machinery and Equipment on Place (no. of farms, no. of each type, age of each type)	Y	N	N
11. Tenure and Characteristics of Operator and Type of Organization for All Farms and Farms Operated by Black and Other Races	Y	N	N

Table B.1 (cont'd)

12. Selected Characteristics of Farms by Specified Racial Groups, Sex of Operators, and Persons of Spanish, Hispanic, or Latino Origin	Y	N	N
13. Selected Characteristics of Farms by North American Industry Classification System (cross-tabulated by various other indicators)	Y	N	N
14. Selected Characteristics of Reservations and Abnormal Farms	Y	N	N
15. Farms by Concentration of Market Value of Agricultural Products Sold	Y	Y	P
16. Farms With Grazing Permits	Y	N	N
17. Overview of Part Time Farming	N	Y	N
D. Prices and Returns Related to Farming			
1. Net Cash Return from Agricultural Sales	Y	Y	N
2. Government Payments and Other Farm-Related Income	Y	Y	N
3. Prices for Animals and Their Products	N	Y	P
4. Prices for Field Crops and Fruits (historical)	N	Y	P
5. Input Prices (for competing regions)	N	Y	N
6. Gross Returns, Production Costs, and Net Profits for Selected Crops (for competing states)	N	Y	N
7. Farm Prices on Field Crops, Livestock, Livestock Products, Fruits, Fresh and Processing Vegetables (for selected states)	N	Y	N
8. Input Prices/Costs for Selected Agricultural Commodities	N	Y	N
9. Financial Outlook Projections for U.S. Farms	N	Y	N
E. Environmental Information			
1. Land Use (Cropland, Pasture, etc., historical)	Y	Y	Y
2. Summary and Projections of Environmental Trends and Their Impact on Agriculture	N	Y	Y

Table B.1 (cont'd)

3. Overview of Natural Resources (Climate, Land/Soil, Water, Topography)	N	Y	Y
4. Summary of Natural Resource Issues Affecting Agriculture	N	Y	Y
5. Land Use Overview and Trends	N	P	Y
6. Air Quality Overview and Trends	N	N	Y
7. Forests, Natural Systems, and Wildlife Overview and Trends	N	N	Y
F. Consumer/Market Information and Projections			
1. Food Processing Industries: Value-Added and Value of Shipments (U.S. and State)	N	Y	Y
2. Overview of Trends in Technology and Management, and Other Issues in Food Processing Industries	N	Y	Y
3. Population (historical)	N	Y	Y
4. Description of the Consumer Purchasing Process and Review of Major Directions of Change Impacting Food Marketing and Distribution	N	Y	Y
5. Population Projections	N	P	Y
6. Consumer Expenditure Situation and Trends	N	N	Y
G. Labor Force Information and Community Demographics			
1. Hired Farm Labor: Workers and Payroll	Y	P	P
2. Employment in Food Processing	N	Y	N
3. Agricultural Labor Force Projections	N	Y	P
4. Overview of Population Changes, Employment Trends, and Issues Affecting Local Governments in Rural Areas	N	Y	P
5. Overview of Trends Affecting the Status and Composition of Families	N	N	Y
6. Overview of Labor Force Trends and Determinants of Change	N	P	Y

Table B.1 (cont'd)

7. Size of Agricultural Labor Force and Wage Rates (historical)	N	N	Y
H. Supply/Demand Projections			
1. Projections of Per Capita U.S. Food and Fiber Consumption	N	Y	N
2. Trends and Projections of Commodity Production (selected crops and animals)	N	Y	Y
3. Value of Consumption of Food and Beverages	N	Y	N
4. Shift-Share Analysis for Major Crops and Livestock Commodities	N	Y	N
5. National Demand and Supply Projections for Major Crop- and Animal Commodities	N	Y	N
I. Information, Trends, and Projections Related to Other Factors That Influence Agriculture			
1. Projections of Federal Agricultural Policy	N	Y	Y
2. Trends and Issues Facing Major Commodity Industries	N	Y	Y
3. Dollar Contribution of Agriculture, Food, and Forestry to the Economy	N	Y	Y
4. Overview of Factors Affecting Comparative Advantage in Agricultural Production	N	Y	N
5. Review of Funding Sources for Agricultural Experiment Station and Cooperative Extension Service	N	Y	N
6. Overview of Post-Secondary Academic Programs in Agriculture	N	N	Y

ESSAY III:

SCENIC STATE ORGANIC GROWERS–GRAND VALLEY CHAPTER: A DECISION CASE

1. Introduction and Methodology

In agricultural economics, case study research is becoming an important approach to collecting data, and to building and applying theory. Case study research is "capable of generating a robust, comprehensive array of 'knowledge' about complex, highly interdependent and dynamic economic and social phenomena." (Sterns, et al. p. 311) According to Peterson (1997), the subfield of agribusiness management does not have a large body of well developed theory. Because one of the strengths of case study research is in theory-building, this method is especially suitable for agribusiness management research. Case research can lead to generalizations, insights, heuristics, and to the discovery of relationships not indicated by theory (Howard).

This essay features a case study of a group of agricultural producers who face a strategic decision.[50] These producers obtained a USDA Rural Business Enterprise Grant to study the feasibility of establishing an organic marketing cooperative. They approached the Michigan State University Department of Agricultural Economics for assistance on this project. Data for this study were obtained from three sources. The first source was secondary data collected through a review of relevant trade and academic journals. Further, more than a dozen directed interviews were conducted with key informants from industry, universities, and government. These were mostly telephone interviews, although some took

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[50] This section draws upon Phillips and Peterson (2001).

place at the Natural Products Expo–East in Baltimore, Maryland during October, 2000. Third, face-to-face, structured interviews were conducted with seven members of the grower group. These interviews were designed to obtain data about the resources and skills of the growers. By collecting data from multiple sources, triangulation was achieved. Proper handling of triangulation is one way to assure reliability, i.e., data integrity (Peterson, 1997).

Besides facilitating the solution of a specific strategic problem, this case study research project had two additional goals. One of these goals is to provide an up-to-date presentation of conditions facing the organic vegetable industry. These conditions (including the demand growth rate, target markets, and distribution channels) are presented in the second part of this essay, "The Case." This material should provide a useful overview of the organic industry for those who have not had a great deal of exposure to it. The second goal is to create an opportunity for applying the new resource inventory for product-oriented agriculture, which was introduced in the preceding essay. Such an application allows for verifying the workability of the theory. The resource inventory is applied in the third part of this essay, which is the "Framework Application and Teaching Note."

In order to maintain the confidentiality of the data related to the growers' operations, the case was modified to conceal their identities. The economic, institutional, and demographic information, however, is drawn from an actual state, and two actual counties in particular. Information was modified only to the extent necessary to conceal the identity of the subjects involved in this research.

2. The Case

2.1 Background of the Project

On a cold and snowy January evening, Jerry Elliot felt somewhat uneasy as he drove to the monthly meeting of the Scenic State Organic Growers–Grand Valley Chapter. The Scenic State Organic Growers is a nonprofit organization made up of more than 150 organic farmers and gardeners from throughout the state. Due to the geographic dispersion of the members of the Scenic State Organic Growers, the members agreed to form seven chapters. Membership in these chapters is determined by geography, and each chapter has members from a defined region of the state. Jerry is the president of the Grand Valley Chapter, and has held this position for over two years. The Grand Valley Chapter is comprised of growers from the central part of the state. The chapter got its name from the major geographic feature of the region, the valley surrounding Grand Lake.

The January meeting of the Grand Valley Chapter would be an important turning point in a project Jerry had been working on for more than six months. This project involved the formation of a marketing cooperative. Jerry had been investigating the feasibility of a cooperative to market the organic produce of the members of the Chapter. While he was uncertain about the outcome of the meeting, Jerry was sure of one thing: his pride in being an organic farmer.

There were a number of factors related to organic farming methods and organic food that made Jerry and many of the other members of the Scenic State Organic Growers proud. Organic farming requires working with natural systems, rather than trying to control them (Klonsky and Tourte). Methods used by organic growers involve harmonizing with nature (Gilroy, et al.). Organic food is verified by an independent, third-party certification program.

This certification attests that, first, the food was produced in accordance with a nationally approved list of materials and practices, and, second, only approved material have been used on the land and crops for at least three years before harvest. The organic certification process involves the verification of a comprehensive and accurate record of the production and handling system.[51] And, of course, organic food meets all local, state, and federal rules pertaining to the safety and quality of the food supply (Hall and Edwards).

At the meeting, Jerry planned to lay out a number of strategic alternatives from which the Grand Valley Chapter could choose. Prior to describing these alternatives, material related to the decision would be presented. The first information would be a broad view of the demand for organic produce and an examination of local and regional demand. The resources and skills of the group of growers involved with the project would also be presented. Finally, different possible future directions for the group would be laid out.

2.2 Broad View of the Demand for Organic Produce

The word "organic" has emerged in the marketplace to differentiate agricultural products based on production methods (Klonsky and Tourte). The key point is that "organic" has positive brand capital in the collective consciousness of consumers. Many consumers assume that food products labeled organic are safer, more healthful, and more wholesome than other products.

In the year ending May, 2001, U.S. consumers bought $7.7 billion worth of organic products (Pollan). By all accounts, the demand for organic food continues to grow rapidly. Although organic products made up less than 5% of the total retail market, organic sales grew

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[51] More detailed information regarding the requirements of organic certification is given in Section 2.3, "Local and Regional Demand Conditions."

at greater than 20% per year for the prior nine years (White). This growth clearly outshines the rest of the grocery industry which has recently experienced growth of 3% to 5% annually. The Organic Trade Association (2000a) cited the following statistics from a 1995 Food Marketing Institute report:

- Percentage of mainstream stores carrying organic produce: ***42 percent***

- Percentage of shoppers who buy natural or organic foods at least once a week from supermarkets: ***25 percent***

- Percentage of retail senior management who believe that organic and natural foods are an upcoming trend: ***75 percent***

Fresh produce is currently the largest segment of the organic market. Organic produce sales at natural and mainstream supermarkets had topped $670 million per year (Glaser and Thompson). Among the more than 5,000 U.S. farmers that were using organic methods in 1995, the majority were producing fruits and vegetables (Organic Trade Association, 2000a). However, the variety of organic foods available at retail in the U.S. had expanded to include baby food, meat, dairy, and prepared/convenience foods (Thompson). While in the past organic food was distributed primarily in co-ops and natural food stores, sales in mainstream supermarkets continued to increase (Janoff).

Organic foods were also popular in food-service distribution channels. According to the Organic Trade Association (2000b), organic items were offered by about 57% of

restaurants with per-person dinner checks of $25 or more, and by about 29% of restaurants with prices in the $15 to $25 range.[52] Chefs can be a substantial influence on the perceptions and preferences of consumers. The Organic Trade Association (2000b) reported that 76% of chefs actively seek out organically grown ingredients.[53] Penetration of organic food into the food-service industry was critical for the organic industry because U.S. consumers were spending an increasing share of their food budgets on meals eaten away from home.

In 1999, the Hartman Group, a marketing consulting firm, was commissioned to study the organic food market from a consumer perspective. The study (Hartman Group, 2000) noted that 29% of the U.S. population were light organic buyers and 3% were heavy organic buyers.[54] Further, vegetables were the most frequently purchased product group (70% of buyers had purchased in the past three months), followed by fruit (68%) and cereal/grains (61%). Figure 3.1 shows where organic users were buying organic products.

As indicated above, about one-third of the U.S. population purchased organic products.[55] The average number of organic products purchased by this group was 12 products in a three-month period. One-third of *that* segment purchased more than 12 organic products in a three-month period. These consumers (who made up about one-ninth of the

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[52] It is unclear into which category a restaurant with an average check of *exactly* $25 would fall. At any rate, this was how the Organic Trade Association reported this information.

[53] Citing *Food & Wine* magazine's 1997 survey of chefs.

[54] Heavy organic buyers were those respondents who said that "**Many** of the food products I buy are organic." Light organic buyers were those respondents who said that "**Some** of the food products I buy are organic."

[55] That is, the 29% of the population who are heavy organic users, plus the 3% of the population who are light users.

U.S. population) were labeled "multi-product users" of organic food products in the Hartman study. The report mapped this group of multi-product users into market segments. The market segments were established by dividing the multi-product users (from a large survey of U.S. consumers) into clusters using statistical methods. The groups of consumers with similar purchase patterns, the percentage of all the multi-product users in each group, and the defining characteristics of each group are listed in Table 3.1. It should be noted that not every member of these groups exhibits all of the characteristics listed for his/her particular group. Rather, the characteristics listed are more predominant among members of that group than among the general U.S. population.

Figure 3.1: Organic Sales Channels

(Source: Hartman)

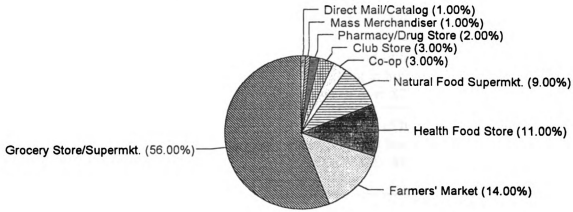


Table 3.1: Defining Characteristics of the Clusters of Multi-Product Users of Organic Food Products (Source: Hartman).

Market Segment	% of Multi-product Users	Defining Characteristics (i.e., "more likely to be . . .")
1. Pacific Produce Pickers[56]	35%	Family head of household 40-49 years old, living in household of two, income range of over $75,000, Pacific residents
2. Specialty Foodies	29%	Family head of household 40-49 years old, living in household of two, income range of $30,000 - $49,000, Pacific residents
3. Miss American Pie	20%	Single females ages 35 and up, living in households of one, income range of under $30,000, South Atlantic residents
4. Topper Shoppers	16%	Family head of household 40-49 years old, living in household of two, income range of under $30,000, South Atlantic residents

The signature products for each segment are listed in Table 3.2. These signature products are listed in rank order of the products that distinguish the cluster from typical organic buyers. For example, Table 3.2 indicates that the "Pacific Produce Pickers" are more likely than the general population of organic buyers to purchase fresh oranges.

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[56] The names of the market segments are from the Hartman report. They were not created by the author of this essay.

Table 3.2: Signature Products of Multi-Product Users of Organic Food Products (Source: Hartman).

Pacific Produce Pickers	Specialty Foodies	Miss American Pie	Topper Shoppers
Fresh oranges	Soy milk	Catsup	Catsup
Fresh grapes	Soy (tofu, tempeh)	Milk	Mustard
Fresh apples	Vegetable patty	Mustard	Soup - canned
Fresh strawberries	Green tea	Mayonnaise	Cooking oil
Fresh broccoli	Other herbal/medicinal tea	Ice cream	Salad dressing
Fresh lettuce	Organic dietary supplements	Cheese	Ice cream
Fresh bananas	Rice milk	Butter	Tomato sauce
Other fresh fruit	Grains (bulk)	Beef	Mayonnaise
Fresh carrots	Honey	Cooking oil	BBQ sauce
Fresh spinach	Nuts (bulk)	Salad dressing	Butter
Fresh potatoes	Culinary herbs	Sugar	Pasta sauce
Other fresh vegetables	Rice cakes	BBQ sauce	Cheese
Coffee beans	Grains (packaged)	Chicken	Milk
Nuts (bulk)	Organic soda/pop	Pizza	Frozen vegetables
Green tea	Ethnic meals	Canned fruit	Sugar

Additional characterization of these clusters is in order. The Pacific Produce Pickers got their name from the products they predominantly purchase: fresh fruits and vegetables.

These consumers mainly lived in the Pacific region, and they were the highest income group of all the clusters. The Specialty Foodies were named after their use of products outside of the mainstream shopping experience (e.g., soy milk and tofu). The natural product consumers in this cluster were quite typical in characteristics such as age, household size, and income level. The third cluster was named Miss American Pie due to their purchases of products that typify the American experience (e.g., catsup, mustard, and ice cream) and the demographics of its members. This group tended to have low income and education levels. In addition, members of this group were typically single females. The demographic profile of the Topper Shoppers closely matched that of Miss American Pie. The Topper Shoppers got their name because their signature products were almost entirely condiments or sauces, i.e., toppers. This cluster also purchased, on average, a much greater quantity of organic products than the other groups purchased.

The Hartman Group predicted adoption of organic food products by diverse consumers, and consistent growth in the category. They also mentioned that key purchase criteria (i.e., taste, price, and quality) for organic foods had become quite similar to those of conventional products. Finally, they concluded that brand strategies had not been successful in the organic food category, because most organic purchasers in their sample did not relate brands to organic food products.

It should be noted that consumer demand for organic food was not strictly an American phenomenon. The approximate retail value[57] of organic markets in three major

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[57] All references to monetary units in this paragraph are stated in U.S. dollars.

countries was as follows: France ($508 million), Japan ($500 million[58]), and the U.K. ($445 million) (Lohr). Trends and events in Western Europe were sometimes viewed as harbingers of what would occur in the U.S. It was significant, therefore, that demand for organic products in the U.K. had been growing at a rate of 40% per year. The organic market in Europe tripled in size during the 1990s, amounting to $5.2 billion in 1999 (Janoff). The British food retailer Iceland was a prime example of a business committed to organic food sales. Iceland recently invested $13.2 million to secure 40% of the world's organic vegetable supply and introduced a private label line of organic produce. A major German food retailer recently announced that 10% of sales chainwide would be organic by 2003 (Janoff). These trends indicated that there would be ample exporting opportunities for U.S. organic producers in the future.

2.3 Local and Regional Demand Conditions

In seeking out markets for agricultural products, it is often a good idea to start locally. If customers can be obtained locally, then transportation costs and time-in-transit can be minimized. Minimizing time in transit is especially important with fresh produce, due to its limited shelf life. A map of the central part of the Scenic State, which was the local area for the grower group, is presented in Figure 3.2. As shown in the figure, the Grand Valley vicinity was comprised of two counties, Olsen and Glasgow Counties. Demographic information about these two counties is given in Table 3.3.

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[58] Fresh produce sales only.

Figure 3.2: Map of the Central Part of the Scenic State (i.e., the Grand Valley)

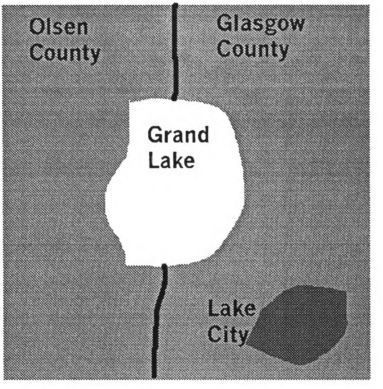


Table 3.3: Demographic Information for Olsen and Glasgow Counties.

	Olsen County	Glasgow County
Population, 2000	105,665	137,985
Percentage Increase in Population, 1990 - 2000	16.7%	1.5%
Average Unemployment Rate, 2000	3.0%	4.3%
Median Household Incomes, 1995	$39,854	$36,124
Poverty Rate, 1995	8.8%	14.1%
Percentage of Population (age 25 and Older) with a Bachelor's Degree or Higher, 1990	12.0%	13.8%

The two adjoining counties differed in a number of significant ways. Olsen County had stronger rural heritage and lacked any predominant cities. In recent decades, however, Olsen County had grown substantially in population, adding more than 39,000 residents since 1970. Many of its communities had taken on a suburban appearance and quality. This was the result of the development of numerous upper middle-class subdivisions. Homes in these subdivisions typically were purchased by individuals who worked in nearby cities in other counties. Many of the towns in Olsen County could be described as "bedroom communities" for medium-sized cities in adjoining counties.

Glasgow County, on the other hand, was anchored by Lake City, a city with 56,000 residents. Lake City was one of the historic "core" cities of the Scenic State. Its economy lagged during the 1970s and 1980s, when many of the manufacturing operations located there

closed.[59] During this period, Lake City and Glasgow County encountered serious social problems, such as poverty, unemployment, drug abuse, and teen pregnancy. After 1992, however, the local economy staged a comeback. Many jobs were added in the service sector, and the unemployment rate declined to match that of the Scenic State as a whole. (The unemployment rate in the Scenic State was at its lowest level in decades, and had been within 1% of the rate for the entire U.S. for the past three years.)

The central part of the Scenic State (i.e., the greater Grand Valley area) was a reasonably well-populated area. More than 3 million people lived within 150 miles of Olsen and Glasgow Counties. This population was mostly urban and suburban, with a broad distribution of incomes and ages. A substantial portion of the people in the area were concerned about food safety, health and nutrition, and the environment. At the same time, consumers in the Scenic State were definitely less progressive than their counterparts on the west coast and in Northeastern United States. There was a strong union presence and tradition in the Scenic State. This contributed to a preference of many consumers in the Scenic State to buy local.

There were several different methods, or distribution channels, that could be used to market organic vegetables, and each had pros and cons to be considered by the grower group. Selling directly to consumers through farm markets, that is through roadside stands, was a marketing method commonly used in the Scenic State. It would be easier and quicker for the Grand Valley Chapter growers to take advantage of this marketing channel, than to market

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[59] The number of manufacturing jobs in Glasgow County declined from 22,000 in 1979 to less than 15,000 in 1983. Since that time, the manufacturing economy had recovered somewhat, but by 1999 the county still only had about 18,000 manufacturing jobs.

through a distributor or retailers.[60] Due to the proximity of the farm market sales area to the farming operation, transportation would be minimized. Likewise, less commuting and transporting time would be required than for other alternatives. Marketing on site would provide the best alternative for the family members of the Grand Valley Chapter growers to get involved. The growers would receive the full consumer price of the products sold. Further, the growers could meet customers personally. This would provide an opportunity for consumer education into topics such as how the crops were grown and how to prepare the produce. The growers could also use the opportunity to build their collective reputation as producers of high quality produce and as a stewards of the environment. They could also obtain feedback on product quality and selection.

With farm markets, the Grand Valley Chapter growers would have control over product marketing. For example, the growers would control the presentation of products. Products could be marketed as "organic" or "transitional,"[61] and the display could be made visually appealing. Finally, the growers would have control over the days and hours of operation of the farm market.[62]

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60 The material regarding the positive aspects and barriers/potential pitfalls of different distribution channels is largely drawn from Phillips and Peterson (2001).

61 Products marketed as "transitional" are those that have been raised organically, but are not certified organic because the land on which they were grown has not been free of synthetic agricultural chemicals for three years. In other words, a grower who decides to switch to organic production generally markets his products as "transitional" for the first three years. After this transitional time, if everything goes as planned, he becomes certified and can market his products as "organic."

62 An implicit tradeoff should be noted. The longer the hours of operation, the more time-consuming it is for the person running the farm market. Revenues, however, would be roughly proportional to the length of the hours of operation. It would be easier to build up customer loyalty and repeat business if customers were confident

Probably the most important limitation of marketing through a farm market would be that success depends, in large measure, on the quantity/quality of the traffic in front of the grower's farm.[63] More generally, a farm market would provide the opportunity to sell from one location. Dealing with distributors or retailers, on the other hand, would provide access to multiple sales outlets. Some farm market operators in the Scenic State limited their selection to produce grown on site. This lessened the appeal of these farm markets compared to other retail locations with a broader selection of fresh produce. This barrier could be overcome if the Grand Valley Chapter growers would establish a sharing arrangement that would allow them to sell produce grown on different farms.

Establishing and operating a farm market would not be without costs. Investment in fixtures such as tables and a canopy would likely be required. Further, if the grower group would operate the farm market with a person constantly present at the sales booth, an expense (either wages to a paid sales clerk or the opportunity cost of an unpaid family member's time) would be incurred. Problems could arise with zoning regulations. Finally, the neighbors of the grower where the farm market is located could be disturbed with the activity involved, such as customers pulling onto and off from the road.

There were also a number of farmers' markets in the Grand Valley and nearby areas. Some of these markets operated year-round, but most of them were seasonal. The seasonal markets typically ran from June through October. Organic producers who sold at farmers'

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that when they visit the market they would find it open and stocked with whatever they expect to find.

63 In a related way, direct-to-consumer enterprises tend to be more successful in well populated areas, where there is not a lot of competition (Ricks).

markets in the more affluent communities received a substantial premium for their fresh produce, with prices sometimes as much as 75% higher than for conventional produce in supermarkets.

The most important advantage of selling at a farmers' market compared to an on-site farm market would be the built-in traffic. The farmers' markets in the Grand Valley and surrounding areas were generally frequented by a satisfactory quantity of customers. Further, the customers at farmers' markets tend to be more desirous of locally-grown produce than typical retail produce shoppers are. In other words, customers at area farmers' markets would be pre-sold on the products offered by Grand Valley Chapter growers. Further, customers at farmers' markets would buy produce that would not be acceptable to some distributors/retailers (e.g., produce outside of size tolerances).

This marketing channel would be substantially easier for the Grand Valley Chapter growers to enter, compared to selling to distributors or retailers. The benefits arising from consumer contact listed previously for farm markets would also apply to farmers' markets. With this marketing alternative, there would be an opportunity for members of the grower group to pool their investment (e.g., for booth rent and fixtures), products, and sales efforts together.

Incremental costs would arise from transporting products to the farmers' market. Time, fuel, and vehicle wear and tear would all have to be accounted for. In addition, farmers' markets in the Grand Valley area had limited days and hours. If the growers wanted to sell at farmers' markets on multiple days per week, they would probably have to sell at more than one market. In doing this, the growers would be required to travel long distances and to incur substantial transportation costs. The Grand Valley Chapter growers would have

to pay for space at farmers markets. This implies that higher overhead would be required than for the farm market alternative. If the growers elected to sell at farmers' markets, associated transportation and overhead costs would have to be deducted from the sales revenue received. This would, in turn, limit the amount available to cover production costs and provide a profit. With respect to pricing, farmers' markets would be more competitive than farm markets, because consumers could comparison shop.

The Scenic State had a well developed distribution system for fruits and vegetables. This included a significant number of contract brokers, packers, and shippers. Among these distributors, however, only one was certified to distribute organic produce. At the time of the case, none of the Grand Valley Chapter growers were doing business with a distributor. Further, because of the distance to out-of-state distributors, it would not be economically feasible for them to do business with any distributor that was based outside of the Scenic State. The only certified organic distributor in the Scenic State, Veryfine Produce, was located 40 miles north of Lake City. This firm had a policy that set a minimum volume of produce that growers had to supply in order to qualify as a supplier. There were probably only two members of the Grand Valley Chapter who had sufficient individual volume to meet this requirement. Veryfine (who, by the way, handled organic produce from the local region and California, as well as conventional produce) had positive relationships and a favorable reputation among retail and food service buyers in the Scenic State.

First and foremost, selling through Veryfine would provide the opportunity for the Grand Valley Chapter growers to market a much higher volume than would be possible through farm markets or farmers' markets. With this marketing alternative, the distributor would take over some of the essential marketing functions, such as selling to retailers and

making deliveries. Marketing through Veryfine would save the growers from having to spend a lot of time communicating with several direct business customers (e.g., retailers and restaurants). Veryfine also contributed a number of resources and skills to its supply chain. Some of the more important resources were distribution and logistical experience, and a reputation for service. Veryfine's network of retail, food service, and institutional buyers could also be a valuable contribution, if the Grand Valley Chapter growers would choose to establish a distribution arrangement with this distributor.

Like other distributors, Veryfine had their own needs in addition to what was required by the consumer. Examples of these needs included uniform product size, packaging, and labeling. For the Grand Valley Chapter growers, meeting the specific needs/requirements of this distributor would involve overcoming major barriers. (The most significant of these barriers would be the minimum volume requirement, mentioned previously.) It could be possible that the Grand Valley Chapter growers could "combine forces" to overcome these barriers. They could work together to assure that every grower would be aware of the quality requirements and the best methods to meet them. They could also pool their produce and supply it to Veryfine as one lot. This way, from the distributor's viewpoint it would be like dealing with one larger grower.

Veryfine already had a group of conventional and organic growers whose products they handled. If the Grand Valley Chapter growers wanted to break into Veryfine's distribution pattern, they would have to displace other organic growers who had traditionally provided the supply. This would not be an insurmountable obstacle, but the growers would have to demonstrate that they could perform *even better* than Veryfine's current suppliers. For example, perhaps the Grand Valley Chapter growers could supply better-looking or

better-tasting produce, or perhaps they could supply new crop sooner than other growers. Veryfine would have to be convinced that this group of growers could supply adequate quality and quantity. It would take time to build trust, so it is unlikely that this distributor would distribute the growers' entire crop the first year. Establishing a viable marketing relationship with Veryfine would likely require the Grand Valley Chapter growers to provide samples of produce and to convince them of their capabilities.

If the growers would choose to enter into a distribution arrangement with Veryfine, "hidden costs" (e.g., for stickers and labeling) would have to be accounted for. In addition, packaging costs could get out of hand. The Grand Valley Chapter growers would receive a wholesale price for their produce by Veryfine. This would generally, but not always, be less than the price they would receive if they were selling directly to consumers (Ricks). These complicating issues would have to be explicitly addressed for the growers to make an informed decision regarding whether or not to enter into a distribution relationship with Veryfine.

There were two major urban areas near the Grand Valley. A city with 950,000 residents was roughly a two hour drive to the east, and a major urban center with a population of more than 2 million was two hours west. An interstate freeway connected these two cities. The growers of the Grand Valley Chapter were all located within 40 miles of this freeway.

One way for the Grand Valley Chapter growers to market their vegetables to residents of these two cities would be by selling to retailers. Both of these cities had an established, competitive retail food infrastructure. The major food retailers in the area were Dominick's, Eagle, Jewel, Meijer, Kroger, Farmer Jack (A&P), as well as a group of independent grocers

who were members of a distribution cooperative. The food retailers in these cities differed in significant ways. While supermarkets were the food retailing format that sold the largest volume of fresh produce, other formats also existed. These other types of stores, which varied by breadth of product lines carried, included produce markets, convenience stores, and natural foods cooperatives, among others. With regard to the supermarket chains, some were publicly traded (e.g., Kroger) and some were privately owned (e.g., Meijer). And in addition to the multi-unit chains, some grocery stores were single unit, stand-alone entities. Some were self-distributing, while others used distributors. These characteristics (e.g., breadth of line, stock ownership status, number of units, and whether they self-distribute) illustrate some of the ways that retailers could be segmented by potential suppliers.

The major food retailers had centralized purchasing operations in other states. These retailers dealt in extremely large volumes and required consistent quality produce on a year-round basis. Some of the owners of the independent retailers (both the members of the distribution cooperative and produce stores) expressed an interest in buying produce locally. It was difficult to determine, however, if these comments were sincere or merely public relations.

In recent years, natural food retail chains including Whole Foods, Wild Oats, and Randall's Better Health Food Stores established themselves in these two metropolitan areas. They had even begun to open retail stores in medium sized cities in counties adjoining Olsen and Glasgow Counties. One of the natural food chains mentioned above had implemented a system in which produce buyers traveled the local interstate highway, stopping to buy produce from local growers. Finally, there were two natural foods cooperatives that operated

retail outlets in the greater Grand Valley area. These organizations had historically favored produce from smaller farms in the local area.

A positive aspect of marketing through retailers would be that the growers could sell a substantially larger volume of produce than they could sell directly to consumers. From a broad perspective, marketing to retailers would save the Grand Valley Chapter growers from the investments and operating expenses required to sell directly to consumers. For example, this alternative would not involve the time commitment for monitoring a sales area and transacting with individual consumers that would be required to sell at farm markets or farmers' markets. Other direct-to-consumer marketing costs that would be avoided when selling through retailers include investment in fixtures and expenses for rent, wages, etc. Finally, retailers would provide customers, marketing skills, and experience.

Retailer customers would have their own needs, beyond those of the consumer. These needs would correspond generally with those mentioned in the discussion of the distributor (Veryfine Produce), with the additional need for convenient delivery. Further, potential retailer customers that sell produce would already have produce suppliers. Thus, to get their products into the store, the Grand Valley Chapter growers would probably have to displace the current supplier(s). The fact that these growers could only supply for a limited period of time (i.e., in season) would likely exacerbate this problem.[64] Getting produce into a retail store with an established supplier base would also entail disrupting established relationships, which could cause conflicts. Many area retailers only bought through distributors. Basically,

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[64] One product from the Scenic State with a relatively short availability that had been successfully introduced into retailers, however, was sweet corn. This product, in particular, has an in-season, locally-grown appeal.

it would be impossible for this group of growers to sell their produce directly to retailers with this policy. A supplier would have to be in business 12 months per year to sell to a major food retailer. Further, sometimes retailers in the area charged suppliers a slotting fee to get new products onto their shelves.

If the Grand Valley Chapter growers would choose to sell to retailers, they would have to establish relationships. The grower group would have to build trust in their ability to supply acceptable-quality produce, in the agreed-upon volume, at the correct time, on a price-competitive basis. Maintaining relationships with retailers would involve an investment in time. For example, marketing to retailers would require time to coordinate quality issues and delivery (e.g., for making phone calls and sending faxes). It is possible that the Grand Valley Chapter growers could overcome the barriers to selling to retailers by working together. If they would pool their produce, they could divide the promotional efforts, delivery time, and required incremental costs. With a larger, pooled volume it would be easier to establish a reputation for quality and delivery performance, if they had adequate production and service capabilities. To implement such a plan, however, a monitoring and enforcement system for quality would have to be developed to prevent free riding.

The Grand Valley region had many restaurants. Of course, the area had its share of outlets for the national quick-service restaurant chains, e.g., McDonald's, Burger King, Wendy's, and Taco Bell. Due to the fact that these restaurants did not purchase any organic ingredients, the quick-service chains did not provide an opportunity for producers of locally-grown, organic produce. The Grand Valley region also had a full complement of casual chain restaurants. These included Applebee's, Pizza Hut, Chi Chi's, and similar restaurants. Like the quick-service restaurants, however, the casual chains did not purchase any organic

products. This prevented them from being a potential outlet for the products of the Grand Valley Chapter growers.

There were at least 120 independently-owned restaurants in Glasgow County and at least 90 in Olsen County. In many of these restaurants, purchasing was done by the owner. In addition, the fact that these restaurants were typically stand-alone enterprises allowed for flexibility in menu composition. These characteristics made the independently-owned restaurants relatively good candidates as customers for the Grand Valley Chapter growers. Of course, even among independently-owned restaurants in these two counties, there was substantial variation in menu selections and general quality of fare. Substantial research and investigation would be required to determine which of these restaurants were the most promising potential customers for the grower group. Another prime potential set of customers for the Grand Valley Chapter growers was the group of upscale, gourmet restaurants located in the major metropolitan areas to the east and to the west. As mentioned previously, chefs at gourmet restaurants often preferred to use organic produce in their recipes, and they were willing to pay a high price for ingredients of the desired quality.

As customers, restaurants (especially upscale, gourmet restaurants) would be more amenable to accepting unusual varieties and small quantities than retailers would be. Some of the more upscale restaurants in the metropolitan areas near the Grand Valley demanded locally-grown, in-season produce. Products sold to restaurants generally would not have to look as good as products destined for markets where the consumer selects the fruits and vegetables. Further, this marketing channel would provide an opportunity for consumer education by the restaurant operator. An example was the White Dog Café in Philadelphia, Pennsylvania. This restaurant bought directly from local farmers and spread a message of

environmental activism to its customers (Bogo). This type of information would encourage new consumers to purchase locally-grown, organic produce through other channels.

Marketing to restaurants would require more time in relation to the volume of product delivered. This alternative would involve frequent deliveries of small quantities. Kazmierczak and Bell identified high delivery costs and delayed payment of accounts as drawbacks to this marketing alternative. The best prospective restaurant customers for the grower group were upscale establishments located in the metropolitan areas outside of the Grand Valley. To sell to these restaurants, the growers would have to incur substantial transportation costs and delivery time. Once again, there would be scope for collective action among the Grand Valley Chapter growers to successfully sell to restaurants. The group could work together to jointly market and deliver their produce to several restaurants, thus taking advantage of potential synergies.

There were a number of institutional food service customers in the greater Grand Valley area. The largest of these was Centralia State University, which was 50 miles northeast of Lake City. The university focused on teaching and research, and had over 40,000 graduate and undergraduate students. All of the freshmen and about 15% of the other students lived in dormitories. A student group at the university (the Sustainable Agriculture Action Group) had requested that more locally-grown, organic food be served in the cafeterias at Centralia State. Another institutional food service buyer was the Glasgow County Area Community College. This two-year college had over 8,500 students. It was a commuter campus. Other major institutional food service customers included the public school systems in Olsen and Glasgow Counties, three major hospitals, and a county-operated senior citizen housing complex.

Marketing organic fruits and/or vegetables to a processor was another option for the Grand Valley Chapter growers. In order for the processed product to be labeled "organic," the processor, as well as the growers, had to be certified organic. This typically involved a number of requirements, such as paying a certification fee, developing and submitting an organic processing plan, and passing an on-site audit conducted by an accredited certification agency. Perhaps the most significant barrier for selling organic produce to processors, therefore, was the scarcity of certified organic processors. There were approximately 18 certified organic processors in the Scenic State.[65] One quarter of these processors processed fruits and vegetables. (The others processed products such as dry edible beans and soybeans.) The certified organic fruit and vegetable processors manufactured branded products, but more than half of their production was either private label for supermarket chains or co-packing for other companies.

One positive aspect of marketing to processors would be the possibility for the growers to market some produce that did not look good enough for fresh sales.[66] Perhaps more importantly, selling to processors would provide the opportunity for the Grand Valley Chapter growers to market a much larger volume of produce than would be possible through

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[65] Detailed information regarding certified organic processors was unavailable. There were two private, nonprofit agencies that were the primary grantors of organic certification in the Scenic State. These agencies considered their lists of certified organic processors proprietary information. Complicating matters further, some processors maintained dual certification, i.e., they were certified by both agencies.

[66] Even within the processing market, there were multiple quality grades. For example, there were three quality grades for some berries. In declining order of quality, these grades were: individually quick frozen (IQF) grade, preserves manufacturing grade, and juice quality.

direct-to-consumer channels, such as farm markets and farmers' markets. In addition, some processors in the Scenic State gave their growers a purchase commitment prior to planting season. If the group contracted with a processor, their marketing responsibilities would be relatively limited.

Marketing to a processor would include a risk of non-payment, if payment was not received at the time of delivery. If the Grand Valley Chapter growers would establish a supplying relationship with a processor, they would run the risk of the processor closing or changing product lines. Such circumstances could result in a lack of a market for the growers' crop (Ricks).[67] Marketing to a processor would involve transporting the product, possibly over substantial distances. This would require the grower group to incur significant transportation costs. Organic fruit and vegetable markets were thinner than conventional markets, which would magnify the problem if a processor were to cancel a product with an organic fruit or vegetable ingredient.[68] As with the other channel customers discussed above, marketing efforts would be required to sell to processors. This would probably involve making sales calls and delivering samples. The Grand Valley Chapter growers could work together to jointly market their capabilities to processors. They could also coordinate shipments to reduce transportation costs.

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[67] This is an issue primarily with perennial crops.

[68] For example, suppose there is reason to believe that a major ready-to-eat cereal manufacturer is planning to introduce an organic product that includes a certain dried berry. This causes many organic growers to react by planting a substantial amount of this crop. If the manufacturer makes an abrupt decision to kill the product, these growers may be left holding the bag.

To succeed in the organic fruit and vegetable business (regardless of the distribution channel selected), the growers would have to be capable of producing quality products at an acceptable cost. This would require agro-ecological conditions that compare favorably to other producing regions along with a complement of production skills, financial capital, suppliers of organically-approved inputs, etc. But these production-related factors would not be sufficient to assure success. Each of the marketing channel alternatives described in this section would require a certain level of marketing activity. Further, the channels that allow for greater volume (i.e., distributors, retailers, restaurants, and processors) would have more complex and demanding requirements than direct-to-consumer alternatives. To succeed in these complex and demanding channels, a willingness and an ability to engage in marketing activities (e.g., networking with potential customers, and other promotional activities) would be even more essential for the Grand Valley Chapter growers.

2.4 Agro-ecological, Institutional, and Other Economic Factors

The atmosphere of the Scenic State was generally quite humid throughout the year, and rain was frequent. This had a significantly negative effect on fruit and vegetable production. In particular, the rain and humidity exacerbated the pest problems faced by growers. In drier competing areas, such as California, it was somewhat easier to grow high-quality organic produce because the water supply was controlled through irrigation. Further, the growing season for much of the Scenic State was shorter than that of competing areas. An exception to this was the land immediately to the east of Grand Lake. Due to the moderating effect of the lake, temperatures were moderated in the spring and in the fall. This factor could provide an advantage to the three members of the Scenic State Organic Growers–Grand Valley Chapter located in this climatic zone.

There was nothing extraordinary about the state environmental regulations or other general business regulations (e.g., labor regulations and tax policy) that applied in the Scenic State. Some of the members of the Grand Valley Chapter were concerned about encroaching residential development and the high land values and property taxes that resulted. At the same time, they recognized that such development benefitted them by providing a substantial local consumer base.

One exceptional regulation pertaining to organic growers in the Scenic State was the recently developed state organic regulation. This regulation had passed the legislature and would take effect in six months. A key provision of the regulation was that "a person shall not sell, offer for sale, or represent an agricultural product to be an organic product unless the agricultural product has been certified." The regulation established a procedure whereby farms would be certified organic by registered certifying agents. All organic growers in the Scenic State would be required to pay a registration fee to the state department of agriculture. While there was a sliding scale (based on sales) for the registration fee, some Scenic State organic growers were concerned about the burden it would place on the smallest growers. Further, there was a general feeling among growers that the Scenic State organic regulation would be more difficult and costly to meet than the regulations of other competing states. If this were true, it would place the Scenic State's organic agricultural industry at a cost disadvantage. Finally, it was unclear which regulation(s) would apply when the USDA organic regulation was implemented, which was scheduled to take place 18 months from the time of this case. It was a good possibility that this issue would have to be sorted out in the courts.

Organic farms were somewhat less common in the central part of the Scenic State, i.e., the Grand Valley Region. The reasons for this relative scarcity, however, were not entirely clear. Some of the Grand Valley Chapter growers had received valuable assistance from individual extension agents in Olsen and Glasgow Counties. Other growers mentioned that they felt that their local extension agents did not have adequate knowledge of organic production methods for the particular products in which they were interested. In the northern part of the Scenic State, there was a substantially larger presence of organic growers. These growers received a great deal of organizational and technical support from a county extension director in one of the northern counties. This county extension director actually operated his own 400-acre certified organic farm.

The Grand Valley Chapter growers had a general perception that the area lacked an adequate group of suppliers of organic inputs. Many growers frequently complained that they did not have as much access to inputs such as organic soil amendments[69] compared to other growers in the Scenic State. This added cost to their operations. Further, they could not get the same quality or quantity of technical information and assistance from suppliers that the organic growers in other parts of the state received. It is difficult to quantify the negative impact of this lack of supplier interaction, but it may have been significant.

There were a number of nonprofit organizations in the Scenic State with a mission to promote organic agriculture. These organizations frequently held workshops related to organic production and marketing methods. A few of the members of the Grand Valley Chapter had participated in these educational and networking opportunities. The group as

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[69] Fertilizers are called soil amendments by organic agricultural producers.

a whole, however, did not take full advantage of the assistance available from these organizations. There were also a few public (or semi-public) economic development agencies located in the area. These agencies provided a number of services to Grand Valley area businesses, including consulting and loans to small firms. The members of the Scenic State Organic Growers–Grand Valley Chapter had not tapped into the resources available from these agencies.

There was a good system of interstate, federal, and state highways in the Grand Valley area. Individuals traveling by automobile or truck could expect to arrive in the major metropolitan centers to the east and to the west in approximately two hours. Another transportation option is the Olsen-Glasgow Regional Airport, located five miles from downtown Lake City. This airport offered over 20 flights daily to several larger (hub) airports.

2.5 Characteristics of the Group

Six members of the Grand Valley Chapter (in addition to Jerry Elliott) had expressed interest in jointly marketing produce at the prior meeting. In the weeks since the meeting, Jerry met individually with each of these growers to gather information about the products they produce and the resources at their disposal. Three of the growers were located in Olsen County and four of the growers are located in Glasgow County. An overview of the characteristics of these growers is given in Table 3.4.

Table 3.4: Resource Information for Members of the Scenic State Organic Growers–Grand Valley Chapter.

Number of Growers	7
Total Acres Farmed in 2000	397
Irrigated Acres	71
Farm Size, in Acres (Mean and Range)	Mean = 56.5 Range: 3 to 110
Number of Growers with Internet Access on Their Home Computer	5
Number of Growers With a Web Site for Their Farming Operation	0
Years of Farming Experience (Mean and Range)	Mean = 29.8 Range: 7 to 42
Number of Operations with Temporary, Non-Family Employees	4
Number of Operations with Unpaid Family Employees	3
Number of Growers Willing and Able to Research Customer Needs by Visiting a Library or Through the Internet	7
Number of Growers Willing and Able to Visit Potential Customers to Show Samples or to Describe Production Capabilities	7
Number of Growers Who Market Their Products Locally	7
Number of Growers Who Market Their Products Regionally	4
Number of Growers Who Market Their Products Nationally or Internationally	0
Number of Growers With Access to an Adequate Amount of Debt Capital to Operate, and Expand, if Necessary	6
Age of Growers, in Years (Mean and Range)	Mean: 52 Range: 40 to 66
Annual Gross Sales in 2000 (Mean and Range)	Mean: $32,400 Range: $500 to $150,000
Number of Growers With a Positive Return on Investment (ROI) in the Past Three Years (Among the 6 Who Reported an ROI)	1

With regard to the agricultural products produced, the growers reported producing an extremely diverse selection. Diversity was noted both within and between farms. The products produced include fruits, vegetable, grains, and animal products. A complete list of crops and animals produced in the past year (i.e., in 2000) is given in Tables 3.5 and 3.6. It should be noted that many of the products produced were specialty or heirloom varieties. Examples included blue potatoes, tomatoes with a camouflage-pattern appearance, and Belted Galloway beef cattle.

Table 3.5: Crops Produced in 2000 by Members of the Scenic State Organic Growers–Grand Valley Chapter.[70]

Crop	*Acres*	*Number of Growers*
Hay	117	3
Apples	60	1
Soybeans	38	2
Rye	35	2
Blueberries	20	1
Spelt	15	1
Oats	15	1
Soft Red Winter Wheat	10	1
Hard Red Spring Wheat	10	1
Hairy Vetch	10	1
Winter Squash	9	2
Sweet Corn	8.75	3

[70] In addition to the crops listed in the table, one grower had a quarter-acre garden with Echinacea, sweet corn, and assorted vegetables; and another grower had a 30' by 96' greenhouse with bedding plants, herb plants, and vegetable plants.

Table 3.5, (cont'd)

Tomatoes	6.2	5
Green Beans	4.3	4
Peppers, Assorted	3.85	3
Summer Squash	3	1
Cabbage	2	2
Cucumbers	2	1
Eggplant	1.75	2
Peas	1.2	2
Spinach	1	1
Pickles	1	1
Cantaloupes	.85	2
Potatoes, Assorted	.6	2
Broccoli	.5	1
Watermelons	.1	1
Sweet Potatoes	.1	1
Lettuce	.15	2
Beets	.05	1
Green Onions	.05	1
Cilantro	.01	1

Table 3.6: Animal Products Produced in 2000 by Members of the Scenic State Organic Growers–Grand Valley Chapter.

Animal Products	*Number of Growers*
Beef Cattle	2
Chickens	2
Eggs	2
Sheep	1
Turkeys	1

While compiling the information in Tables 3.5 and 3.6, Jerry tried to obtain data regarding the quantity of each of the agricultural products produced, e.g., lbs. or bushels. Unfortunately, he was unable to obtain this information. One of the larger growers declined to provide the information for strategic reasons. Some of the smaller growers did not keep records of this kind.

The seven farming operations varied substantially in size and degree of commercialization. Four of the producers ran operations that could be considered viable businesses. The other three were smaller, and they expressed their intent to commercialize their businesses. At the time of the case, however, their enterprises seemed more like expensive hobbies. Two of these growers had sales of less than $5,000 in the prior year, and one gave the products he produced to family members and local charities. To their credit, several of these producers had only recently achieved organic certification. (The certification process requires a significant amount of management time and attention.) When asked about their revenues and customers, these smaller growers typically responded, "We're just getting started."

Two of the larger farms were almost exclusively vegetable operations. The owners of these operations had established customer bases. They sold through a number of farmers' markets, which sometimes required them to travel close to 100 miles to reach a particularly desirable market. They also marketed to retailers (mainly natural food stores and food cooperatives). Minor marketing outlets for these growers were sales to individual consumers and restaurants. Since these growers already had markets for their products, they would likely have the least to gain from establishing a cooperative to jointly market the organic vegetables of the grower group. Among the other two relatively large producers, one had historically focused on grains and one on fruit. Both of these growers had minor vegetable enterprises. Further, they expressed a desire to expand their vegetable production if a suitable market were located and secured.

Each of the seven growers maintained that they had individually achieved a high level of customer satisfaction. Three growers, however, employed a somewhat passive approach to marketing. These growers, who were also the smaller growers, had not actively sought out customers. They relied instead on customers approaching them for products, and on current customers to recommend them to potential customers. These three growers focused on performing the functions they enjoyed doing, namely, production activities. They had little knowledge of demand conditions or opportunities to market locally to retailers, processors, or restaurants. The other four (larger) growers, in contrast, did have some knowledge of local marketing opportunities. Some of the larger growers had experience marketing through roadside stands, at farmers' markets, and on a wholesale basis to other firms.

All of the growers maintained that they were willing and able to research customer needs and demand trends. Each also stated that he was willing and able to visit potential

customers (e.g., restaurants, processors, and retailers) and to provide samples. While talking to the growers, however, Jerry got the impression that marketing was looked upon as a necessary evil. Further, it seemed as if the primary motivation for the growers to become a part of a joint marketing cooperative was the hope that the cooperative could take over marketing their products. Ideally, the growers wanted to be able to concentrate on producing their products and to have the cooperative market their products and then mail them a check.

The adequacy of the financial resources of the group of growers could be described as limited, at best. The commercial-sized operations generally had strong and recurring cash flow. Some growers, however, had experience with customers who reneged on contracts, failed to take delivery of products, and failed to make promised payments. All of the growers reported having good credit, which indicated they had access to debt capital if needed for expansion. A few growers mentioned that they had access to equity capital, either from their own liquid assets or from outside investors. At the same time, the growers expressed a reluctance to go into debt to significantly expand their farming operations, or to take advantage of an opportunity to add value to their products by investing in processing facilities.

Three of the farms used part-time, temporary employees on a seasonal basis. These employees primarily assisted with harvesting. The other four farms could be described as one-man operations, with help from family members as needed. While the region had experienced a labor shortage during the prior 18 months, none of the growers expressed concern about being able to obtain an adequate number of employees to do the required work. None of the growers who used hired help complained about the quality of the workers available. At the same time, none of the growers could persuasively argue that there was

anything special about an employee or a family member who worked on the farm that gave their operation a competitive advantage versus other organic growers. The growers and their families, however, did have a strong belief in producing safe and healthy food. These beliefs translated into a good work ethic in performing production tasks.

The buildings and equipment of the growers were adequate for their enterprises. Six of seven growers had at least one barn. (One grower let his equipment sit outside.) Each grower had a tractor. They had a good assortment of cultivation tools and harvesting equipment. A couple of growers mentioned that they had greenhouses to start seedlings. Two growers were quite proud of their technology. One of the larger growers stated, "We use cutting edge technology. . . the latest known to man. We develop our own, if we have to." A different grower had a graduate degree in entomology. His primary occupation was as a consultant to fruit growers. Some of the technologies he used were: integrated pest management, pheromone disruption, soil-nutrition-balancing techniques, and attracting beneficial insects. Other growers performed experiments with their crops, including using sea minerals for fertilizer and recycled swimming pool covers to prevent weeds.

Generally speaking, the growers in the group were well educated. All had at least a bachelor's degree or some technical training beyond high school. Four of seven growers had graduate degrees. Major fields of study included animal science, business, social work, education, tool and die making, biology and chemistry. Most of the operations had family members (e.g., spouses, adult and minor children) who participated actively in production and/or marketing. A son of one of the growers had a degree in horticulture. Besides that individual, however, none of the family members had any special training or skills related to

fruit and vegetable production. Five of the seven growers had full time jobs off-farm.[71] Each of these five growers, plus one of the other growers, had significant, full-time, professional experience. The growers' work commitments, in effect, limited the amount of time they could devote to developing a new, joint-marketing cooperative. This was an important limitation, because essential activities such as identifying and securing high-potential markets are quite time consuming.

The growers differed in terms of the computer and information resources they had available. Five of the seven growers had home computers with Internet access. These growers used their computers for record-keeping, communication (e-mail), and information-gathering. They had ample knowledge of sources of information, such as university and government web sites. The type of information the growers accessed tended to be related to production techniques and weather, not customers or demand. None of the growers had posted a web site for their respective farming operations, but one mentioned that he intended to do so soon. Two of the growers had purchased inputs (e.g., tools, sprays, and seed) over the Internet. None of the growers, however, had participated in bulletin boards or chat rooms.

The growers generally did not engage in systematic, long-term planning. Crop selection was done using a trial-and-error approach. Some growers expressed a desire to obtain specific capital equipment in the medium term (e.g., a turkey barn or milk-bottling equipment). Others expressed a desire to put less time into farming. In earlier years, the group met regularly for meals at members' homes. More recently, they had only met four to

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[71] One of the growers was planning to retire from his off-farm job within a month of when Jerry interviewed him.

six times per year, for formal business meetings. Except for some isolated cooperation in pairs, the group members did not really know each other very well. One of the growers expressed a reluctance to get involved in a business venture with the others. Jerry sensed that the two major challenges of a possible marketing cooperative would be establishing goals that all participants could agree on, and coordinating production and logistics to achieve scale economies or other synergies. Unless these challenges could be successfully managed, it would be highly unlikely that a viable marketing organization could be established.

2.6 The Dilemma: Future Directions

Jerry was faced with a dilemma regarding what recommendations to make at the meeting of the Grand Valley Chapter. At the last meeting, in November,[72] four other growers expressed interest in marketing their produce jointly. Jerry had interviewed these four plus two other growers since the meeting, to ascertain the resources at their disposal. He was concerned about whether the group had a critical mass of product and expertise.

There were other organic growers in the region who were interested in a joint marketing organization for produce, but Jerry had a hard time getting any to meet with him to discuss the group's plans and the resources they could contribute. In addition, Jerry was busy enough with his own enterprise, and he really did not want to put any more time into the project. In fact, he wished one of the other members would step up and offer to lead the project from this point forward.

Keeping all this in mind, Jerry pondered what recommendation regarding future direction would be best for the group. As he conceived it, the future direction of the group

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[72] There had been no meeting of the Grand Valley Chapter in December.

would have at least two dimensions. First, the members of the group would have to agree on whether or not to go ahead with a joint marketing project, and if so, how to proceed. The second aspect of their strategy is which target market to jointly pursue. The target market selection would be operationalized by choosing an appropriate distribution channel.

If the group chose to go ahead with the joint marketing project, they would have to decide how aggressively to move to achieve their goal. The first alternative for the group would be to immediately form a marketing cooperative, consisting of the seven growers from the Grand Valley Chapter. Proposing this full-speed-ahead option would put the group members' commitment to the test. This alternative would require intense effort, with a goal of creating the organization and beginning operations in the shortest possible time. This option would involve the following activities:

- Securing a modest financial contribution from each grower currently interested in joining the organization (other groups have required a contribution in the $200 range);
- Obtaining legal assistance to establish the appropriate formal organization, whether it is a cooperative, Limited Liability Corporation (LLC), or some other form of business organization;
- Holding a strategic planning retreat to determine the group's strategic direction. Key components of the plan would be the organization's name, vision/mission statement, long-term objectives, and tactical goals.

One of the key issues that would have to be addressed in the strategic plan would be whether or not the current group has sufficient capacity to comprise an effective marketing

cooperative, or if they should recruit additional members. If the group decided to rapidly build capacity by recruiting new members, a recruitment strategy would have to be developed. At a minimum, the plan would have to include the following: who would do the recruiting, what methods and materials would be used, who would be targeted as potential members, and a timetable for key events.

Another option for going ahead with the cooperative would involve gradually developing or enhancing the capacity and capabilities of the group. The gradual capability building option would entail engaging in a greater level of joint activities among growers currently interested in the project. This would take advantage of the potential synergies among group members. This option would represent a more moderate strategy in terms of amount of effort and speed of development of the grower organization, than the aggressive strategies outlined above. To implement this alternative, growers would have to expand informal coordinated efforts among current participants. A number of different types of coordinated efforts would be possible, including:

- Pooling products to sell at farmers' markets and/or roadside stands;
- Traveling together to farmers' markets and assisting one another in selling activities;
- Developing and launching a web site for the group with links to individual web pages for each group member's farming operation;
- Traveling to trade shows (e.g., the Natural Products Expo) to promote the capabilities of the group and to seek new customers;
- Sharing information on products (and quantities) available, and referring customers to other group members as opportunities arise (e-mail would likely be an effective way to accomplish information-sharing;

- Purchasing inputs jointly, and whenever possible, purchasing products from each other;
- Meeting informally to share information on production and marketing innovations and simply to get to know each other better. These meetings should be more frequent than once a month.

It would not be necessary to implement all of the activities listed above to build capacity gradually and effectively. Group members could select as many as they felt comfortable with. The primary goal of these activities would be to increase the strength of the relationships among group members. Secondary goals would include developing the reputation of the group as an entity and increasing sales and/or operating efficiency. The establishment of a formal cooperative (as outlined in the previous alternative) could be undertaken at some future date, depending on the results of the coordinated efforts selected.

If the group decided to pursue one of these go-forward options, they would face another decision. They would have to decide which marketing channel to pursue. Jerry felt strongly that the group did not have adequate capital to build or purchase its own processing facilities. Potential distribution channels for the group would include the following: on-site farm markets, farmers' markets, distributors, retailers, restaurants, and processors. (Specific information about conditions and characteristics of these channels in the Grand Valley area as well as general pros and cons for these channels have been given previously.)

Of course, an additional alternative would be for the group to decide not to pursue the development of a marketing cooperative. This option would mean that the group members could continue to engage in informal, joint marketing efforts (for those producers who are currently involved in such efforts). Other producers would continue to operate and

market products independently. If this alternative is selected, the overall group would abandon efforts to develop a more formal and permanent joint-marketing arrangement for the foreseeable future. Choosing this option would be implicit recognition that a critical mass did not exist and was not likely to be achieved in the future.

Jerry felt somewhat unsure of what course of action he should recommend to the group. He was unsure not only about which distribution channel the group should pursue, but also about whether the group should even go forward with forming a marketing cooperative. Jerry wondered to himself, "What is the real future for our Grand Valley Chapter?"

3. Framework Application and Teaching Note

The Grand Valley Chapter case presented an agribusiness decision-making situation. This section will include an application of the resource inventory for product-oriented agriculture that was introduced in the second essay of this dissertation. Information is also provided that will assist the instructors who use this case in their classes. While the discussion questions may be given to the students with the case, the rest of the material in this section should not be given to the students.

3.1 Case Objectives

This case has two objectives, one related to research and the other related to teaching. With regard to research, the case presents a contextually rich set of circumstances that provides an opportunity to apply the new resource inventory for product-oriented agriculture. The application of the inventory will test how useful the framework is in analyzing strategic problems in agribusiness. The framework can be considered useful if it contributes to the

ability of decision makers to make appropriate strategic decisions. In addition, the application of the resource inventory will verify the workability of the framework, and thus assist in theory-building.

The second objective is to facilitate development of business strategy skills in students who are assigned the case. It will expose students to some basic information about organic agriculture, the demand for organic food, and the requirements for marketing produce through different distribution channels (from a small or beginning grower perspective). The case presents an extensive set of information for students to analyze. To successfully solve the case, students must identify the most important variables and build a reasoned, coherent strategy for the grower group. If students apply enough time and effort, they will improve their understanding of business strategy.

3.2 Uses of the Case

With regard to the teaching objective, this case is intended for use in a senior-level business strategy class. The case could be used with students in a general business program, but it would be most appropriate for an integrative, or capstone, course in an agribusiness management undergraduate program or a course on cooperatives, especially with a section on cooperative formation. In such classes, the case could be assigned for classroom discussion. Such a use of the case would be most effective after students have been exposed to the strategic planning tools of internal and external analysis (i.e., SWOT analysis) and have some background in strategy formulation. The case could also be used as a take-home exam in such classes. To use the case in this way, students could be given the case, with or without the discussion questions.

Students in a for-credit academic class would be most likely to be sufficiently motivated to read and prepare a case of this length. The case may be effectively used in other situations (e.g., extension settings, conferences, or workshops) if the students are sufficiently motivated to read the case and develop a solution. In fact, using the case in certain extension settings may provide additional information about which resources agribusiness practitioners feel are strategically important. Such information would further reflect on the usefulness of the resource inventory for product-oriented agriculture.

3.3 Discussion Questions and Suggested Answers

In this section, three discussion questions are presented in italics, below. Suggested answers follow individual questions. These answers reflect the author's viewpoint after having actively researched the case. This research included review of secondary data, as well as interviews with individual organic producers and key industry informants.

The first question pertains to the resources available to the Grand Valley Chapter growers. This provides the catalyst for the application of the resource inventory for product-oriented agriculture that was introduced in the second essay of this dissertation. The answer to the question demonstrates how the inventory framework may be applied. The second question allows for consideration of other, non-resource factors by focusing on barriers that stand in the growers' way. This question also helps to point out why many resources could not support a sustainable competitive advantage for the grower group. The third and final question asks for a strategy recommendation for the grower group. This question helps to determine how useful the resource inventory framework was in supporting decision making. This question allows the usefulness of the framework to be tested.

3.3.1 Resources

What resources could potentially contribute to a competitive advantage for the grower group?

In general, there are two categories of resources that could potentially enable an agribusiness to achieve a sustained competitive advantage: less-controllable resources and more-controllable resources. The seven subcategories of less-controllable resources are agro-ecological resources, access to a beneficial labor supply, institutional infrastructure, physical infrastructure, access to beneficial markets, access to beneficial related and supporting industries, and support infrastructure. The five subcategories of more-controllable resources are physical capital resources, financial capital resources, human capital resources, marketing and information resources, and organizational capital resources. Each of these types of resources will be considered as a potential source of competitive advantage for the Scenic State Organic Growers–Grand Valley Chapter.

3.3.1.1 Agro-ecological Resources

The agro-ecological resources that apply to the grower group in the case have positive and negative features. On the positive side, the growers who are located on the east side of Grand Lake enjoy the moderating effect of the lake, due to the warmth picked up by the prevailing westerlies and carried inland. This would allow these particular growers to get the jump on other growers and supply fresh produce (e.g., strawberries or tomatoes) to retail outlets before other growers could.

The one positive aspect related to agro-ecological resources is probably outweighed by the negative aspects. One of these negative aspects is that the growing season is shorter than in competing areas. Another important negative aspect of the agro-ecological resources

of the group is the rainy, humid climate. This makes pest control more difficult to achieve than in a drier area, such as California, that relies on irrigation. This handicap is especially significant for the production of organic produce, because the use of many pesticides is prohibited in organic production.

3.3.1.2 Access to a Beneficial Labor Supply

The case mentions that the region is experiencing a labor shortage. At present, however, the size of the growers' operations is small enough that they do not need to recruit outside labor. If a substantial expansion of their operations is undertaken, the labor shortage may serve to limit growth. This would make a substantial expansion difficult, if not impossible, to achieve.

It should be noted that this subcategory of resources refers not only to the *quantity* of workers available to firms, but also to their *quality*. Due to the scope of this case, only limited information was provided about the quality of the work force in the region. For this reason, no firm conclusions may be drawn regarding whether or not the quality of the regional work force could provide the grower group with a sustained competitive advantage.

3.3.1.3 Institutional Infrastructure

Institutional infrastructure refers to the rules of the game that apply to the grower group. The case indicates that in general there is not anything extraordinary about the regulations that apply to the growers in the Scenic State. This implies that there is no potential for these growers to obtain a sustained competitive advantage from state regulations. In fact, the high property taxes that result from the encroaching residential development places the members of the Grand Valley Chapter at a *disadvantage*.

The one exceptional regulation that applies to the grower group is the Scenic State's new organic regulation. The impact of this regulation on organic growers in the state is somewhat ambiguous. The fee imposed upon growers will certainly have a negative impact, especially for the smaller growers. At the same time, to the extent that the new state regulations are more stringent than the USDA (federal) regulations that are scheduled to take effect in 18 months, there is a possibility of using the state regulations to differentiate products. More specifically, if the Scenic State regulations are stricter than the USDA regulations, organic growers in the state could promote the Scenic State certified-organic label as signifying cleaner food than organic food produced in other states. Alternatively, they could promote certified organic food from the Scenic State as being more beneficial to the environment than organic food from other states. Such a marketing approach, however, does have risks. It could backfire and turn consumers away from organic food in general.[73] About the only definite conclusion about the effect of the new Scenic State organic regulation is that it injects more uncertainty into planning and decision making for growers in the state.

3.3.1.4 Physical Infrastructure

This group of resources is the public foundation of tangible facilities (e.g., roads and railroads) that are available in the region under consideration. The members of the grower group were generally quite satisfied with the quality of roads near their farms, and their access to major freeways. This resource may contribute, at least marginally, to a competitive advantage for the growers over other growers in more remote areas with an inferior road system. The volume produced by this particular group of growers is not large enough to

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[73] An analogy is one airline advertising itself as safer than other airlines. This could have the effect of frightening consumers completely away from air travel.

make the rail system a relevant resource. Further, the growers have access to the Olsen-Glasgow Regional Airport. This may be a valuable resource if they obtain a customer located outside of convenient driving distance who is willing to pay top dollar for organic produce. In general, while the physical infrastructure available to the Grand Valley Chapter growers may not provide a sustained competitive advantage, at least it will not hold them back, i.e., prevent them from taking advantage of market opportunities.

3.3.1.5 Access to Beneficial Markets

For fruit and vegetable growers, market access can be evaluated at multiple levels. These levels include consumers, distributors, institutions, retailers, restaurants, and processors. In addition, both the *quantity* and the *quality* of demand are important. At the consumer level, the Grand Valley Chapter growers have access to a large quantity of potential buyers. The quality of these consumers (from the standpoint of a marketer of organic food) is not as good as the quality of consumers in the Northeastern United States and on the west coast, however, because their preferences regarding high quality, organic produce are not as sophisticated. But on a positive note, at least a substantial fraction of consumers in the region are concerned about food safety, health and nutrition, and the environment. Combined with the fact that there are few organic growers in this area, this resource could benefit the grower group competitively.

Two ways to access consumers are through farmers' markets and on-site farm markets. The fact that there are several farmers' markets in the Scenic State gives rise to the possibility that this could be a valuable resource for the grower group. Accessing markets in the more affluent communities has the best potential for creating a sustained competitive advantage. This could be achieved if access to the farmers' market consumers in these

communities meets the requirements for a resource to provide a sustained competitive advantage. That is, the property right of marketing under those circumstances must be valuable, rare, costly to imitate, and non-substitutable. One key factor would be how many farmers' markets there are in nearby affluent communities (i.e., rareness). Another key factor would whether these markets have enough capacity to add a sufficient number of organic growers to force prices down to a near-competitive level (i.e., imitability).

Regarding on-site farm markets, a number of variables will affect the strategic value of this marketing channel. These variables include, for example, the quality and quantity of traffic on the applicable road, zoning and restrictions on signs, relationships with neighbors, etc. The case does not provide detailed information about these variables, and they would have to be evaluated separately to determine the presence of a resource that could provide a sustained competitive advantage.

There is one certified organic distributor in the Scenic State. Its proximity to the grower group, as well as its relationships and reputation, could serve as a resource. The question arises as to who will capture the value of the assets of the distributor if the Grand Valley Chapter growers establish a vertical relationship with them. The case implies that the distributor, Veryfine Produce, is fairly large. Further, they have significant experience in produce distribution in the Scenic State. Finally, Veryfine Produce has a broad and diverse set of suppliers, including conventional produce growers and organic produce growers from California. These factors, combined with the limited product volume of the Grand Valley Chapter growers, make it quite likely that Veryfine Produce would obtain most of the benefits of the distributor's resources. In other words, it is doubtful that the grower group could receive a sustained competitive advantage from such a relationship.

The Grand Valley area features a wide assortment of institutional food service customers. The case mentions a university, a community college, school systems, hospitals, and senior citizen complexes. Institutional food service buyers, however, tend to place a great deal of emphasis on price when they select suppliers. Further, the large volume required by institutional customers would prevent this grower group from pursuing this particular marketing channel. There is one potential bright spot for the grower group in the institutional food service landscape. That is the opportunity to work with the Sustainable Agriculture Action Group to market produce to Centralia State University. This university-affiliated group has a goal of supporting sustainable agriculture and food systems, and had made a request to the university's administration for more locally-grown, organic food to be served in the cafeterias at Centralia State. These characteristics of the university group comprise a valuable resource for the organic growers in the Grand Valley area. In fact, this resource is probably more likely to contribute to sustained competitive advantage than any other mentioned in the case.

The food retailers in the area may also serve as a resource for the grower group. As mentioned above, the major retailers (i.e., the large supermarket chains) deal in large volumes. Because the group farms less than 400 acres in total, the total volume that could be supplied would be insignificant to the major retailers. For this reason, the major retailers would not be a promising potential marketing channel for these particular growers. The independent food retailers (i.e., members of the distribution cooperative and the produce stores) are more likely to serve as a channel resource for the grower group, but the case leaves this ambiguous. Access to outlets of the natural food retail chains also has potential for being a valuable resource for the grower group. In particular, the new outlets of these chains in counties

adjoining Olsen and Glasgow Counties provide good opportunities to establish retail relationships. One reason for this is that the organic growers in the Grand Valley could supply them with locally-grown produce. The locally-grown designation could provide incremental consumer appeal, if promoted effectively. The close proximity of these customers would result in lower distribution costs and effort. The proximity of these customers would also facilitate communication about their needs and would speed resolution of quality problems. Finally, the fact that these outlets are new may present a window of opportunity for being added as a supplier.

The situation with the restaurants in the Grand Valley and the adjoining metropolitan areas is somewhat similar to the food retail situation discussed above. While there are a variety of different types of restaurants, some are clearly inappropriate markets for the organic growers of the Grand Valley, and thus would not serve as a resource to contribute to their competitiveness. Specifically, the fast-food outlets and the casual chains do not provide a viable potential market for the grower group. These restaurants do not purchase organic fruits and vegetables as ingredients. It is also likely that they have centralized purchasing functions, which would make it difficult for a group of small growers (organic or conventional) to become suppliers. The owners of the independently-owned restaurants in Olsen and Glasgow Counties, in contrast, tend to do their own purchasing. Further, the independently-owned restaurants have control over their menus, thus giving them flexibility to add seasonal items. Although the case does not specify this, some of the independent restaurants may purchase organic fruits and vegetables. These factors imply that the independent restaurants have greater potential to be a channel resource for the grower group. For similar reasons, there is also potential to benefit from the gourmet restaurants located in

the metropolitan areas to the east and west. These restaurants would likely demand more high quality, organic fruits and vegetables than the local independent restaurants, and would probably be willing to pay a higher price. These characteristics would have to be traded off against the additional delivery time and expense that would be required to supply the gourmet restaurants in the metropolitan areas.

The processors in the Scenic State could possibly be a resource for the grower group. The greatest potential comes from the certified organic processors. At the same time, if a processor who is not certified becomes certified, the Grand Valley organic growers would have an opportunity to establish a vertical relationship with this processor without having to displace any other suppliers. Among the processors who are currently certified organic, those who produce branded products probably extract more value from the value chain than do processors who focus on private label or co-packing. These processors, in turn, have greater potential to serve as a valuable strategic resource for the grower group.

3.3.1.6 Access to Beneficial Related and Supporting Industries

Conventional fruit and vegetable industries could be considered a related industry for organic fruit and vegetable production. Further, for organic production of fruits and vegetables, some inputs are common to conventional fruit and vegetable production and some are not. Because the Scenic State has well developed conventional fruit and vegetable industries, many inputs would be available to the organic fruit and vegetable industries. Thus, the conventional fruit and vegetable industry in the Scenic State (a related industry) is a resource that should enhance the competitiveness of the organic fruit and vegetable industry through making available common inputs.

The situation related to suppliers of inputs specific to organic fruit and vegetable production is different from the common input situation. The case mentions a lack of suppliers of organic inputs in the Grand Valley area. The inadequate local supplier base could put the organic growers in this area at a disadvantage. Table 3.6 indicates that a number of members of the grower group have organic animal enterprises. The organic materials (i.e., manures) produced by these enterprises could be composted to produce production inputs. These composted inputs could be a valuable resource, and could lead to synergies if shared among members of the grower group.

3.3.1.7 Support Infrastructure

The case offers mixed evidence regarding quality or value of the assistance available from local extension agents. When contrasted with the exceptional support infrastructure provided by extension agents in the northern part of the Scenic State, however, the organic growers in the Grand Valley region appear to be at a disadvantage. The nonprofit organizations dedicated to promoting organic agriculture provide worthwhile services (e.g., workshops) to the organic community of the Scenic State. These organizations could be a resource that would enhance the competitiveness of the grower group. The same conclusion could be drawn about the economic development agencies that provide both consulting and loans to small businesses. It should be noted, however, that the Grand Valley Chapter growers were not taking full advantage of the applicable support infrastructure.

3.3.1.8 Physical Capital Resources

The tangible tools, equipment, computers, vehicles, buildings, and other facilities possessed by the firms under consideration are called physical capital resources. In contrast to the less-controllable resources considered previously, physical capital resources are a type

of more-controllable resources. This is because these resources are internal to firms, and can be added to or modified, as allowed by available technology.

The growers in the group appeared to have all of the physical capital resources necessary to produce their current assortment of plant and animal products. These resources should be considered valuable because they allow the growers to implement strategies that take advantage of opportunities. At the same time, these resources are not rare. Conventional growers and potential entrants to organic farming can obtain these resources fairly easily. For this reason, these resources should support normal returns, but not a sustained competitive advantage.

3.3.1.9 Financial Capital Resources

The relevant financial capital resources are the equity of firms in the grower group and their ability to attract debt capital. While each grower maintained that he had good credit, some of the operations did not have strong and recurrent cash flow. Thus, for these firms, financial capital resources could very likely be a limiting factor for the formation of a new enterprise. In order for multiple growers to establish a new business, regardless of its form of organization, it is important for all owners to make an equity contribution. According to Thyfault, a value-added agriculture project of any size requires seed capital in the range of $150,000. The implication is that if the growers in the group are unable or unwilling to contribute equity funds, the new venture may never get off the ground.

Similar to the physical capital resources possessed by the group, there is nothing rare about their financial capital resources. This indicates that the group's financial capital resources alone will not provide the group a sustained competitive advantage. In addition, some of the members of the group expressed a reluctance to tap into their respective lines of

credit. (Perhaps this was due to the lack of profitability of their personal operations.) This reluctance may detract from the group members' ability to attract debt capital. In other words, the fact that group members have access to debt capital is irrelevant if they choose not to borrow these funds.

3.3.1.10 Human Capital Resources

The human capital resources of the group should be examined for their potential to provide a sustained competitive advantage. Generally speaking, the growers have high levels of education. Some of the growers and their family members have college degrees in agriculture-related fields. Others have degrees in different areas that may also be helpful to the operation of a produce marketing firm. Further, the growers seemed to have adequate computer, finance, and accounting skills. The facts of the case indicate that the group has relatively high quality human capital resources. The education and skills of the group are probably not competitively superior (i.e., valuable) or rare enough, however, to support a competitive advantage.

In evaluating the human capital resources of the group, the quantity of the resources available plays a role, in addition to quality. To establish and operate a successful produce marketing firm, it would be critical that the individuals with the right skills contribute sufficient time. Two facts from the case lead to the conclusion that this (i.e., obtaining an adequate amount of participation in the activities of the new firm) is a significant concern. First, a number of the growers have full-time jobs off of the farm. Considering that these growers must also dedicate a substantial amount of time to raising their crops, this seems to indicate that they would not be able to dedicate much time to performing functions required to establish a new enterprise. (These functions would include activities like identifying and

securing beneficial customers.) The second fact that suggests that obtaining a sufficient time commitment may be difficult is that the two large vegetable growers travel long distances to sell at farmers' markets. Such travel limits the amount of time they have available to work on establishing the new firm. It would be possible, of course, to have employees of the new firm perform activities such as identifying and securing customers. A substantial amount of research and marketing effort, however, would be necessary to get the business off the ground. Thus, initial operating capital would have to be raised by the growers, which would include at least some equity. Based on the limited profitability of the growers' individual operations (as indicated in Table 3.4), it is doubtful whether they would be willing to contribute an adequate amount of equity to cover salaries for employees prior to the establishment of a positive cash flow for the new firm.

3.3.1.11 Marketing and Information Resources

A number of different skills and resources make up the category called marketing and information resources. Among the skills necessary to successfully market differentiated agricultural products are communication skills, networking skills, and research skills. The case indicates that the members of the group are generally well educated. More specifically, all of the members have at least a bachelor's degree or some technical training beyond high school, and four of the seven have master's degrees. To obtain a degree in some of their fields of study (i.e., business and education), students are required to perform research and to make presentations. The group members also have considerable professional, full-time work experience off of their farms. It would thus be reasonable to infer that the group members developed these skills through their education or work activities.

Of course, simply possessing the requisite skills is not enough to ensure a successful new enterprise. The growers must also be willing to employ these skills. In other words, the growers must be willing to engage in activities such as promoting a reputation for quality and service, prospecting for customers, negotiating with customers, and keeping abreast of demand trends. The case is somewhat ambiguous regarding how willing the growers are to engage in such activities. On the one hand, they stated that they are willing to research customer needs and to visit potential customers. On the other hand, it seemed like group members wanted the joint marketing cooperative to take over marketing functions so that they could concentrate on the activity they enjoy: growing their crops.

The products produced by the growers in the group have characteristics that distinguish them from generic commodities. First and foremost, all seven growers are certified organic. This confers a certain brand appeal (related to health, nutrition, and the environment) to their products.[74] Second, many of the vegetables produced by the growers are specialty or heirloom varieties. Finally, their products are special to nearby consumers who prefer locally-produced food. The fact that the growers are located in a well populated area tends to increase the value of this characteristic, i.e., the locally-grown designation. For these three reasons, the products produced by the growers group are differentiated, and therefore they may be considered marketing resources. In addition, the growers indicated that present customers were satisfied with these products. Assuming this to be true, it indicates that the products produced are a valuable resource. Of course, many of the growers had

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[74] See the section of the case on the demand for organic produce for a more complete discussion of the appeal of products labeled "organic."

achieved only limited distribution for their products, which would tend to limit the value of the customer satisfaction that had been developed.

The four largest growers have knowledge of local marketing opportunities. The other, smaller growers, on the other hand, have very little knowledge about potential customers in the local area. Thus, marketing information is a resource that is not distributed evenly among the group members. This raises the question of whether the larger growers would be willing to use this resource for the benefit of the entire group. The case does not mention any proprietary customer databases controlled by the growers. Likewise, no mention is made of any future-oriented databases or scenario models used by group members.

The group has a relatively good general computer infrastructure, as evidenced by the fact that five of seven growers have Internet access in their homes. Those growers with Internet access have substantial knowledge of publicly available databases related to organic production and marketing. This computer hardware and knowledge could be considered a latent resource. It holds the potential of creating some synergies among group members by facilitating the sharing of knowledge, if the other members become connected and someone sets up a system for exchanging information. In addition, using the Internet to promote and sell the products of the group is another untapped resource.

3.3.1.12 Organizational Capital Resources

Unlike human capital resources which reside in individual employees, organizational capital resources reside in collections of individuals (Barney). Organizational capital resources include the reporting relationships and standard operating procedures (SOPs) of an organization. They also include planning and controlling systems, the culture and

reputation of the organization, as well as relationships among individuals in the organization and between members of the organization and elements of its environment (Tomer).

The most important organizational capital resource for the grower group is the fact that they are certified organic. Because of the positive brand connotations of organic, this is a valuable resource. It is also rare, at least in the Grand Valley region. The process of becoming certified organic is somewhat lengthy and difficult, thus making this resource costly to imitate. There are some other production practices that can be marketed as substitutes for organic, e.g., integrated pest management (IPM). These practices do not have the same level of consumer awareness as organic certification, which implies that they are not close substitutes. This suggests that the organic certification of the growers may provide a sustained competitive advantage. Proper planning and implementation of a marketing strategy, however, would be required to capitalize on this resource.

Another related resource that could benefit the grower group is its local connection with nearby consumers. With regard to only the organic consumers in the Grand Valley region, the locally-grown designation is a resource that cannot be imitated. Further, the growers' operations are small, family farms. This characteristic is a resource that could be taken advantage of by promoting it among consumers who prefer to support small, family farms.

Besides the resources that have been mentioned, the group as a whole does not have a wealth of organizational resources. There is not a strong, well-defined organizational structure. The group is supposed to meet monthly, but the meetings are frequently canceled. The members do not communicate a great deal between meetings. They do not take advantage of technology (e.g., electronic mail) to communicate within the group. The case

states that the growers generally do not know each other very well, and that one grower expressed a reluctance to go into business with the others. This is evidence of a serious lack of organizational capital.

3.3.2 Barriers

What are the critical weaknesses of the group or other factors that could serve as barriers to the formation of a successful cooperative, partnership, or corporation for marketing organic produce?

The lack of a critical mass is the dominant barrier facing the group. As currently composed, the group has insufficient acreage or volume to justify a significant new venture. This is reinforced by the fact that the largest two growers in the current group already have established customer bases and distribution channels, and they would not be likely to contribute a large fraction of their produce to the proposed enterprise. The other growers do not make a significant enough incremental volume to justify a substantial new project. Further, there is too much disparity in size and scope of potential members' operations. It would be difficult to set up a cooperative or partnership with only a few members when the size of the members' operations vary in size by a factor of ten or more.

The agro-climatic conditions facing the group present a barrier. The area's moisture exacerbates disease and insect pest problems. The Scenic State's short summer growing season (relative to California) also limits the region's competitiveness. The case describes a fairly well developed support infrastructure available to the growers, including nonprofit organizations that promote organic agriculture and economic development agencies. To date, the group has not taken full advantage of the opportunities presented by these support organizations. (An exception is the fact that some of the group members had consulted with

local extension agents to address agricultural production problems.) Unless they change their behavior, this reluctance to tap into the local support infrastructure may be a barrier to the group in establishing a joint, produce-marketing cooperative.

Individually, the growers do not have established long-term planning systems. While some growers expressed medium-term goals for acquiring certain capital assets, these goals were not systematically integrated with strategies and tactics that would facilitate their achievement. This lack of formal business planning experience at the individual level may make it difficult for the growers to establish a strategy (i.e., mission/vision, goals and objectives, and specific action plans) for the joint marketing enterprise. Thus, their inexperience in formal strategic planning may serve as a barrier to the group's success in establishing a vegetable marketing cooperative.

Strong leadership is an essential ingredient in establishing value-added agricultural cooperatives. The case indicated that the ostensible leader of the group, Jerry Elliott, was not enthusiastic about the potential new venture, and that he would rather that another member took over the lead on the project. Further, the members tended to look at the produce marketing organization in terms of what it could do for them rather than a worthwhile entity that deserves time and effort to build. Thus, critical barriers to the group's success in establishing a firm to jointly market their produce are a lack of leadership and a lack of member commitment.

Another potential barrier for the group is its lack of cohesion, or esprit de corps. The case mentioned isolated instances of cooperation by pairs of growers, but the general impression is that the entire group is not working closely as a team. In addition, despite the fact that group members stated that they were willing to visit customers and to take other

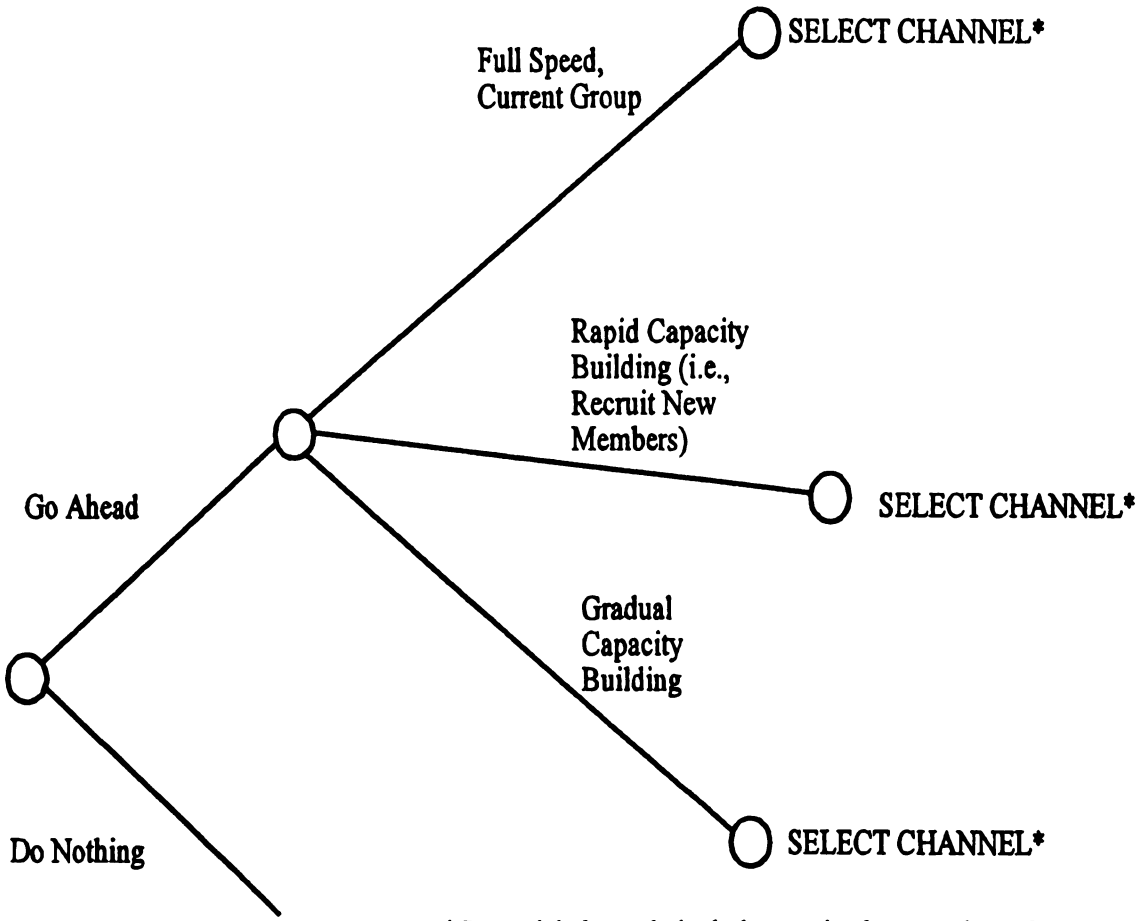
actions to identify and secure markets, most of them had not engaged in these activities. The fact that the growers had not demonstrated a desire to engage in targeted marketing indicates that this may be a barrier to the establishment of a new enterprise. (This relates to the lack of leadership referred to above.) The group has no strong, well-defined structure. The inadequate formal (and informal) organizational framework limits the flow of information, technological advances, innovations, and skills. This limitation could serve as a barrier to the group's success.

3.3.3 Recommendation

What course of action would you recommend for the group? Please provide justification for your answer, i.e, tell why your recommended action plan is the best alternative. Be sure to state your assumptions.

The case presents up to three interdependent decisions faced by the Grand Valley Chapter growers. These decisions are presented in decision tree format in Figure 3.3. The first, most basic decision is whether or not to go ahead with the project to jointly market organic produce. If the decision is made to do nothing, then no further choices need to be made. If the group decides to go ahead with the project, it is also faced with a second decision: *how* to proceed. They could move forward in three ways. The first strategy is to charge full speed ahead, forming a marketing cooperative comprised of the current group. A second strategy is to rapidly build capacity by recruiting and adding new members. If the group does not think that either of these aggressive strategies is warranted, they can choose to move forward by gradually building capacity. Under any of the three "go ahead" options, the group would have to select a distribution channel for their products. This is the third potential decision facing the group.

Figure 3.3: Strategic Decisions for the Grand Valley Chapter Growers



* Potential channels include: on-site farm markets, farmers' markets, distributors, retailers, restaurants, and processors.

Following is an evaluation of each of the three decisions facing the group. The basis for the analysis is the application of the resource inventory to the growers' overall situation. When using the case with students, the recommendations they make should refer to the positive aspects of the alternative(s) they select and suggest ways of overcoming the applicable negative aspects. The better answers will also refer to the negative aspects of the alternatives that are not chosen.

3.3.3.1 Decision: Go Ahead vs. Do Nothing

The first decision is whether or not to go ahead with the organic produce marketing cooperative. The decision to proceed would be based on the resources of the Grand Valley Chapter growers, which were discussed in detail above. Some of the more notable resources include the growers' organic certification and their preferred status in relation to the Sustainable Agriculture Action Group at Centralia State University. (Recall that this group requested that the university administration purchase more locally-grown, organic produce to serve in the dormitories.)

The positive and negative aspects of going forward will vary depending on the particular strategy that is selected. The benefits and disadvantages for each strategy option will be presented individually in the context of the second decision (i.e., how to proceed) in the next section. It is appropriate to examine the "do nothing" alternative here.

The positive aspects of the "do nothing" alternative include:

- Probably the soundest business decision, based on the preceding analysis of the resources of the grower group.
- Lowest risk alternative. Avoids the frustration and financial loss from the following potential outcomes: failure to get a viable venture off the ground, payment default by

a major customer, and group members not delivering the promised quality and/or quantity of produce.

- Does not require investments in time, effort, and money.

The negative aspects of the "do nothing" alternative include:

- Lowest potential returns.
- Requires "throwing in the towel" before making significant efforts to develop joint marketing of produce.
- Allows other growing regions to establish a foothold in local markets. This would make it more difficult to gain market share in the future.
- Fails to capitalize on potential synergies among group members.

The overall rating (or conclusion) for the "do nothing" alternative is that this is probably the best strategy choice for the group. Based on the lack of critical mass and absence of strategic resources that are substantially valuable and rare, not going ahead with the organic vegetable marketing cooperative could be easily justified.

3.3.3.2 Decision: How to Proceed

If the group would decide to go ahead with the organic produce marketing project, they would also have to decide how to proceed. The case describes two aggressive strategies: "full speed ahead" with the current group and "rapid capacity building" by recruiting new members. A more moderate approach is also described, i.e., "gradual capacity building."

3.3.3.2.1 Full Speed Ahead With Current Group

The positive aspects of the "full speed ahead" alternative include:

- High potential returns and growth.

- Shortest time-to-market.
- Most likely to enable group members to take advantage of synergies in marketing.

The negative aspects of the "full speed ahead" alternative include:

- High risk. A substantial investment in time and money is required, and the success of the venture is highly uncertain. There are many potential pitfalls that could prevent the success of such a venture. For example, 1) the group fails to come to a consensus on a strategic direction and disintegrates, 2) markets are not secured, and 3) a major customer defaults on his contract.
- The establishment of a major new enterprise does not seem justified by the material presented in the case. Further, the analysis of the group's resources suggests that they could not support a major new enterprise.

The overall rating (or conclusion) for the "full speed ahead" alternative is that it is a poor strategic choice. The growers currently involved simply do not produce enough volume of product to successfully implement such a project. Further, they lack certain other resources that are necessary for the successful launch of a value-added agricultural cooperative. The most notable resources they lack are leadership and member commitment.

3.3.3.2.2 Rapid Capacity Building by Recruiting New Members

The positive aspects of the "rapid capacity building" alternative include:

- High potential returns and growth.
- Best alternative for securing a major market (such as a large food processor) quickly, thus preempting competing growing regions.
- It may be possible to overcome the lack of critical mass by recruiting new members.

The negative aspects of the "rapid capacity building" alternative include:

- Time requirement. In addition to the time required for the "full speed ahead" alternative, time would also have to be invested to recruit new members. Recruiting enough new members may be difficult, due to the lack of leadership for the project.
- High risk. The potential pitfalls that apply to the "full speed ahead" alternative also apply to "rapid capacity building."
- The group faces an additional risk of not being able to recruit enough new members to attain critical mass. In the case, Jerry had a hard time scheduling interviews with any additional growers outside of the current group. This evidence seems to indicate that it would be difficult to recruit new members. Combined with the fact that none of the current members had demonstrated aggressive leadership for the project, recruitment efforts would likely be futile.
- Adding additional members could make it more difficult to reach a consensus about key aspects of strategy (e.g., products and target markets).

Like the prior alternative, "rapid capacity building" should be rated as a poor strategic alternative. It involves many of the same potential pitfalls as proceeding full speed ahead with the current group. The lack of critical mass could possibly be overcome through recruitment. Such an effort would probably not be successful, however, because there did not appear to be any additional growers interested in joining the group and none of the current members were excited about leading the project.

3.3.3.2.3 Gradual Capacity Building

The positive aspects of the "gradual capacity building" alternative include:

- Provides an opportunity for members to capitalize on potential synergies, such as marketing opportunities, improved production methods, and lower prices on inputs by purchasing in volume.
- If implemented effectively, the grower group would be better positioned (than currently) to establish a more formal organization like a cooperative two or three years hence.
- Higher potential returns than the "do nothing" alternative.
- Avoids major financial investment.
- Other growers may be attracted to the group when they become aware of how group members benefit from informal cooperation. This may help the group to attain critical mass.

The negative aspects of the "gradual capacity building" alternative include:

- Exposes members to possible failure of other members to perform as they promised.
- Development may not be fast enough to fully capitalize on market opportunities.
- Requires a significant investment of time and effort.
- Gradual approach would likely make it infeasible to establish a foothold in the more sophisticated channels (i.e., retailers, distributors, or processors) for the foreseeable future.

"Gradual capacity building" would appear to be the second best strategic alternative, after "do nothing." The group does not have an abundance of strategically valuable and rare resources, which would indicate that they should not go forward with the marketing

cooperative. At the same time, this alternative does not require a large financial investment. If the group would choose to gradually build capacity, they would basically only have to invest time and effort. Depending on how group members value these commodities, it may be worthwhile to select this alternative. It is possible, of course, that through diligence or good fortune the group could discover and secure a market that would provide a favorable strategic position.

3.3.3.3 Decision: Distribution Channel

The distribution channels featured in the case include on-site farm markets, farmers' markets, distributors, retailers, restaurants, and processors. An implication of the "do nothing" alternative is that no change is made in the group members' operations or marketing activities, which renders the selection of a distribution channel unnecessary. For this reason, the selection of a distribution channel only applies to the "go ahead" alternatives. (See Figure 3.3.) Further, some channels of distribution make more strategic sense when they are matched with specific "go ahead" alternatives. The decisions of how to proceed and which distribution channel to target are therefore interdependent.

Using *on-site farm markets* is the first distribution channel to be considered. As indicated in the case, this channel requires a relatively small capital investment. Furthermore, a farm market can be established somewhat quickly and easily, especially compared to getting started in the other channels. Because the "gradual capacity building" option embodies a low-risk, small investment approach, the establishment of an on-site farm market would match well with this strategy. Setting up a farm market could also make sense as a temporary measure, or stepping stone, for the group if it chooses to build capacity rapidly. In this case, the current group members could gain experience working together on one or more farm

markets while new members are recruited. This would allow the group members to share production and marketing knowledge, while building trust among each other. After sufficient additional participants are recruited, the group could expand into a higher-volume distribution channel, such as a distributor, retailers, or a processor.

To implement the farm market distribution alternative, the group must make a number of decisions. These include the number of farm markets to establish, the location of the farm market(s), how the market(s) would be staffed, and how to transport products from the individual growers to the farm market(s). In addition, the group would have to set up accounting and inventory control systems to assure that participants are properly credited when their products are sold and a pricing policy would have to be established.

The second distribution channel to be considered, *farmers' markets*, could potentially make sense with any of the three "go ahead" strategy alternatives. Generally speaking, distributing through farmers' markets requires an incrementally larger investment of time compared to on-site farm markets. The additional time required is the result of traveling to distantly located farmers' markets. Capital is also required to rent retail space at the market. The "gradual capacity building" option involves the lowest commitment of investment capital and time on behalf of the growers. It is an open issue, therefore, whether group members would be willing to make the necessary financial and time commitment to successfully become established at a farmers' market if they would choose to build capacity gradually. Farmers' markets would make more sense with the "full speed ahead" and "rapid capacity building" options. It should also be noted that the same issues (e.g., location, staffing, transportation, accounting and inventory control, and pricing) discussed above would also have to be addressed if the farmers' market distribution channel is selected.

Marketing through a *distributor* would probably not work if the group elects to build capacity gradually. The group, as currently composed, does not have sufficient volume to make them an attractive partner for a distributor. If they develop gradually, a substantial amount of time (perhaps years) would elapse before they could supply a sufficient volume for a distributor to want to do business with them. Even if the group would choose to build capacity rapidly, it would take at least a year to recruit enough members to make this distribution channel a viable alternative. Thus, this distribution channel would likely be a poor choice for the group. Given the group's limitations, if this distribution channel were selected, its strategic plan should specify that it is a goal to be achieved one or more years in the future. Further, someone would have to approach a distributor and negotiate a sales agreement. It would be difficult to accomplish this because of the lack of leadership of the group. Finally, the group would have to address the packaging and quality requirements of the distributor. With smaller growers, supplying produce of consistent size and quality could be problematic.

In some ways, the *food retailer* distribution channel is similar to distributors. Both require a relatively large volume of products. Both have particular packaging requirements and demand produce with consistent quality characteristics. Meeting these requirements would take substantial effort and commitment from the growers. For these reasons, marketing through retailers would probably be an especially poor channel choice if the group elects to build capacity gradually. It is also questionable whether the group could effectively market to retailers under the other two "go ahead" options.

Unlike the distributors option, however, the case introduces market segments within the retailer channel. This creates an exception to the conclusion stated above. That is, there is a subset of retailers that may be appropriate distribution channels for the group if they

decide to build capacity gradually. Specifically, marketing through smaller retailers (such as local natural foods cooperatives or independent produce markets) could be a viable option if the group decides to build capacity gradually. Marketing through one or more local natural foods cooperatives is in fact one of the best channel options for the group, regardless of which "go ahead" strategy they choose. This is because the natural food cooperatives are one of the only market segments mentioned in the case that has a specific demand for the products of the group. The next most promising segment of the retail distribution channel is the natural food retail chains. It is possible that this market segment could be successfully targeted if the group builds capacity gradually, but it would probably be a better channel choice if they selected one of the other "go ahead" options. It would probably require a substantial commitment (which is implied by the "full speed ahead" and "rapid capacity building" options) to effectively meet the volume needs of the natural food retail chains.

The other retail segments do not seem to be appropriate channels to target for the group, regardless of how they proceed with the project. The case mentions certain obstacles that block the group's achievement of distribution through the major chains, including large volume requirements, a need for a year-round supply, and centralized purchasing departments located out of state. A possible exception is that if the group were to successfully attain critical mass, they could benefit by convincing an owner of an independent retailer to carry their products. In order to market through any retailer, however, a member of the group would have to engage in personal selling to obtain a contract. Given the limited leadership and human capital resources of the group, this could prevent them from successfully achieving distribution through this channel.

It could be possible to market to *restaurants* if the group chose to build capacity gradually. This channel alternative would be more appropriate with one of the other "go ahead" options, however, because of the time required to service restaurant customers. Further, restaurants are another distribution channel that can be readily divided into segments. And as with the retailer channel, some segments of the restaurant channel would certainly be more promising for the grower group to pursue. Quick-service (i.e., fast-food) restaurants have menus that are incompatible with locally-grown, organic produce. This fact (along with their large volume and centralized purchasing departments) makes them an inappropriate distribution channel choice for the Grand Valley Chapter growers. Similarly, the centralized purchasing of the casual chains and their lack of demand for organic produce would deter the grower group from marketing through this channel.

Other types of restaurants, however, could be appropriate for the grower group to target as customers. Independent restaurants, especially upscale restaurants, could be promising distribution channels for the group. If this alternative is selected, growers would have to work out a distribution system that would accommodate the restaurants' needs for frequent deliveries of relatively small quantities. To secure restaurants as clients, personal selling (e.g., visiting potential clients and distributing samples) would be required. To effectively serve this market, group members would have to engage in extensive communication and cooperation with the applicable restaurant personnel. This may not be possible, due to the group members' attitudes toward participating in marketing activities. Another concern that must be addressed if this alternative would be chosen is maintaining the high quality standards demanded by upscale restaurants.

Another alternative is to market to *institutional food service* customers. Due to their price sensitivity, however, these customers in general would not be appropriate to pursue. A special exception is the food service department at Centralia State University. This potential customer shows a great deal of promise for the group. It is one of the few potential customers mentioned in the case who has a specific demand for the products the group has to offer. If someone in the group established a relationship with the leaders of the Sustainable Agriculture Action Group, then securing sales to the university would be facilitated. Specifically, if the grower group could sell the organization on their products, the organization's leaders may put pressure on the university's administration to become a regular customer. It should be noted that selling to the food service department at Centralia State University could be accomplished under any of the "go ahead" options.

The final channel alternative for the group is to market to a *processor*. Due to the small quantity of acreage farmed, this is not a viable alternative in the short run. It is possible, however, that if they successfully attained critical mass, the expanded group could effectively supply a processor. Supplying a processor could therefore be a valid medium-term (i.e., within two to three years) goal for the group, if they elect to rapidly build capacity by recruiting new members. This channel option would require the type of personal selling activities described in the discussion of retailers and restaurants above. It is doubtful that the group currently has the leadership to accomplish these activities. It is possible, though, that within a few years they could recruit a member with the necessary abilities. Finally, it should be noted that all processors are not the same. The processors who have brand names likely receive a higher price for their products, which would give them the ability to pay more for

ingredients. These processors may be better customers for the grower group, if they can meet the applicable quality standards.

3.4 Research Findings Conclusion

This essay was intended to serve two purposes. First, it presented a decision case that can be used in agribusiness teaching situations. Second, it provided an opportunity to apply the new resource inventory for product-oriented agriculture. Specifically, the resource inventory was applied to a case that involved a group of agricultural producers who were considering a joint marketing project to target new markets. This application allowed for a test of the inventory framework's workablility, as well as its usefulness in a specific strategic decision-making situation.

An exhaustive examination of the resources of the grower group in the case was accomplished by applying the new resource inventory framework for product-oriented agriculture. Specific information regarding the relevant resources was obtained by the author over the course of several months. Data was collected through interviews of key industry informants, face-to-face interviews with the growers involved, and by consulting secondary data sources. Information was obtained for each and every category of the resource inventory. This successful implementation demonstrates the workability of the inventory framework. The general conclusion from applying the inventory to the resources at the disposal of the growers, was that it was unlikely that they could achieve a sustainable competitive advantage. This conclusion can be stated with a great deal of confidence due to consideration of such a broad range of strategic resources. The resource inventory proved useful to this group of decision makers, therefore, because it helped them to avoid making a poor strategic decision, such as investing in a cooperative that had little chance for success.

The resource inventory was applied to a specific case involving a group of smaller, organic vegetable growers. The characteristics that made this case distinctive included its focus on organic (as opposed to conventional) agriculture, the products involved, the size of the group, and the size of their individual operations. The question may be asked of how generalizable the findings of this essay[75] are to other situations, e.g., conventional subsectors, different products, and larger operations. Historically, organic agriculture has not received as much scholarly attention as conventional agriculture. This has resulted in less information being published related to organic agriculture as compared to conventional agriculture. The fact that the inventory was workable for a subsector with less information available than is typical and was useful in strategy formulation would seem to indicate that it would also be workable and beneficial for other subsectors. Thus, the conclusions of the resource inventory's workablility and usefulness is likely generalizable to other subsectors. The resource inventory could be applied to different subsectors at a state level, e.g., conventionally-produced vegetables or dry beans in a certain state.

Finally, implementing the resource inventory (i.e., collecting the necessary data, organizing relevant information into appropriate categories, and analyzing the strategic worth of individual resources) gives the author the unique opportunity to comment on the administration of this type of study. In particular, the issue of how feasible it would be for extension personnel or perhaps an analyst for a state department of agriculture to implement the resource inventory is salient. In order for the resource inventory to be effectively implemented, the person ultimately responsible for the project must meet certain criteria. The

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[75] In particular, the findings regarding the usefulness and workability of the resource inventory for product-oriented agriculture.

analyst must have general knowledge of agriculture, as well as at least an intermediate background in business and economics. Knowledge in the following specific subject matter areas would contribute to one's effectiveness in implementing the inventory: marketing of differentiated products, strategic management, industrial organization economics, and institutional economics. The analyst responsible for the project also must have sufficient time to complete the data collection, analysis, and report writing. It should also be noted that the cooperation of participants of the subsector, namely the growers and key industry informants, was instrumental in implementing the resource inventory in this case. It would therefore be essential to obtain the cooperation and participation of the relevant subsector representatives to effectively implement the resource inventory.

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