AN ANALYSIS OF THE SHIITAKE MUSHROOM INDUSTRY AND A MARKETING PLAN FOR OREGON'S BEST MUSHROOMS

by

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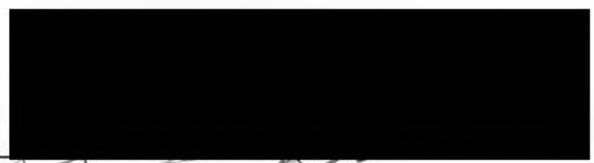
APPROVED: 

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Oregon's Best Mushrooms (OBM) is a regional marketing cooperative of shiitake mushroom growers that must change the way that it operates if it is to remain successful in the future. To succeed, OBM must prepare for the specialty mushroom industry's entrance into the mature stage of its industrial lifecycle and this stage's increased efficiency demands. OBM must also position itself in a place of relative calm among the five forces at work within its industry, specifically the forces of its suppliers' weak bargaining power, its buyers' substantial power to demand lower prices, the threat that new growers of shiitake mushrooms will force prices even lower, the threat that substitutes for its shiitake mushrooms will decrease demand for its product and the intensity of its rivalry with large, well financed, mushroom marketers. This requires that OBM realize and adjust to the trends shaping these forces so as to minimize their negative effects on OBM's profitability. To be effective, these adjustments must be made in accordance with a systematic marketing plan which establishes what OBM seeks to become, what its current situation is, what issues need to be addressed, what goals should be set, what steps need to be taken to accomplish these goals and how much all of this will cost. This thesis will analyze OBM and its industry and then develop a marketing plan which reflects this analysis.

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I. INTRODUCTION

Oregon's Best Mushrooms (OBM) is a regional marketing cooperative of shiitake mushroom growers which must change the way that it operates if it is to remain successful in the future. To succeed, OBM must prepare for the specialty mushroom industry's entrance into the mature stage of its industrial lifecycle and this stage's increased efficiency demands. OBM must also position itself in a place of relative calm among the five forces at work within its industry, specifically the forces of its suppliers' weak bargaining power, its buyers' substantial power to demand lower prices, the threat that new growers of shiitake mushrooms will force prices even lower, the threat that substitutes for its shiitake mushrooms will decrease demand for its product and the intensity of its rivalry with large, well financed, mushroom marketers. This requires that OBM realize and adjust to the trends shaping these forces so as to minimize their negative effects on profitability. To be effective, these adjustments must be made in accordance with a systematic marketing plan which establishes what OBM seeks to become, what its current situation is, what issues need to be addressed, what goals should be set, what steps need to be taken to accomplish these goals and how much all of this will cost.

This thesis will first analyze the industry that OBM operates within by determining the lifecycle stage of the specialty mushroom industry and by analyzing the market trends which are shaping the Five Forces of this industry. This thesis then uses this analysis to construct a marketing plan which develops concrete steps OBM can execute in order to accomplish goals necessary for its success and which move it to a shielded place among the Five Forces of its industry.

II. Industrial Lifecycle

The shiitake mushroom production industry is presently nearing the end of its growth phase in the United States. The total number of producers decreased from 233 in 1988 to 178 in 1996 while at the same time the total volume of shiitake grown increased from 1.9 million

pounds to 6.4 million pounds (USDA 1993, 1997). These two statistics show that shiitake producers are generally becoming larger and fewer. Specifically, the average annual sales volume for shiitake growers in the US grew from 8,223 pounds in 1988 to 36,376 pounds in 1996 which meant that the average annual value of sales of these farmers grew from $36,429 to $123,562 over that same time period (USDA 1993, 1997). Although buyers are demanding more shiitake mushrooms, they are forcing growers to achieve economies of scale in order to survive since the price that consumers are willing to pay for shiitake mushrooms has declined 23 percent since 1988 (USDA 1993, 1997).[1]

Despite these trends, there are still people entering the shiitake production business on a small scale (Donoghue 1997). However, farms must make considerable investments into substrate block (the blocks from which the mushrooms are grown) making equipment if they are to make any significant level of profit (Pickett 1998). This is true because although the total volume of mushroom production increased more than 330% since 1988 (USDA 1993, 1997), the total value of the US shiitake harvest for growers has stagnated at around $20 million (USDA 1993-1997).[2] This trend increases competition within the industry since firms are forced to become larger and more efficient in order to survive.[3] The ability of the Chinese to land lesser quality shiitake mushrooms in San Francisco at approximately the same price that farmers need to break even (Donoghue 1997), also intensifies this competition since it effectively puts a ceiling on the price that farmers can charge for their

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[1] For a summary of USDA statistics concerning the shiitake mushroom industry see Appendix A.

[2] In Oregon and Washington, the value of shittake sales for growers is approximately $564,000. This assumes: 1990 per capita figures for mushroom production of 1.98 pounds per person, plus consumption rates 9% higher than average for the western states (Moss 1994). This number was multiplied by the combined population of Oregon (3,243,000) (US Census 1998) and Washington (5,610,000) (US Census 1998). This sum was then multiplied by the 1996-1997 shiitake volume divided by total mushroom volume: 0.008685732. This number was then multiplied by the average sales price of shiitake in 1996-1997: $3.40 (USDA 1997).

[3] They must become larger because they are getting increasingly less profit per pound. Therefore, they must produce more in order to gain enough total profit to survive which is accomplished through more efficient production to increase their per pound profit.

product (Donovan 1997). This tendency toward oversupply within the industry makes it difficult for growers to make substantial profits.

If small growers of shiitake mushrooms are to succeed in this growing industry they must continue to gain efficiencies of scale which permit them to make reasonable profits despite low market prices for shiitake mushrooms. In addition, growers must develop core competencies in quality, efficiency and customer responsiveness in order to obtain sustainable competitive advantages which will enable them to perform better than their competitors and thereby survive the increased competition of the mature phase of the shiitake mushroom industry.

III. Five Forces Market Analysis

A. Supplier Trends and Bargaining Power

In the shiitake growing industry, there are only a few inputs which go into the production of the substrate blocks from which the mushrooms 'fruit.' These inputs are sawdust, grain, spawn and labor.

The suppliers of non-oak, hardwood sawdust do not have a significant amount of market power to extract higher prices for the sawdust that they supply. This is because there is no significant differentiation of the hardwood sawdust provided by various mills, switching costs for buyers of sawdust are small and suppliers are numerous relative to buyers. This input is obtained from mills within the state, which produce it primarily as a by-product of the wood milling process (Dickerson 1998). There are several sources of supply for this input, and there is lots of alder sawdust available to growers. This supply picture is expected to remain the same over the next five years although there may be a slight tightening in supply from larger suppliers due to regulations which require lumber manufacturers to decrease the amount of airborne particulates in their mills, forcing them to immediately dispose of it via burning it (Dickerson 1998). The price of the material will probably never significantly increase since it is primarily a waste product (Dickerson 1998).

The bargaining power of oak sawdust suppliers, the preferable wood for growing shiitake, is remarkably higher. There are no suppliers who sell a significant volume of oak hardwood in the Pacific Northwest or Oregon (Dickerson 1998) and only a few sources of oak sawdust are available within a reasonable distance (Pickett 1998). These sources have agreements with other growers of shiitake that make them first in line for any available sawdust (Pickett 1998). Should these growers require all the sawdust, the other growers, including OBM farms, would be forced to switch to less productive alder sawdust. This relatively ample supply of alder sawdust serves to limit the price that oak sawdust suppliers can demand since growers can switch to the alder if necessary.

The next ingredient that shiitake farmers must buy from suppliers is grains and corn to mix with the sawdust to make the substrate blocks. The world markets dictate the price of these commodities and the real price of these commodities is projected to decline slightly in real terms through 2005 (USDA 1997). Since these grains are readily available at market prices from numerous sources and buyers can switch with ease, suppliers and growers are equals within the marketplace. Either party can not demand prices significantly different than those dictated by the global market.

Shiitake spawn (seed) is another input that farmers must buy from suppliers. Typically, the mushroom farmer buys this spawn as small bags of grain which are thoroughly covered with the shiitake mushroom spawn and subsequently mixed into the mushroom substrate. This shiitake spawn can be obtained from any number of small regional providers or from large national providers (Pickett 1998). Many of the large shiitake growers make their own spawn, so the primary market of those who do sell shiitake spawn is smaller growers (Spear 1998). Suppliers of shiitake spawn have little bargaining power, since there are many suppliers of spawn from whom potential buyers can purchase. Some suppliers will customize the mushroom spawn for the grower's particular needs. (Pickett 1998). By doing so, suppliers build up switching costs that help prevent buyers from purchasing their spawn

elsewhere. Additionally, these spawn suppliers are selling to a very specific market that can't afford to pay much for the spawn and still make a profit so if the suppliers want to stay in business they must keep their prices reasonable. However, even if a farmer faced a situation where he could not buy any spawn at a reasonable price he could forward integrate by making his own spawn with about a ten thousand dollar investment (Spear 1998) and some trial and error. Thus, the power of the spawn producer is rather limited and is similar to that of the farmer himself.

The last major input in shiitake mushroom production is labor. Since mushroom growing tasks are not specialized, the price that the farmer must charge is largely a function of the minimum wage set by the government. This wage is currently at $6.00 an hour, but it will move up to $6.50 an hour by January of 1999 (State of Oregon 1998).

In looking at the entire supply picture, suppliers to shiitake farmers exert very little direct power over mushroom farmers. The prices set for the inputs are either outside the control of the supplier or buyer (as in the grain prices and labor wages) or the supplier has very minimal power to arbitrarily increase its prices (as in the price of sawdust or spawn).

B. Buyer Trends and Bargaining Power

The power that buyers wield in the shiitake industry is significant. The predominant buyers of fresh shiitake are the restaurants/foodservice industry (65-70%) and retail grocery outlets (30-35%) (Donovan 1997). This retail produce demand is itself an aggregate of demands/tastes of individual mushroom consumers. Another potential source of significant demand for US shiitake sellers is Japan. Japan is the world's largest buyer of mushrooms, importing over $300 million worth of mushrooms in 1995 (the US imported $9 million) (FAO 1997), even though they do not currently buy them from North America in significant amounts.

1. Restaurant Buyers

a. Trends Which Shape Buyers' Bargaining Power:

i. Competition with Grocery Stores

Consumers spend more money on prepared food than they have in the past and analysts expect this trend to continue for the intermediate future. In a study that they prepared for the Chain Operating Exchange in March 1997, McKenzie and Co. predicted that the foodservice industry would grow "by 1.6 percent for the next 8 years, climbing beyond $800 billion in 2005 . . . [and] restaurants would own $80 billion of the $100 billion growth in foodservice sales" (Hayes 1997). The restaurant industry is encouraged that it will receive 80% of the growth in foodservice sales, since analysts predict that the low margin supermarkets will be a potent threat to restaurants and others offering take-out and delivery service (Foods and Nonalcoholic Beverages 1996). Though a potent threat, this study suggests that the restaurant industry should grow very well in the future.

ii. Convenience and Affluence

A primary impetus for the general increase in sales of prepared food is due to growth in the affluent and older population of the US, "inasmuch as 38 percent will be age 45 or older, a group that spends 'twice as much on food purchases'" (Hayes 1997). Also significantly contributing to this increase in sales is the fact that married women no longer have as much time to prepare food at home since they are working outside the home in increasing numbers (Restaurants 1997). In 1995, the percentage of married women who worked outside the home was 59 percent (Restaurants 1997) and this percentage is projected to increase to 64 percent by 2000 (Restaurants 1997). This will mean increased consumption of restaurant food as families have less time to prepare it and more money to spend (Foods and Nonalcoholic Beverages 1996). More mushroom sales will come from the foodservice sector since this market is expected to grow significantly in the future.

iii. Demand for Value

Families have more money to spend, but they are not willing to spend it on prepared food. This is because the restaurant industry is one of the most price sensitive industries

(Papiernik 1997) and as Richard K Herzer, CEO of IHOP Corp states, although "the consumer . . . is looking for good food at a fair value . . . a lot of it really comes down to the price point for your type of restaurant" (Papiernik 1997). Consumers want high quality, convenient, prepared food but they will not pay a premium for it. This trend should increase the sales of shiitake mushrooms since restaurants use specialty mushrooms because they "offer both an upscale image and a certain type of value" (Lang 1997 p.76).

The consumers' desire for good quality, low-cost, and prepared food has forced restaurant owners to require more from their suppliers, including their produce suppliers. This is demonstrated by the fact that more than two-thirds of all the new products in fresh produce are in the value added, or fresh-cut, category (Selection Explosion 1996). These products are such a large portion of the new products developed because foodservice operators demand products that decrease the amount of labor they must spend on preparing produce. This is because labor expenses are one of the largest components of their costs, comprising between 28.8% to 34.4% of sales (Restaurants 1997) and because, until about 2005, they face a labor shortage of the 16-to-24 year old workers that comprise "the primary labor pool for food service" (Restaurants 1997).

iv. Demand for Variety

In tandem with consumers' demand for low price is their demand for more flavor variety. This should increase shiitake consumption since consumers' increased "demand for exotic ingredients, new flavors and alternatives to traditional fare have revived interest in mushrooms, particularly wild or specialty mushrooms" (Mushroom Madness 1997), making them the number one trendy food according to a National Restaurant Association chef survey cited in the April 1997 issue of Frozen Food Digest. And since shiitake are one of the primary mushrooms in the specialty mushroom category its sales should increase.

Also reflective of consumer's demand for variety is the fact that restaurant chains are introducing new menu items at an "unprecedented pace," with over 913 new product

introductions from the over 180 top restaurant chains in the last half of 1996 (Lang 1997 p.76). An industry consultant says that this is because an increase in flavorings is a boost to value and a boost to variety (Lang 1997 p.76). These 'boosts' are necessary for restaurants to remain competitive, since restaurants must satisfy a constantly evolving customer base while simultaneously positioning themselves to cope with changing competition (Lang 1997 p.76).

v. Growth of Ethnic Populations and Cuisine

The trend toward increased consumption of ethnic flavored food is a reflection of the changing ethnicity in the US and the result of mainstream consumers' desire for new tastes. This should increase the sales of shiitake mushrooms since they are an "integral" part of Japanese food (U.S. Department of Commerce 1996) will become increasingly popular in the future as the Asian population within the US increases.

The changing ethnicity of America changes the types of food Americans eat because when a sizable portion of some ethnic group arrives in an area they open restaurants for themselves that may attract customers outside their circle (Sanson 1996). These restaurants service the demand of their respective nationalities and the demand of others seeking food that is different. This implies that the sales of Asian food will increase in the future since "the American population of non-Hispanic whites will grow modestly-about 5%- between [1996] and 2005, while the . . . Asian-American population . . . will rise by 49%" (Foods and Nonalcoholic Beverages 1996). This statistic bodes well for the future growth of Japanese cuisine since one can assume that the Japanese-American population will also increase somewhat with the general Asian population.[4] This will result in more Japanese restaurants to service the demand for traditional Japanese food and increase the consumption of shiitake mushrooms since they play an "integral" role in this cuisine.

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[4] Especially since Japanese Americans comprise 12.3% of the Asian American community (U.S. Bureau of the Census 1993), the Japanese American population has historically had above average growth rates (18.3% between 1980 and 1990) (U.S. Bureau of the Census 1995) and since most of this growth is not dependent upon immigration trends (67.6% of the Japanese American population born before 1990 was born in the U.S.) (U.S. Bureau of the Census 1993).

Shiitake mushroom sales will also increase due to the rise in Asian inspired dishes in mainstream restaurants. Though the restaurants that serve exclusively Asian faire is only .3% of the entire restaurant industry (Lowe 1997), there is no doubt that patrons have more options from the Orient like never before (Lang 1997 p.67). This is because "many foodservice operators . . . have reinterpreted the culinary . . . ingredients of some or all of these [Asian] countries into a highly personal cooking style that is often referred to as 'fusion', 'pan-Asian', or 'Pacific Rim' cuisine" (Lang 1997 p.67). This trend of combining Mediterranean, Pacific Rim and Japanese cuisine is widespread and growing. It is taking hold in New York, Los Angeles, and San Francisco (Paskevich 1997) and has been characterized as "an Oriental groundswell affecting American menus" which "has slowly but surely evolved in recent years" (Matuszewski 1997). This trend can only increase the consumption of the inherently Asian shiitake mushroom.

vi. Increased Beef Consumption

The restaurant industry is also seeing significant growth in beefsteak consumption. Three major steakhouse chains saw growth in the 30% range during fiscal year 1996 with combined sales near $1.6 billion in a segment with total sales of approximately $7.4 billion (Lowe 1997). Although the fact that "meat is one of the most frequently ordered dinner entrees in restaurants" (Restaurants 1997) seems inconsistent with consumers' professed desire for healthy food, one restauranteur hypothesizes that people demand steak as a special treat, rarely eat at home, since "when people do have it, they go for the best, and the best cannot be bought in the . . . supermarket" (Reed 1997). This interpretation is consistent with diners overarching desire for variety among the food that they eat.

The growth of the restaurant industry's steak segment is good for mushroom sales because mushrooms are typically a side dish offered with steaks. The Outback, the largest chain of steakhouses in the United States (Lowe 1997) and Ruth's Chris Steak House, voted best restaurant in the United States by the Robb Report in June 1997 (Press Release 1997),

both serve either sautéed mushrooms as a side vegetable dish (Outback Menu 1997) or stuffed mushrooms as an appetizer (Ruth's Chris Menu 1997). Specialty mushrooms are also used by Mike Hannah, executive chef for Paragon Steakhouses, a chain of more than 80 upscale beef-oriented restaurants, to add value to less expensive items by making them less boring (Lang 1997 p.76). To bring in new business and encourage repeat visits, Paragon introduced Sliced Roast Sirloin with Wild Mushrooms (Lang 1997 p.76). It's "wild-mushroom garniture and the sophisticated sauce and presentation made this a very upscale-sounding - and successful dish" (Lang 1997 p.76). This anecdote shows how a restauranteur could use specialty mushrooms to provide value for her customers. As steak sales continue to increase, mushroom sales should continue to rise as well since they are complimentary products.

b. Restaurant Buyers' Bargaining Power

Restaurants have considerable power over shiitake mushroom growers since restaurant's profits are low and growers supply an undifferentiated product. After paying all their costs, restaurants only make about seven cents of pretax profit out of every dollar in sales (Restaurants 1997). Such "low profits . . . create great incentive to lower . . . purchasing costs" (Porter 1979), and thus increase the bargaining power of restaurants to demand lower prices from its suppliers. This bargaining power is further strengthened by the fact that shiitake growers provide a product that does not differ substantially between the 178 suppliers of shiitake in this nation (USDA 1997). Mushroom buyers, "sure that they can always find alternative suppliers" are able to "play one company against another" (Porter 1979) in order to weaken the bargaining power of suppliers.

2. Retail Produce Buyers

a. Trends Which Shape Produce Buyers' Bargaining Power

Currently within supermarkets there are several trends that are driving the growth of fresh produce sales generally and mushrooms specifically. These are the increased demand

for healthy fare, the increased demand for convenient food sources, the importance of produce to supermarket profits and the tendency for the produce department to be the pivotal section in determining a shopper's loyalty.

i. Health Concerns

A significant percentage of the US population is clearly not eating well, but as the population grows older they demand a more nutritious diet. The poor eating habits of the US consumer is illustrated by the fact that one third of adults in the U.S. are overweight by 11 pounds on average (Japenga 1997) and twenty-five percent of adolescents are overweight by 15 to 20 pounds (Kuhn 1996). The bottom line is that only 31% of the American diet is composed of better-for-you foods (St. George 1996) and only twelve percent of consumers have a diet that approximates the USDA's Food Guide Pyramid (Japenga 1997).

In contrast with this dismal picture of the nation's health there is growing evidence that there is a trend toward healthful eating. Ninety-seven percent of all consumers say that they are trying to change to a healthier diet (Japenga 1997). In addition, the maturing of the baby boomer population bodes well for future sales of healthful foods. As the boomers age, the over-65 population will double by 2050 (Blalock 1996). This is positive for nutritious food sales because age is the greatest determining factor (St. George 1996) in the consumption of healthful foods, since older consumers are frequently addressing diet-related health problems and are more willing to make compromises for health benefits (Thayer 1996). Overall this means that consumers are increasingly demanding "a more nutritional diet" (Hennessy 1996), a trend that is expected to "continue to lift produce sales" (Dowdell 1996).

This increase in demand for nutritional foods should increase the demand for shiitake mushrooms as well since consumers "appreciate [mushrooms'] lack of fat, calories and sodium" (Rice 1996). However, shiitake mushrooms, rather than merely lacking negative health characteristics, actually promote health. Shiitake are up to 18% protein, 15% fiber and

provide 7.8mg of thiamin, 4.9 mg of riboflavin and 54.9 mg of niacin per 100 grams of mushroom[5] (Mushroom Company 1994). In addition, an extract of the shiitake mushroom is an approved anti-cancer drug in Japan and some studies indicate that it could help lower blood pressure (Mushroom Company 1994). Shiitake mushrooms fit well within consumers' growing concern about nutrition and Karen Caplan, President of the California specialty food company Frieda's (Rice 1996), says that consumers are beginning to realize the positive health characteristics of mushrooms and are including them into their diet.

ii. Demand for Convenience

Another trend affecting the produce industry is a switch from low-value, bulk produce to higher-value, pre-packed and/or prepared produce. The growth in sales of pre-packed salads is indicative of this trend. These salads grew from 6.6% to 8.6% of produce department sales in 1996 alone (Donegan 1996). In addition, 61% of shoppers said they "would purchase vegetables more frequently if the items were more easy to eat or prepare" (Mogelonsky 1995). Produce consumers want more convenient produce.

Supermarkets are fiercely competing against foodservice companies, restaurants and other supermarkets for a share of the consumer's total food dollar and "produce is emerging as the weapon of choice in [this] escalating war for consumers" (Hennessy 1996). This is because the supermarket's produce department currently sells 70% of all fresh produce (Hennessy 1996). Therefore, supermarkets have "an edge over the foodservice industry . . . [which they] need to protect . . . and build on . . ." (Hennessy 1996) if they are going to prevent the foodservice industry from increasing its share of the total food dollar from 50% to 65% by 2000 (Beyer 1996).

To help keep people buying fresh produce through their stores, supermarkets "are now attracting shoppers who want convenient produce by selling pre-washed, pre-cut fresh

[5] All measurements are on a dry weight basis.

vegetables" (Mogelonsky 1995) to consumers who want more and more fresh food, but "have less and less time to prepare it" (Hennessy 1996). Some mushroom growers are also capitalizing on this trend and increasing their sales by placing mushrooms in single serving, pre-packed containers. People in the industry note that a major factor in the recent popularity of mushrooms has been "the ability of the major mushroom processors to package even strange-looking varieties in easy-to-handle containers with simple preparation and cooking instructions" (Puzo 1996). This makes it easier for people to decide to purchase mushrooms.

iii. Profitability of Produce Departments

The produce departments are especially important for the supermarket chains because they are a main profit center for their stores. Produce is enjoying steadily rising weekly sales, high margins (33%), and growing transaction sizes (Donegan 1996) while many of the other departments face notoriously low profits.[6] Produce contributes 18% to total profits, which is a "particularly strong performance given the fact that produce contributes 10% of store sales" (Donegan 1996). This trend is expected to continue as the growth of the produce sections is slated to "outstrip all other major categories of the food store, with the exception of the deli (bakery) department" (King 1994). Produce will continue to play a key role in generating profits for grocery firms and those who ignore this will do so at their own peril.

Shiitake mushrooms are especially popular in light of stores' focus on produce because specialty mushrooms are especially profitable. Mushrooms are fourth in the sales of 19 salad related vegetables (McClure 1992), do 125% better that the average of all vegetables on the wet rack on a dollar-per-square-foot basis (McClure 1990), have been the fastest growing food item on Earth over the last 30 years in terms of consumption (McClure 1995), and "the increase in mushroom sales is sparking sales of other produce" in supermarkets (Mejia 1991). Additionally, "packaged mushrooms contributed 8 percent of the sales revenues generated by the top twenty produce items in grocery chains" (Moss December

[6] Margins in the supermarket industry are 1.2% on average (Falstad 1997).

1994). Lastly, specialty mushrooms command a premium price, for although specialty mushroom "tonnage is only 1% of the total mushroom production, it accounts for more than 5% of dollar sales" (McClure 1990). Mushrooms are a definite focal point of produce departments because they are making money for the grocery stores.

iv. Diverse Produce Promotes Store Loyalty

The final reason why supermarkets focus on produce is its crucial role in gaining consumer loyalty. Produce Marketing Association "surveys show the reason people choose a supermarket is the produce section . . . because at every supermarket, the brand names for other items do not change" (Eiser 1996). This in turn causes supermarkets to move "toward competitive differentiation in produce," according to De La Cruz (Hennessy 1996). This differentiation has led supermarkets to increase the variety of the produce that they carry since," . . .independent studies and surveys [of at least one chain] show that 'customers want more variety' in their produce selections" (Hennessy 1996). This demand has caused stores to make better use of shelving to display a larger variety of produce (Hennessy 1996) and will have driven the number of produce items up to an estimated 450 in 1996 from around 225 in 1980 (King 1994). Produce managers are working very hard to keep up with the large variety of goods that shoppers demand.

Mushrooms play a key role in this arena because they increase the perceived variety of the retailer's produce section. Harold Alston, vice president of produce for the Shop & Stop chain of stores, states that its research has shown that shoppers use pepper and mushroom sections to gauge the variety of the produce department (Mejia 1991). Clearly mushrooms are good for produce and the especially good aspect of this for shiitake mushroom growers is that the key to mushroom sales growth for stores is yet again, variety (Mejia 1991). This has been revealed in research by the US Marketing Services for the National Mushroom Council which shows that greater mushroom sales can be achieved by increasing the varieties of mushrooms sold (McClure 1990). Therefore, "specialty

mushrooms are playing a significant and growing role in the glamour and profitability of supermarket mushroom departments" (McClure 1990), since they increase the variety of the mushroom department.

The specialty mushroom category, of which shiitakes are a primary component, are crucial to the success of a store's mushroom section, which can be a key to greater sales in the high-profit produce sections of supermarkets.

b. Produce Buyers' Bargaining Power

Store produce buyers are very powerful in their ability to demand lower prices from their suppliers because overall profit margins are slim for supermarkets and the stores own the distribution channels from which consumers purchase the suppliers' produce. In addition, the stores buy their produce in large volumes. Supermarkets compete in a very competitive market and have average profit margins of about 1.2% (Falstad 1997). This forces suppliers to decrease the costs that they charge for their goods. Stores have significant power to demand this because they are the only place where consumers buy produce in significant volumes; low-volume farmers markets and roadside produce stands are the only other alternatives. Not only do supermarkets control access to the consumer, but they also buy in large volumes. This gives supermarkets considerable leverage with a firm who relies on its business with the store.

3. Factors Shaping Both Restaurant and Retail Produce Suppliers

a. Hazard Analysis and Critical Control Points (HACCP)

Produce suppliers, distributors, retailers and processors have to do more to face a growing concern over the safety of the produce that they are selling. This concern is due to the large number of food poisoning events that occur each year in the United States. According to the Centers for Disease Control (CDC) over 80 million estimated cases of food poisoning occur in the United States every year, affecting one in every 2.5 Americans (Steinauer 1997). The U.S. Department of Agriculture, the Food and Drug Administration,

the produce industry and consumers are beginning to view produce as a route for harmful pathogens and pesticides to enter our food supply (Hennessy 1997). This widely held view is not based on pure speculation. In a small study done by the CDC in 1996, 130 of 455 confirmed cases of E. coli came from produce (Hennessy 1997). In addition, the fresh cut produce that supermarkets and restaurants demand are at higher risk of contamination than their raw counterparts (Hennessy 1997). Food poisoning events linked to the consumption of produce is a serious problem facing the industry.

The food processing industry is combating the problem of microbiological contamination of produce via a solution called Hazard Analysis of Critical Control Points or HACCP. The goal of HACCP "is to produce a safe product every time, to demonstrate that the process is safe, . . . and to provide and promote confidence in the product (Caswell 1996)." This goal is accomplished by creating a process through which contamination hazards are identified, safety boundaries are established and monitored, corrective action is specified, records are kept and the effectiveness of the process is verified (FDA 1996). By following an HACCP plan, food processors should be able to prevent their products from being contaminated.

HACCP plans are quickly becoming a requirement that supermarkets and restaurants place in their contracts with produce suppliers. Throughout the industry, many produce suppliers need a HACCP plan for their purchasing contracts with major retailers (Hennessy 1997). These retailers require HACCP plans because they realize that the produce industry is just as vulnerable to food scares as meat and other foods (Complicating Matters 1997). The result is that food safety is driving a lot of decisions that produce executives are making today (Complicating Matters 1997). Stores are concerned about damaged reputations and direct legal liability should a food poisoning be linked to products from their store (Hennessy 1997). Therefore, they will use their buyer specifications to force suppliers to use HACCP

plans to reduce their own liability should customers be sickened by the food they sell (Hennessy 1997).

Though supermarkets are the primary businesses demanding HACCP plans currently, the restaurant industry is not far behind. In fact, the realization that the food which "moves up the supply chain could place the restaurant operators at greater risk for pathogens . . . has prompted forward thinking chains, such as McDonalds, Marriott Management Services and Taco Bell, to establish system wide HACCP programs" (Rubenstein 1997). Restaurants will soon require HACCP plans from all parties wishing to sell them processed foods.

In addition to the food industry's movement toward requiring HACCP plans from suppliers, the federal government is also constructing regulations which would mandate that all food processing companies adopt HACCP program by the year 2000 (Steinauer 1997). This makes certain the necessity of HACCP plans for food processors and the timeframe in which to establish one. This mandate was recently strengthened by President Clinton's unveiling of a $43.2 million food safety plan that earmarked a significant amount for the expansion of FDA HACCP programs (Allen 1997). The government is making it clear that HACCP plans will be a prerequisite for participation in the nation's processed food market in the future.

Shiitake growers must have HACCP plans in place in the future if they are to supply pre-cut and packaged produce to retail and foodservice markets. Produce buyers will require them because they will want assurance that the produce that the produce they receive will not harm their consumers or their reputation.

b. Organic Products

In a trend related to consumers' desire for more healthy products, the consumption of organic foods over the last seven years has increased 250% (Sugarman 1997) and is expected to grow into a $10 billion market in the next decade (Groves 1997). In addition, of the 17,000 new products introduced in the grocery industry in 1995, between 4,000 and 5,000 were in

the natural products category. All together, the natural foods segment could grow from its current 3% of the grocery market to eventually 10 or 12% of that market (Gattuso 1997). Other factors driving this demand besides consumers' concern about the link between diet and health are their heightened awareness of the impact agriculture has on water quality and pesticide drift and the improved quality of organic goods (Harnett 1997).

Chefs are also driving this trend toward organic produce since they perceive it to be of higher quality. A recent survey of 150 top chefs revealed that more than 75% of chefs actively seek out organically grown ingredients and over 90% seek out regional farmers and suppliers to ensure fresher produce (Food and Agriculture 1997). Essentially, "fine restaurants and hotels . . . buy organic simply because it tastes better and stays fresher longer" (Kasrel 1997).

Shiitake producers who provide organic products to their buyers will differentiate themselves from their competition by creating the perception that their mushrooms are better than those produced by conventional methods. In a highly competitive environment this may be necessary to insulate one's firm from competition with other growers.

4. Trends Shaping the Japanese Shiitake Market

The Japanese market for mushrooms is very large. In addition, trends in produce imports, domestic produce production, regional free trade, and produce quality demands, make Japan a likely candidate for mushroom imports from the U.S.

a. Market Size

Japan is "the world's largest net importer of farm and food products" (MacKnight 1996) with per capita spending on food and beverages equal to $3000 (Jacobs 1996). This meant that Japan imported almost $4.3 billion of fruit, vegetables and nuts in 1994, or roughly 57% of all such imports to the 13 leading Asian countries (USDA ERS 1996). Not only is Japan the largest market, "it is also the fastest growing" (Jacobs 1996) and this has caused annual US produce and processed food exports to Japan to rise "faster (41.8%) than

all other Japan-bound [US] exports combined (32%)" (Jacobs 1996). Clearly the imported produce market in Japan is doing well and shiitake mushrooms are riding this trend.

b. Imports

In 1995, Japan imported a total of $300 million worth of mushrooms, far more than any other country in the world (FAO 1997). This was the cumulative result of many years of growth, the fastest of which occurred during the five year period between 1988 and 1992, when mushroom[7] imports increased 390.7% (Klotzbach 1994/1995). Recently this rate of growth has tapered off a bit, but still in 1994 "imports of Shiitake mushrooms rose 56% in volume to 24,320 MT, and 21% in value to $97.3 million" (Galinsky 1995). Shiitake mushroom imports are growing fast compared to the growth of shiitake sales in the US market which is currently only growing about 6% per year and is nearly five times the size of total US production of shiitake mushrooms.[8] This rapid and upward trend in shiitake mushroom imports is not a passing trend but is based upon lasting fundamental changes in the Japanese agricultural sector, trade markets, and consumer preferences and the "integral part" (U.S. Department of Commerce 1996) which shiitake mushrooms play in Japanese cuisine.

c. Domestic Produce Production

Japan's current domestic production of fresh produce provides less and less produce for Japanese consumers because there are fewer farmers producing fewer fruits and vegetables. According to the US Agricultural Trade Office in Tokyo, "Japanese domestic production of both fruit and vegetables is shrinking year by year, due to an aging farm population, a lack of young people willing to go into farming, and alternative demands on Japan's tiny land base" (U.S. Department of Commerce 1996). This tendency towards a gradual decline in production of fresh produce is expected to get much worse in the future, in fact according to "a confidential [US] government report" (Watanabe A1), "it is considered

[7] "Primarily shiitake" (Klotzbach 1994/1995).
[8] Derived from USDA figures in Appendix A.

an article of faith among Japanese leaders in the fresh fruit and vegetable industry that the Japanese fresh-produce sector is on the verge of a cataclysmic fall in production" (Watanabe 1996). The single most important reason that this risk exists is that Japan is facing an "acute farm labor shortage" (U.S. Department of Commerce 1996). The average age of the Japanese farmer "has risen (since 1960) from 44 to 60 years" (Rowley 1997) due to the fact that fewer than 2,000 or so young Japanese are entering farming every year (U.S. Department of Commerce 1996). It is not physically possible for Japanese farmers to satisfy the food demands of their people. Additionally, what they do provide is typically more expensive than what retailers can obtain from other sources outside Japan.

d. Effects of Free Trade

Free trade is hastening the decline of domestic farming in Japan. "Japanese agriculture, with its high production costs, faces a severe challenge now that it is forced to compete with South East Asian nations" (Government Aid 1995). With cheaper labor in such locations as China and Vietnam, Japanese agribusinessmen find "lucrative opportunities in supplying the . . . shiitake mushrooms and other necessities of the Japanese diet" (Aging Farmers 1995) with produce from these countries. By locating in these nearby countries, Japanese businesses provide the same produce to Japanese consumers at lower prices since they pay lower labor costs. This relocation trend will only continue, especially in light of Japan's recent free trade agreements. In 1995, Japan stated that it was going to invest 1,110 billion yen in the country's agricultural sector to help open this "market to foreign products as agreed under GATT" (Government Aid 1995) and this was expected "to accelerate the already sharp decline in the number of people employed in agriculture" (Government Aid 1995). Japan's future food supply will be cheaper and come primarily from other countries. Open markets have already affected Japan's shiitake mushroom industry dramatically. The number of Japan's "shiitake mushroom farmers . . . has declined over 25% from 9,900 in 1987 to 7,300 by 1994" (Aging Farmers 1995). Increasingly, labor intensive crops such as

shiitake mushrooms (Government Aid 1995) are being grown overseas where production is cheaper and more consistent (Aging Farmers 1995) thereby meeting the Japanese consumer's demands for value and year round availability.

e. Demand for Quality

The Japanese food shopper is no longer demanding the presumably higher quality domestic food no matter what the cost. This shift in demand has been largely motivated by the recent recession in Japan. According to the American Chamber of Commerce in Japan, "the rarely admitted bottom line . . . is simply that imports allow the Japanese to eat very well indeed at all levels of society. Without imports, basic survival would be monotonous but still possible" (Jacobs 1996).

One very important aspect of eating well for Japanese consumers is eating a large number of vegetables all the time. One reason US imports of vegetables to Japan has increased so much in recent years is the "rising consumer demand for year around vegetables" (USDA FAS 1996). This trend when combined with the fact that Japan eats twice as many vegetables per capita than the US (Jacobs 1996) explains why it is that Japan must look overseas for its year round vegetable needs; imports are the only avenue by which these demands can be met.

Shiitake growers have a vast market for their mushrooms in Japan, if they can provide them at a competitive cost. This will not be easy. The Chinese can sell very fresh (they transport some shiitake via high-speed hydrofoils from the mainland to Japan) shiitake to the Japanese for $2-3 a pound or less (Briggs 1998). However cost is not everything if one can provide a high quality product. There are currently two growers in Canada who ship shiitake grown from oak logs to Japan (Taylor 1998). Furthermore, there are rumors within the specialty mushroom industry that China is diverting the wood that they previously used for shiitake production toward the manufacturing of wooden furniture (Pickett 1998). If this

turns out to be true it may be possible for growers to ship either shiitake mushrooms to Japan or inoculated shiitake blocks to China in order to profit from this huge Japanese market.

C. Threat of New Entrants

At the beginning of the shiitake mushroom industry's growth phase, new entrants were able to enter at a very brisk pace due to the high price that shiitake mushrooms commanded and the minimal economic and intellectual capital needed to operate a shiitake mushroom farm. However, now shiitake mushrooms that previously sold for $10/lb. are sold for 3-5 dollars a pound (Pickett 1998). With prices so low, economies of scale have become more important and farmers must make investments of approximately $250,000 if they are going to have an operation that will provide them with a satisfactory profit (Pickett 1998). This is because last year, the average US shiitake grower sold 36,376 lbs. of shiitake for about $123,562 of gross sales.[9]

Once these farmers invest in the equipment and supplies necessary to grow their own product, they must then find or develop a mechanism by which to distribute their mushrooms. This is not that difficult or expensive to do. For example, in Oregon, there are three associations that will buy all the mushrooms that a farmer can grow (Pickett 1998).[10] These associations sell all the growers mushrooms and then give all growers the average price per pound for which the mushrooms were sold. In exchange, the growers agree to sell all of their product through the association and pay a fee (Pickett 1998).

Currently, the threat of new entrants is not an immediate problem to individual producers of shiitake. Although new farms can spring up easily, they do not appear to threaten the established order of the industry. Their only apparent effect is to increase the overall supply and decrease the price that everyone receives for their mushrooms. A primary threat of new entrants comes from the ability of the Chinese to export large volumes of their product to the US for a very reasonable price.

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[9] Derived from USDA figures in Appendix A.

[10] Except during occasional times of oversupply (Pickett 1998).

In the future, a new entrant threat to the shiitake industry is likely to come from a large mushroom producer who would will locate its operations to northern Mexico where labor is cheap and they are close to the US market. By producing the mushrooms in Mexico, future importers will be able to grow a cheaper product since labor is 30-50% of the total cost (Donoghue 1997) of the mushrooms and wages in Mexico are significantly lower, as low as five dollars a day in some areas (Mexico Looks East 1998). This, when combined with lower transportation costs than the Chinese and also a shorter trip between grower and terminal markets, could result in a cheap and high quality product. This could be a significant threat to the market price of shiitake mushrooms in the US.

D. Threat of Substitutes

The shiitake mushroom has no direct substitute, however other specialty mushrooms (e.g. portebellos [Donoghue 1997]) or Chinese shiitakes could be considered substitutes for it. When wild mushrooms periodically flood the market during the year they become relatively cheap and some consumers switch to these cheaper mushrooms (Kilby 1997). In addition, it would not be a preposterous assumption to assume that some uneducated consumers lump all specialty mushrooms together and buy any one of a range of exotic mushrooms.

Within the restaurant industry there may be resistance to substitution given the current trend toward authentic cuisine. Given that the shiitake mushroom is an integral part of Japanese dining (U.S. Department of Commerce 1996) it is unlikely that those chefs who are seeking to harness the trend toward authentic cuisine would use a separate mushroom. Other restaurants, such as steakhouses, may add specialty mushrooms to a dish to give it a touch of class, but not necessarily shiitakes.

On another level, the Chinese shiitake mushrooms can also be viewed as a substitute product for it is not identical to those strains that are being grown in the US. The product being shipped from China is a younger, smaller and different looking mushroom than the

older, larger ones currently being grown in the US. This is because the Chinese mushrooms must be picked at an earlier stage in their development to survive the long boat trip from China (Donoghue 1997). Currently these Chinese mushrooms are considered to be between a number 1 and a number 2 quality domestic shiitake. Some buyers like them and others have quit buying them and returned to domestic mushrooms because of poor quality (Donoghue 1997). Though sometimes of lesser quality, Chinese shiitake are able to provide an effective ceiling on US shiitake harvests (Donovan 1997).

Overall, the threat of substitutes to the shiitake mushroom does not appear to be very large. Of all the sales of specialty mushrooms, shiitake are clearly the most popular, composing 62% of the value of all specialty mushroom sales in 1996, however this is significantly less than the 71% of sales that it had just two years earlier.[11] Growers must endeavor to educate the public about the benefits of their particular strain of mushroom if they are to prevent their crop from being marginalized by other mushroom types in the future.

E. Intensity of Rivalry

At the present time the intensity of rivalry within the US in the shiitake industry has been rather minimal. The Northwest Shiitake Association stated that they seldom competed with the larger mushroom growers for accounts (Kilby 1997). The market has been big enough for most players to coexist with each other without fighting for customers. Though this is typically true, there are times during the year when competition becomes very intense due to the seasonal harvests of natural log grown shiitake. These logs fruit in the fall and late spring and bring a glut to the market at those times, greatly decreasing the price of each pound of shiitake. During these periods it is possible for farmers to lose money on the shiitake that they grow and sell (Pickett 1998).

1. Competitors

[11] Figures derived from USDA figures summarized in Appendix A.

Major growers of specialty and shiitake mushrooms for the United States' Market include Monterey Mushrooms of California, Phillips Mushroom Farms in Pennsylvania, Oakshire Farms in Pennsylvania, and Money's Mushrooms of Canada. There is very little detailed publicly available information on the specialty mushroom industry since it is so small, however some general observations can be made. The first is that the mushroom market is somewhat regional (Donoghue 1997) due to the perishable nature of the product (Taylor 1998). Therefore, small growers in Oregon do not typically compete with the larger growers in Pennsylvania (Donoghue 1997). Within the Western region of the United States there are two major mushroom companies which traffic in shiitake mushrooms, Money's Mushrooms of British Columbia and Monterey Mushrooms of California. Money's Mushrooms is a limited partnership of 70 growers who produced about 50 million pounds of mushrooms in 1997 with a total value of 100 million dollars (Money's Mushrooms 1997). This is a considerable amount of mushrooms considering that value of the 1996-1997 US mushroom crop was $766 million dollars (USDA 1997). Money's export its mushrooms to Japan, Washington and Oregon (British Columbia MAFF 1997) and it has extensive marketing programs which include attractive packaging, point of sale materials and marketing support for distributors (Keller 1998). It is a primary supplier for many of the grocery chains in the Eugene/Springfield area and beyond. Monterey Mushrooms, based out of Watsonville, California, has 7 regional production sites with four in California, one each in Texas, Tennessee, and San Miguel, Mexico (Monterey Mushrooms 1998). It is the nation's largest marketer of all fresh mushrooms and sold about 110 million pounds of mushrooms in 1996 (Monterey Mushrooms 1998). Additionally, it employs about 2,400 employees (Monterey Mushrooms 1998).

In addition to these large growers, there are also smaller cooperatives of mushroom growers within the state of Oregon that grow shiitake mushrooms. The three primary ones in Oregon are Wespac, Northwest Shiitake Association, and Oregon's Best Mushrooms. These

co-ops primarily sell to wholesalers in the western US and therefore do not typically compete directly with the larger growers for retail accounts. These cooperatives pool mushrooms from many smaller growers to service larger accounts. This minimizes the competition between farmers within a particular coop since farmers do not compete for particular accounts and every farmer receives the average price that the coop received for the mushrooms less an marketing fee (Pickett 1998).

In addition to the regional and local competition there is also competition from China. China imports lesser quality shiitake into the port in San Francisco and sells them to brokers for about $3.00/lb (Donoghue 1997). The overall value of all the fresh or chilled mushrooms that China imported into the US in 1996 was equal to $563,000 dollars (U.S. Department of Commerce 1997). If all of these mushrooms were shiitake, then this would equal approximately 2.7% of total sales within the US during 1996. Though this may not seem like a significant volume, a few extra thousand pounds of shiitake a week are enough to force sales prices downward in the US (Donoghue 1997). However, if the rumors discussed earlier are true which state that China will discontinue mushroom exports in the near future, this would allow domestic growers to obtain higher prices for their mushrooms.

In the US shiitake market the farmer has very little control over the price that he receives for his shiitake mushrooms. He is basically selling a commodity and the only way that he can differentiate himself from the other producers in order to charge a premium is by having a good reputation for a quality product or by providing a superior level of service to his customers. Providing a superior level of service is more difficult for the smaller co-ops relative to Money's or Monterey since these firms have dedicated marketing departments. The intensity of the rivalry between the smaller and larger firms for particular accounts is currently minimal because the smaller firms have avoided this competition by selling to the wholesale market where they do not have to provide marketing support. Where both firms do compete is in the wholesale market where the effect of the competition is to drive down the

price that growers demand for their product. Here, both groups of growers are primarily providing a commodity to wholesalers and marketers who then compete to find particular outlets for this commodity.

F. Oregon's Best Mushrooms Position in the Shiitake Mushroom Industry and Appropriate Strategic Orientation

Oregon's Best Mushrooms is vulnerable to the bargaining power of the buyers of its product, the intensity of rivalry with its current competitors, the threat of future new entrants from low cost locations and the threat of consumers switching to other types of mushrooms. To minimize the effect of these forces upon their business they must pursue a focused, low cost and differentiation strategy. To keep costs associated with such a strategy reasonable, this strategy would initially focus on selling to Oregon/Washington markets along the I-5 corridor and would seek to provide superior quality mushrooms, consistent supply, innovative marketing, and high levels of service to OBM's buyers. By pursuing this strategy, OBM will create significant entrance barriers to future entrants, improve its bargaining position with produce buyers and increase its ability to compete with its rivals.

IV. MARKETING PLAN FOR OREGON'S BEST MUSHROOMS

In order to maintain its profitability in the future, Oregon's Best Mushrooms (OBM) must increase the variety, quantity, and quality of the mushrooms that they market and they must engage in specific promotional activities which will establish a brand which consumers and commercial produce buyers will value. These activities will require changes of both the mushroom growers who sell to OBM and of OBM's distribution functions. To ensure that OBM only makes appropriate changes, this thesis will examine OBM's current and future buyers, review its regional competition and look at OBM's strengths, weaknesses, opportunities and threats. This comprehensive analysis provides a broad basis from which to define the three key issues that OBM must successfully resolve if they are to survive in the future. Specifically, (1) How to increase demand for OBM's mushrooms? (2) How to

increase/maintain OBM's profitability? (3) How to create demand for OBM's brand of mushrooms? This thesis then creates specific and measurable goals that require OBM to successfully overcome these three issues. It then develops, coordinates and costs specific strategies and tactics in order to provide clear steps to accomplish these goals and to assess the economic feasibility of executing them.

A. Positioning

Oregon's Best Mushrooms is a marketer of shiitake mushrooms in the northwestern US that seeks to distinguish itself from its competitors through superior mushroom quality and variety and through superior service to its consumers at a reasonable cost. To achieve this position, OBM must decide which parts of the mushroom buying market that it should target and then meet the demands of these mushroom-buying segments.

B. Target Markets

Currently, OBM sells bulk shiitake mushrooms to domestic produce wholesalers who then sell to produce retailers. In the future, if OBM sells more of its mushrooms directly to produce retailers and sells primarily pre-packaged mushrooms to both the retail and wholesale markets, OBM should be able to increase its profits. This additional profit will come from removing a middleman from the distribution chain and by increasing the price and appeal of its mushrooms by providing mushrooms in a more convenient form for end consumers. In the future, OBM should also explore the viability of selling its mushrooms to distributors to Japan, since this market is so large and relatively untapped by North American mushroom marketers.

Once OBM begins selling mushrooms directly to produce retailers they must also begin to target the end consumers who shop at these retailers to increase these consumers' mushroom purchases. This would involve targeting the 30% of the US population who is considered medium or heavy users[12] of mushrooms (Moss December 1994) and who are on

[12] On average, these consumers eat two to eleven pounds of mushroom per year, respectively (Moss December 1994).

average more educated and have above average earnings (Moss October 1994). Having defined the corporate and individual produce buyers that OBM seeks to sell its mushrooms to, this thesis will next analyze the specific demands of these produce retailers and mushroom consumers.

C. Consumer Analysis

Retailers desire quality, variety, mushroom knowledge and service from their mushroom suppliers according to a Mushroom Council market analysis (Moss December 1994). Mushroom purveyors want " a consistent supply of high-quality mushrooms . . . [since] consumers blame the retailer . . . if the produce is not fresh" (Moss December 1994). They also want an assortment of packages and mushroom types, knowledge of how to handle, order and promote sales of mushrooms (Moss December 1994) Lastly, retailers want "assurance that their mushroom supplier can quickly fill orders on demand; is easy to communicate with; and is responsive to complaints or problems" (Moss December 1994). These concerns are important to retailers since there "is a strong correlation between the service that a supplier provides the retailer and the success the retail chain has with mushrooms" (Moss December 1994). If OBM is going to gain accounts with the large produce retailers in the Northwest, they are going to have to satisfactorily address these concerns or else loose these potential customers to other produce suppliers.

Mushroom consumers value quality, taste, and price in their mushroom purchases and they often avoid mushrooms because they think that mushrooms are difficult to prepare and spoil easily (Moss October 1994). Focus groups have shown that people purchase mushrooms because people like their taste, think mushrooms are "good for you," think that mushrooms "automatically dress up a meal . . . and make better cooks of the people who use them," and because they enhance flavor (Linda 1995). These groups have also shown that half the respondents seem interested in exotic varieties of mushrooms but that consumers want more information about selecting, cleaning and storing mushrooms in order to increase

their demand for these mushrooms. Additionally, consumers want specific nutritional values of mushrooms and "lots and lots of recipe ideas "(Linda 1995). If OBM would provide a high quality product at a reasonable price they will have gone only part way in addressing the needs of potential mushroom consumers. They must also teach these customers about mushroom attributes, care, selection and usage if they are to increase the volume of mushrooms that they purchase.

D. Competitive Analysis

In order to succeed OBM cannot merely try to satisfy its consumers' demands, they must satisfy them better than its competitors can. Money's mushrooms of British Columbia, Monterey Mushrooms of California and Wespac of Oregon are three significant mushroom grower cooperatives which, as previously discussed, are ready to supply mushrooms if OBM fails to meet its customers' expectations. Money's is already supplying mushrooms and point of sale materials to many Oregon retailers. OBM must capitalize on its own strengths, minimize its weaknesses, exploit its opportunities for growth and neutralize threats to its business in order to successfully compete against other mushroom cooperatives.

E. Strengths, Weaknesses, Opportunities and Threats

1. Strengths

OBM's large volume production, appropriate structure, reputation for quality and progressive corporate vision are strengths that OBM can use to be successful in the future. OBM's exact production volume is confidential but it is significant relative to the size of the regional mushroom market. In addition, Pickett anticipates that this volume will grow at a very high rate over the next 18 months. This is good for OBM because it enhances its bargaining position for accounts with the high volume produce retail chains and enables OBM to spend more money on marketing and sales efforts.

Another strength of OBM is its structure. OBM pays the same price to all growers for all mushrooms farmers sell through the association and OBM has a salesperson whose only

job is to sell the association's mushrooms. This structure promotes collaboration between growers in order to solve problems that arise and it makes growers accountable for supplying high quality mushrooms.

OBM's reputation for quality mushrooms and service is also a strength. This has enabled them to develop a significant number of established accounts and to negotiate longer term fixed price contracts that allow them to hedge against the periodic gluts in the market. This reputation will continue to help them obtain additional accounts in the future, especially in foodservice and the Japanese market, since both of these markets highly value quality.

The last major strength of OBM is the progressive orientation of some of its growers. These growers are aware that as OBM and the mushroom industry mature, changes will and need to occur. OBM is looking to hire a broker and marketer full time and is exploring bigger marketing efforts. This awareness that it must exploit its environment for its own gain and not remain passive can only help OBM in the future.

2. Weaknesses

Though OBM possesses important strengths it is also suffers from some significant weaknesses in that it is inefficient relative to leading mushroom producers, it does not place a priority on marketing its product and it is only focused on the domestic market. OBM is inefficient because Oregon law requires that it must pay minimum wages higher than that which federal law mandates for other states. Therefore, growers in Oregon are less efficient than growers in other states who can pay their workers lower wages for the same work. OBM is also less efficient than some larger mushroom grower cooperatives, such as Money's, since OBM does not sell its product directly to the large produce retailers for a high price. Instead, OBM sell primarily to wholesalers at a lower price. These inefficiencies limit OBM's net income, which fosters weaknesses in other areas such as marketing.

OBM suffers from a lack of resources and vision dedicated to implementing a marketing plan. Currently, OBM and its member growers have devoted little time and money

to promotional efforts. Instead, they are mostly consumed by mushroom cultivation problems and concerns. The only significant resources OBM spends promoting its mushrooms has gone toward paying an employee to sell its mushrooms. This has lead to a short sighted focus on selling current inventory to currently known customers and less emphasis on finding new customers. This lack of long-range vision has also limited the geographic scope of its future plans.

OBM has no current plan to assess the potential of foreign markets for future mushroom imports or exports. Countries such as Japan buy huge quantities of mushrooms when compared to the US and OBM has not assessed if this large market has profit potential for its firm in the future. In addition, OBM has not assessed whether or not Mexico's cheap labor supply will place significant downward pressure on US mushroom prices since labor is such a large percentage of mushrooms' final cost and Mexico is geographically close to the US. Despite these weaknesses, OBM is still in a satisfactory position to begin taking advantage of the opportunities facing it.

3. Opportunities

The primary opportunities facing OBM concern development of new sales channels for its mushrooms, tapping or growing new markets for mushrooms and implementing strategic alliances with growers of different types of mushrooms. New sales channels facing OBM are sales of its mushrooms to produce retailers, sales of higher value mushroom prepacks to produce wholesalers and sales to restaurants. Grocery stores sell pre-packed mushrooms for $16 per pound and bulk shiitake for $10 per pound. OBM does not currently sell to this market which should pay up to several dollars more per pound than what wholesale buyers are currently paying for OBM's bulk shiitake. In addition, OBM could gain additional profits by selling the increasingly popular, high value pre-packs to produce wholesalers.

Trends in the restaurant industry such as increases in the number of Asian and steakhouse restaurants and increases in the number of chefs searching for regional and organic produce suppliers, offer new avenues for sales growth to OBM. Since shiitake mushrooms are an intrinsically Asian ingredient given their close ties with Japanese cuisine and their "distinctive" flavor (Pickett 1998), they are a natural ingredient to be included into authentic Japanese cuisine or fusion cuisine. The bulk of short-term growth in shiitake sales to this segment would primarily come from selling to large restaurant chains (or the distributors which service them) that are exploring fusion cuisine and utilizing Asian ingredients. A smaller amount of growth in sales could be found in selling to the authentic Japanese restaurants. This segment of restaurants is much smaller but is positioned well for longer-term growth given the rising population of Asian-Americans in the US.

The growing numbers of steakhouses is also a promising market for OBM. If OBM would promote the value that its mushrooms could create for steakhouses or restaurants that serve steak and sell them OBM shiitakes, this could greatly increase its present market. By focusing on larger chains OBM could bypass distribution problems.

The fact that chefs are looking for regional and organic suppliers for their ingredients also presents the OBM with the opportunity to become organically certified to increase its image of quality. It also places them in a good position to service the shiitake needs of chefs within the Northwest since according to the previously mentioned survey, chefs place a premium on freshness.

In addition to gaining new routes to bring its mushrooms to the end consumer, OBM also faces opportunities for increased profits by engaging more heavily in marketing efforts to increase the public's overall demand for mushrooms and also by finding new geographic markets for its mushrooms. Mushroom marketing is a lucrative opportunity for OBM since "over 75 percent of the value of all consumer spending on fresh fruits and vegetables covers marketing related activities" and only "25 percent returns to the farm" (King 1994). By

marketing its own produce more, OBM could capture a greater portion of consumer spending on its mushrooms and thus increase the value of its total sales.

Increase in marketing expenditures should also lead to increases in OBM's sales volume, since there is clearly room for growth in US consumption of fresh mushrooms and since increased promotion can increase consumption. Per capita mushroom consumption in the western region of the United States is about 21 percent lower than the combined average consumption of mushrooms in 8 North American and European countries (Moss December 1994).[13] These per capita rates of consumption can be changed through marketing efforts. Money's mushrooms "significantly" increased the per capita rate of consumption of its home market of British Columbia to seven pounds in 1997 (Money's Mushrooms 1997) compared to Canadian national averages of 3.09 pounds in 1990 (Moss December 1994). Since 1992, the consumer price of mushrooms has increased 20 percent, growers' prices have grown 30 percent and sales have more than doubled its 1992 level of $48 million (Money's Mushrooms 1997). The potential for increases in the US consumption of mushrooms is present and the high rate of mushroom consumption in foreign countries highlights the opportunity for OBM sales in other nations.

The sale of shiitake mushrooms to Japanese consumers is an opportunity for Oregon's Best Mushrooms, because the Japanese consumer market is huge, growing fast, and demands the quality that OBM can provide. In addition, Japan's domestic supply of mushrooms is vanishing as Japanese farmers become fewer in number, forcing supermarkets and wholesalers look overseas for produce.

The last significant opportunity which OBM could exploit for its own gain is to become a "one-stop" supplier of all major mushroom types. If OBM could gather growers of all the major types of mushrooms within its association it could provide considerable value to overwhelmed produce buyers. Grocery store produce buyers must communicate with

[13] Interestingly, it is about 30 percent less than Canada's per capita consumption and 51 percent less than the UK's (Moss December 1994).

shippers, distributors and brokers while dealing with information from trade groups, shippers and government agencies concerning "as many as 350 commodities in [their] produce section" (King 1994). In addition, the "produce buyer is dealing with the most unpredictable, volatile and perishable department in the most competitive lowest profit margin consumer environment in America" (King 1994). OBM would provide a valuable service to produce buyers in Oregon if buyers only had to call them rather than several different distributors.

4. Threats

The last area that OBM must address is threats to its business. OBM's primary threat is a general increase in the supply of specialty mushrooms and the subsequent downward pressure that this places on sales prices. The looming possibility that major producers could grow their product with cheap labor in Mexico and its competitors' ability to provide higher levels of marketing support to their buyers only increases the pressure that OBM faces to decrease its sales prices. Unless OBM can provide additional value to its buyers, OBM will probably face significantly lower per pound prices in the future.

F. Three Key Objectives

From the analysis of OBM's strengths, weaknesses, opportunities and threats, this thesis will now develop a specific marketing plan for OBM to pursue in order to accomplish three key objectives that OBM must fulfill to remain successful in the future. These key objectives are that OBM must: (1) increase its profit margins (2) increase sales volume by successfully competing against other mushroom cooperatives for large grocery and restaurant chain accounts and (3) access greater levels of consumer demand by either increasing domestic demand or exporting to high demand countries. These general objectives must be further defined by three measurable goals with definite timelines to allow progress toward goal attainment to be measured.

G. Three Key Goals

OBM's three goals should be to (1) increase OBM's profit margins 10% and average sales volume by 25% through the sale of pre-packed mushrooms through at least 2 major grocery chains and one restaurant produce distributor by July of 1999; (2) increase consumers' awareness of mushroom uses and OBM's brand of mushrooms through promotional activities which result in sales volume increases which exceed the national average at stores which carry OBM mushrooms during each year until July of 2000; (3) determine whether OBM can profitably sell shiitake to Japan's market by July 2001. If OBM attains these three goals, OBM will have achieved a measure of success in achieving its three key objectives.

H. Strategies and Tactics

To accomplish these three goals OBM must implement a sequence of strategy sets to organize the specific actions that will help OBM attain its goals.[14] OBM's first strategy set should focus on making itself appear to be a good supplier candidate to major grocery chains by engaging activities which increase its access to production capacity, increase its production variety and which develop business/product characteristics that produce buyers value.

In order to access greater volumes and varieties of mushrooms, OBM should encourage current member farms to increase their production levels and should negotiate to sell the mushrooms of other, currently non-member, mushroom farms which produce other types of mushrooms (agaricus, crimini, portabello, oyster, enoki). This will allow OBM to distribute its marketing costs over a larger number of growers making these costs more reasonable. It will also enable OBM to provide greater value to its buyers, since OBM could supply all the types of mushroom that its produce buyers' would need, rather than the produce buyer having to negotiate with several different suppliers.

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[14] For a specific tactic, cost and timeframe breakdown for each strategy set, see Appendix B.

OBM should also begin to implement HACCP protocols at its farms, have its farms become registered as organic, create promotional materials, and begin production of pre-packaged mushroom products. By executing these steps, OBM would demonstrate to produce buyers that it is positioning its products to harness the trends of food safety, quality and convenience driving the produce industry and that OBM will help sell these products for the grocery stores with effective promotional materials (i.e. good labels, point of sale advertising, web page). Having accomplished these steps, OBM would begin negotiating with produce buyers of the large retail grocery chains to attempt to gain their business. Gaining these accounts would then help OBM achieve its profit margin and sales volume goals.

OBM's next set of strategies will involve expanding its distribution capacity in order to increase the number of stores carrying OBM mushrooms, beginning to interactively promote mushrooms to end consumers, beginning to create a positive image of OBM within the minds of consumers and starting to advertise OBM's mushrooms to the restaurant industry. In this second set of strategies and in addition to continuing the activities of the first strategy set, OBM will buy a refrigerated truck to distribute its mushrooms to the grocery chains' and restaurant distribution centers of the major metropolitan areas within the Northwest and will promote its mushrooms through demonstrations and information about OBM's mushrooms at locations within grocery stores, the Valley River Center, and the Oregon State Fair. These activities will furnish opportunities to refine a demonstration routine to be executed in the future at a greater number of produce departments, to gather consumer level information about what consumers demand concerning mushrooms and to begin educating the public about the many positive attributes of mushrooms. These efforts, along with the sponsorship of some local Kidsports teams, will begin to increase the public's awareness of OBM within the region and create the impression that OBM is a responsible corporate citizen of the local community. OBM's positive image as a regional native will be a

strength that it can use to differentiate itself from the foreign competitors when competition between itself and companies such as Money's, intensifies. In addition, OBM will begin to advertise to the foodservice community through membership in the Oregon Restaurant Association (ORA), advertisements in the ORA's suppliers guide, establishment of a booth at the ORA's Food Trade Show and by a link from the ORA's web page to OBM's web page.

The accomplishment of this second set of strategies should lay a solid basis for continued expansion of distribution volume and more extensive marketing efforts. In addition, it helps OBM accomplish its second goal of creating access to greater demand.

OBM's third strategy set is to increase consumers' demand for its mushrooms through advertisements. This advertising will take the form of both general advertisements and vendor specific promotions. The general advertising will take the form of Obie adds on public buses, small ads on grocery store carts and press releases concerning OBM or general mushroom information (e.g. wild mushroom season, OBM business expansion, Oregon agriculture and mushrooms, nutrition and mushrooms) in Eugene and Portland. The purpose of these advertisements is to make people consider buying OBM's products while they are commuting or shopping. The second form of advertising will be specific promotion of OBM's mushrooms through a particular vendor. This will occur a few times during the year and involve radio and newspaper ads that would be run in conjunction with in store demonstrations and promotions executed by OBM employees. The goal of these coordinated advertising blitzes would be to increase consumers' trial of mushrooms and to increase their present consumption levels by giving the consumer information about selection, care and possible uses of all mushroom varieties and also by decreasing the price of OBM's mushrooms temporarily. OBM's execution of these tactics will help it accomplish its second goal of achieving a sales growth rate greater than the nation's average.

OBM will execute its fourth and final strategy of determining whether it can profitably tap the huge Japanese mushroom market after the previous three strategies have

been successfully executed and OBM's is well on its way to achieving its first two goals. This fourth strategy will require that OBM explore the possibility of whether it would be profitable to export fresh shiitake mushrooms to Japan by plane or to send shiitake blocks to China or another Asian country by boat and having that country sell the fresh shiitake mushrooms to Japan. In this strategy both tactics will be evaluated to see if either or both should be executed. This will require OBM to consult various governmental and business sources to assess the feasibility of this strategy. By doing this, OBM will fulfill its third goal of assessing the profitability of servicing the Japanese mushroom import market.

V. CONCLUSION

The decision facing Oregon's Best Mushrooms is whether it should continue as it has and focus primarily on becoming a more efficient seller of large volumes of mushrooms to the domestic, bulk produce, wholesale market or if it should enter the higher value, pre-packaged retail market. To pursue the later, OBM will have to execute the four strategies and accomplish the three goals set out in this thesis. Therefore, OBM must decide if the potential profit increases of the successful accomplishment of these three goals are worth the risk of losing the capital required to make them. Selling to the large produce retail and restaurant chains will require OBM/MVF to make significant marketing and equipment investments since its competitors offer significant marketing support and since a refrigerated truck is required to deliver the mushrooms to the distribution centers. This means that OBM must expend about $10,000 and execute at least strategy set one and two of the marketing plan to be competitive against its primary competitor for retail accounts, Money's.[15] By investing $30,000 in strategy three[16], OBM will grow the overall specialty and general mushroom market of the Northwest and create barriers to entry for other firms seeking to compete with OBM. Though these amounts are very significant they represent less than ten percent of total

[15] See Appendix B for how these figures were derived.
[16] See Appendix B for how this figure was derived.

sales of the association (Pickett 1998) and if the future sales volume of the association grows as expected (Pickett 1998), this percentage would become even less.

Execution of these strategies risks the loss of investment capital, a risk that could be avoided if the investments are not made. However, even if OBM continues to operate as they did in the past they are not free from the risk of loss. Over time, the forces at work within its market will force OBM to become more efficient as per pound prices continue to fall as the market enters its mature stage. If this marketing plan is successfully executed, OBM will grow its total volume of sales and will create a place for itself and its products in the minds of produce consumers. This will increase the bargaining power that OBM has with its buyers and will increase its power to compete with the competitors within its industry. Thus, if OBM executes the marketing plan proposed by this thesis, it will be in a stronger position to protect its profits from these market forces at work within the mushroom industry than if it chooses to do nothing.

APPENDIX A: SUMMARY OF USDA NATIONAL AGRICULTURAL STATISTICS SERVICE. MUSHROOMS REPORTS. GPO: 1986-1987.

* Figures derived from USDA statistics in other columns on this chart

Year	Outdoor logs in production	Indoor logs in production	Other production media	Total production media	Number of growers	Price/lb.	*Growth/ decline in price/lb.	Sales volume (1,000's lbs.)	*Growth/ decline in sales volume	*Average sales volume per grower (lbs.)	Value of sales ($1,000's)	*Average value of sales per grower
1986					61	4.3		1144		18,754	$ 4,924	$ 80,643
1987	390	27	536	953	73	4.37	1.6%	1353	18.3%	18,534	$ 5,991	$ 80,995
1988	561	244	773	1578	233	4.43	1.4%	1916	41.6%	8,223	$ 8,488	$ 36,429
1989	487	541	728	1756	215	4.21	-5.0%	2209	15.3%	10,274	$ 9,293	$ 43,255
1990	319	300	836	1455	228	3.73	-11.4%	2323	5.2%	10,189	$ 8,673	$ 38,003
1991	186	275	933	1394	175	4.01	7.5%	2537	9.2%	14,497	$ 10,183	$ 58,134
1992	180	397	925	1502	174	3.88	-3.2%	2752	8.5%	15,816	$ 10,677	$ 61,366
1993	174	352	1363	1889	171	3.7	-4.6%	5585	102.9%	32,661	$ 20,672	$120,845
1994	169	325	1375	1869	192	3.86	4.3%	5396	-3.4%	28,104	$ 20,819	$108,482
1995	148	249	1505	1902	188	3.49	-9.6%	5665	5.0%	30,133	$ 19,757	$105,164
1996	195	627	1928	2750	178	3.4	-2.6%	6475	14.3%	36,376	$ 21,994	$123,680

APPENDIX B: OUTLINE OF COSTS FOR MARKETING PLAN

Strategy Set 1: **Growth in Production Volume &Variety; Develop Marketing Tools**

Tactics:

- Create strategic alliance with high quality growers of other types of mushrooms: agaricus, crimini, portabello, oyster, enoki
- Increase production volume of OBM farms
- Develop HACCP plan for implementation at affiliated farms by following HACCP's 7 general principles and generic decision trees
- Start process of becoming registered organic
- Develop/troubleshoot pre-packed mushroom product, prepare for production
- Create promotional materials: brochure, paper bags, POS recipe cards, web page
- Develop relationships with produce buyers and distributors in Eugene and Portland and gain large accounts

Costs:

HACCP Implementation (estimate): **100 hours**

Organic Registration: **No charge**

(except increased costs of organic grain inputs)

Pre-pack Inventory and Equipment: **$989**

Labels- $370.00 for 10k (Label Solutions)

Shrink Wrap- $49.00 for 15"x 4000' (United Grocers)

Shrink Wrap Heat Source- $195.00 (United Grocers)

Dolco Molded Fiber Containers- $375 for 5k (Estimate)

Promotional Materials, Creation & Small Run: **$2169 - $2669**

Recipe Cards (6 different ones; black, green, and white colors on high gloss paper; collated and padded into packs of 120; 6k total): $539.06 (Technaprint)

POS paper bags (green and black; 25k minimum): $1250.00 (Package Containers Incorporated (PCI)

Design/typeset POS recipe cards, brochure, logo, labels, flyers (Amazing Graphics):

Recipe Cards- $30

Brochure (full-color) and Printing: $1500 for 5k

Logo: $200

Flyer: $150

Account Development: **Many Hours**

Contact produce buyers personally via phone:

Jerry, Safeway:	(503) 657-6449
Gary Bird, Waremart:	(503) 982-4911
Mike Sturkuitz, Albertson's:	(503) 251-9273
Charles Keller, United Grocers:	(800) 777-3305 ext. 1352
John Jefferson, Fred Meyers:	(800) 858-9202

Phone Costs ($0.15 x 60 minutes x 20 days): **$180**

Web Page (low end first year cost): **$604**

Cost to have knowledgeable relative construct it:

Design/ Update- free

Hosting- $45/mo (PacInfo)

Register domain name- $70/yr

TOTAL: **$3942 - $5442**

Time Needed To Accomplish This Stage: 6-9 months

Strategy 2: Increase Mushroom Demand and Increase Sales to Oregon Grocery Chains and Distributors

Tactics:

- Continue calling, visiting, and faxing potential buyers of OBM to gain more accounts
- Lease/buy refrigerated truck
- Produce shiitake pre-packs
- Continue production of bags, POS recipe cards, brochures as needed and operation of web page
- Advertise in Oregon Restaurant Association Suppliers Guide
- Have booth at Oregon Restaurant Association Event
- Have booth at State Fair
- Have mushroom festival at Valley River Center; alert media
- Do demonstrations in stores that carry OBM mushrooms
- Sponsor Kidsports teams

Costs:

Prepack Materials, Labor, POS Promotion and Web Page $6280

Assumptions:

Labor Costs: $8.00 per hour

Employee can pack 120 prepacks per hour

1.5 feet of shrink-wrap required for each container

Dolco Containers cost $0.075 each

25,000 POS bags

12,000 Recipe Cards

Previously defined Web page costs

Phone charges ($0.15 x 60 minutes x 20 days): **$180**

Contact Potential Restaurant Chains:

O'Charleys (615) 256-8500

Dining chain of 75 restaurants; centralized commissary

Lone Star Steakhouse (316) 264-8899

Chain of 205 restaurants

Apple South (706) 342-4552

operates 354 restaurants

Applebee's International (913) 967-4000

operates 148 and franchises 671 restaurants

Fresh Choice (408) 986-8661

operates 48 upscale restaurants in northern California

Outback Steakhouse (813) 282-1225

operates 327 units and franchises 59

Transportation/Food: **$128**

(($20 for gas x 4 trips) + ($4 x 4 trips x 3 meals)):

Costs Associated with leasing refrigerated truck: **$3152**

Cost to Purchase:

Price for reasonable, post-1992, used, 16 foot refrigerated truck (Farwest Truck Center): $27,000-35,000

Monthly Payment (12% for five year term) (Selco): $735

Approximate Monthly Insurance Payment: $250

Gas and Labor cost (2,000 miles/month; $1.00/gallon diesel; 9-12 miles/gallon; 160 hours driving at $12.50/hr): $2167 - $2222

TOTAL: $3152 - $3207

Oregon Restaurant Association Suppliers Guide ad: **$555**

Cost:

Required membership: $210

Ad rates: 1/8 page B&W- $145.00/yr

Link on ORA web page: $200/yr

Oregon Restaurant Association exposition booth space: **$995**

Food Trade Show 10' x 10' rental area

Oregon State Fair indoor aisle booth: **$950**

Valley River Center informational mushroom festival: **Free**

Kidsports team sponsorship with name on shirts: **$300**

In-Store Promotions (estimated costs): **$1860**

Small table:	$25
Table cloths:	$40
Electric wok:	$40
Large table:	$75
Quick set up covering:	$200
Miscellaneous ingredients/clothes:	$60
Labor	$1417

(15 demo's in Eugene & 35 in Portland; 3 hours each when in Eugene; 9 hours to accomplish two demo's in Portland; pay $7.00/hr)

TOTAL: **$14,400**

Time needed to accomplish this stage: 6 months

Strategy 3: Increase OBM Mushroom Sales by Marketing Directly to Consumers

Tactics:

- Continue stage two tactics

- Advertise on store carts
- Advertise in the Register Guard; coordinate this with other promotions/retailers
- Advertise in the Oregonian; coordinate this with other promotions/retailers
- Engage in outdoor promotions at retailers during summer
- Place some radio ads in Eugene and Portland
- Issue press releases about wild mushrooms, nutritional value of mushrooms, the Oregon mushroom industry and consumption information to news organizations (TV and radio), magazines, and newspapers in the Northwest

Costs:

Stage two tactics:	**$14,400**
Store Cart Ads (estimate):	**$2,500**
Register Guard Ads:	**$791 x 6**
Six ¼ page ads in weekly "Entree" section	
Eugene Weekly Ads:	**$379 x 3**
Three ¼ page ads at the open rate	
Oregonian Ads:	**$2658 x 3**
Three ¼ page ads in the Food Day section on Tuesdays	
Radio Ads (6 adds each on two radio stations):	**60 x 6 + $48 x 6**
Magic 94.5: $60/min. (Mon.-Fri. 6a-10a)	
KPNW 1120: $48/min (Mon.-Fri. 6a-10a)	
Obie Ads 1 in both Eugene & Portland (4 months each):	**$600 + $599 x 4 + $579 x 4**
Monthly cost for back of bus ad:	
Eugene: $599.00	
Portland: $579.00	

Initial production costs: $600

Press Releases: **Free**

TOTAL: **$36,717**

Timeframe for this stage: Approximately one year

Strategy 4: International Expansion to Japan and/or China

Tactics:

- Determine if exporting fresh mushrooms to Japan is profitable
- Determine if exporting inoculated mushroom blocks to China is profitable

Costs To Be Determined:

Applicable air freight and boat freight charges

Contact airlines and shipping companies

Determine various other costs and logistical problems

Contact Ruth Ann Carlyle, Oregon Department of Agriculture - International Division: (503) 229-6734

Contact the United States Small Business Administration

Contact the United States Department of Commerce

Total: **To Be Determined**

Timeframe for this stage: 1 year from time of initiation

BIBLIOGRAPHY

Bibliographic note: To access articles found in the Lexis-Nexis Xchange database enter the name of the article's author, the name of publication in which the article is found, all or part of the article's title and/or the date of the article's publication. Connect all these terms by the connector 'AND.' This should retrieve a small set of documents with the targeted article among them. If no articles are retrieved or the wrong articles are retrieved, make the search terms less specific.

II. INDUSTRIAL LIFECYCLE

Donoghue, John. Research Director, Northwest Mycological Consultants (personal communication, May 22 1997) .

Donovan, Kevin. Phillip's Mushrooms (personal communication, June 10, 1997).

Moss, Stephan, David Mitchell, M.CUBED. (1994, October) . Market Analysis of the Mushroom Industry. Mushroom News, 8-25 .

Pickett, Richard. Shiitake grower (personal communication, May 8, 1998).

U.S. Bureau of the Census. (1998, June 11) . Statistical Abstract of the United States, State Profile - Oregon. [On-line] . Available: http:// www.census.gov/statab/www/states/ or.txt .

U.S. Bureau of the Census. (1998, June 11) . Statistical Abstract of the United States, State Profile - Washington. [On-line] . Available: http://www.census.gov/statab/www/ states/wa.txt .

U.S. Department of Agriculture. National Agricultural Statistics Service. (1993 –1997) . Mushrooms. Washington, DC: Government Printing Office. [On-line]. Available: http:// www.usda.gov/nass/ .

III. FIVE FORCES MARKET ANALYSIS

A. Supplier Trends and Bargaining Power

Dickerson, Steve. Weyerhauser, Northwest Hardwoods Division (personal communication, May 13, 1998) .

Pickett, Richard. Shiitake Grower (personal communication, September 27, 1998) .

Spear, Mark. Sylvan, Inc (personal communication, May 14, 1998) .

State of Oregon. Bureau of Labor and Industries. (1998, March 15) . Wage and Hour: State and Federal Minimum Wage Laws. [On-line] . Available: http://www.boli.state.or.us/Wage/WHMINMUM.HTM.

USDA. (1997, May) . Economic Research Service. Agricultural Economic Report No. 750 : International Agricultural Baseline Projections to 2005 (No. 20005-4788). Washington, DC: U.S. Government Printing Office. [On-line] . Available: http://www.econ.ag.gov/epubs/pdf/aer750/index.htm .

B. Buyer Trends and Bargaining Power

1. Restaurant Buyers

Bureau of the Census. (1993, September) . We the Americans: Asians (pp. 2-3). Washington DC: U.S. Government Printing Office . [On-line] . Available: http://www.census.gov/apsd/wepeople/we-3.pdf .

Bureau of the Census. (1995, November) . The Nation's Asian & Pacific Islander Population-1994 (SB/95-24, p.5) . [On-line] . Available: http://www.census.gov/apsd/www/statbriefs/sb95_24.pdf .

Donovan, Kevin. Phillip's Mushroom Farms (personal communication, June 10 1997) .

Foods & Nonalcoholic Beverages. (1996, August) . Standard and Poor's Industry Surveys, 7-14.

Food and Agriculture Organization of the United Nations (FAO) . (1997, May 22) . Agriculture Data Database Results. FAOSTAT . [On-line] . Query: Data Collection= Crops & Livestock Primary & Derived; Country= World>; Item= Mushrooms; Element= Imports-val; Year= 1995. Available: http://apps.fao.org/lim500/nph-wrap.pl?trade.CropsLivestockProducts&Domain =SUA.

Hays, Jack. (1997, May 24) . Foodservice 2005: What Does Tomorrows Customer Want? Nation's Restaurant News, 48. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Restaurants. (1997, April) . Standard and Poor's Industry Surveys, 1-18 .

Lang, Joan. (1997, February) . "Bringing the Pacific Rim to the US; Asian Cuisine." ID: The Voice of Foodservice Distribution, 22, 67. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Lang, Joan. (1997, March 15) . Hot Plates Comin' Through: chain menus are changing with surprising speed and creativity- and the keyword is flavor. Restaurant Business, 96, 76 . [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Lowe, Kimberly D, Erin Nicholas. (1997, July 15) . Growing Casual: the list of the year's fastest-growing restaurant concepts touches several dining segments. Restaurants and Institutions, 107, 101. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Matuszewski, Barbara Bell. (1997, November 2) . The Cold Facts: What's Hot in Area Restaurants. The Stuart News/Port St. Lucie News, pp. A78 . [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Mushroom Madness---Chefs Add Exotic Fungus to Menus. (1997, April) . Frozen Food Digest, 14. [On-line] . Available : Dialog@Carl, file 9: Business & Industry, Query: Mushrooms.

Papiernik, Richard C. (1997, January 6) . Outlook: 1997: Operators Battle To Share $320.4 Billion In Sales. Nation's Restaurant News, 41 . [On-line]. Available: Lexis-Nexis Xchange, Source: News Group File .

Paskevich, Michael. (1997, December 5) . Nouveau Japanese. Las Vegas Review-Journal, final ed., p. J50. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Porter, Michael E. (1979, March-April) . How Competitive Forces Shape Strategy. Harvard Business Review, 57, 61-70.

Press Release May 14, 1997: Ruth's Chris Steak House Named 'The Best Restaurant In The U.S.' By Robb Report. (1997, August 13) . [On-line] . Available: www.ruthschris.com/news_pr/pr970514Robb.htm.

Reed, M.H. (1997, October 5) . Upscale Tastes Demand Quality and Restaurants Raise Sights. The New York Times, late ed., pp. 13WC14. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Restaurants. (1997, April) . Standard and Poor's Industry Surveys, 1-18.

Sanson, Michael. (1996, February) . Ethnic Splintering; ethnic food trends in the restaurant industry. Restaurant Hospitality, 80, 47+ . [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

The Selection Explosion; fresh produce. (1996, June 10) . Restaurant Business, 95, S4. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Tanaka, Wendy. Asian Chic; As the 'Pacific Century' dawns, Asian film, fashion and food are hot; Hong Kong: Changing of the Guard. The San Francisco Examiner, 25 June 1997, p.A1. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Outback Steakhouse. (1997, August 13) . National Restaurant Register's Menu Online . [On-line] . Available: www.onlinemenus.com.; Query: Name= Outback AND Location= Florida.

Ruth's Chris Steak House Menu. (1997, August 13) . [On-line] . Available:

Vegetables. www.ruthschris.com/menu/vegetabl.htm.

Appetizers and Soups. www.ruthschris.com/menu/aopetiz.htm.

U.S. Department of Commerce . (1996, July 15) . National Trade Data Bank and Economic Bulletin Board United States Agricultural Trade Office, Tokyo, Japan. Japan's Food

Market; Food Market Reports; Annual Marketing Plan. Palazzo, A: Author. [On-line]. Available: STAT-USA .

2. Retail Produce Buyers

Beyer, Leslie. (1996, December) . Produce 2000; produce departments of supermarkets. Grocery Marketing, 62, 26. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Blalock, Cecelia. (1996, December) . Boom Time; baby boomers as consumers; SuperMarketing. Grocery Marketing, 62, 50. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Donegan, Priscilla. (1996, October) . The Picture of Health. Progressive Grocer, 75, 73+. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Dowdell, Stephen. (1996, October 14) . Dressing for Success. Supermarket News, 42+. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Eiser, Andy. (1996, July 25) . Fruits of Their Labor; Frieda's fills the generation gap for mother, daughters . The Orange County Register, Los Alamitos Edition, p. Community 1.

Falstad, Jan. (1997, August 7) . Albertson's Spurns Frequent Shopper Discount Cards. Billings Gazette, p. D5 .

Hennessy, Terry. (1996, April) . Spotlight on produce: Perishables. Progressive Grocer, 75, 133+. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Japenga, Ann. (1997, July 17) . How America Eats: we say our meals are healthier than ever, yet our trash bins are filled with burger cartons and pizza boxes. Health, 11, 66. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

King, Timothy.(1994, March) . Thinking About the Supermarket Buyer. Mushroom News, 6, 8-9 .

Kuhn, Mary Ellen.(1996, February) . Betting on Fat-Free: does it still pay off? . Food Processing, 57, 64. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

McClure, Barney H. (1995, August) . A Category That's Mushrooming; Mushrooms. Supermarket Business, 50, 47. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

McClure, Barney H. (1990, January) . Mushrooms Grow Into Mainstream Profitability: improved growing techniques, exotic new varieties, and strong merchandising efforts have pushed annual sales to nearly $1 billion. Supermarket Business, 45, 48. [On-line] . Available: Dialog@Carl, IAC Trade & Industry Database, Query: Mushrooms.

McClure, Barney H. (1992, February) . Unearth Healthier Mushroom Sales. Supermarket Business, 47, 23+. [On-line] . Available: Dialog@Carl, IAC Trade & Industry Database, Query: Mushrooms .

Mejia, John. (1991, July 8) . Greater Variety Digs Up Sales of Mushrooms. Supermarket News, 41, 32. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Mogelonsky, Marcia. (1995, October) . Eat Your Vegetables. American Demographics, 10. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Mushroom Company, The. (1994) . The Shiitake Mushroom: An Adventure In Gourmet Cuisine. [Brochure] .

Puzo, Daniel P. (1996, March 21) . A Long Road Home for the Portebello. Los Angeles Times, home edition, p.H12. [On-line]. Available: Lexis-Nexis Academic Universe, Topic: Mushrooms, Additional Terms: Puzo, Source Material: Major Newspapers .

Rice, William. (1996, February 7) . Mad About Mushrooms. Chicago Tribune, p. Good Eating 6. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

St. George, Donna. (1996, November 20) . The Fattening of America. The New York Times, late ed.-final, p.C1 . [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Thayer, Warren. (1996, September) . Lots of Opportunity Seen for 'Healthy'. Frozen Food Age, 45, 1. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

3. Factors Shaping Restaurant and Retail Produce Suppliers

Allen, Robin Lee. (1997, May 26) . Industry, Clinton Administration Agree on $43M Food Safety Policy. Nation's Restaurant News, 3. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Caswell, Julie A, Neal H. Hooker. (1996) . HACCP as an International Trade Standard; hazard analysis critical control points. American Journal of Agricultural Economics, 78, 775-779. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Complicating Matters: though the produce department is enjoying a period of expansion, food safety and labor concerns are weighing heavily on industry executives. (1997, October 20) . Supermarket News, 31. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Food and Agriculture: Asian Foods, Organic Ingredients to Grow. (1997, July 1) . Industries in Transition, 25, 1 . [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Gattuso, Greg. (1997, March 24) . Nature Trails: the two main natural-food players chart a course for rapid growth; natural food retail chains. Supermarket News, 47, 1+. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Groves, Martha. (1997, October 2) . Organic Foods: A Growth Industry. Los Angeles Times, home edition, p.A1. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Hartnett, Michael. (1997, June) . Organic Products: getting down to the nitty gritty; Cascadian Farm Inc. Food & Beverage Marketing, 16, 18 . [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Hennessy, Terry. (1997, April) . No Silver Bullet; safety of produce. Progressive Grocer, 76, 85. [On-line] . Available: Infotrac, Business Index ASAP, Query: Title= No Silver Bullet AND Author= Hennessy AND Subject= Food .

Kasrel, Deni. (1997, October 24) . Market for Organic is Growing. Philadelphia Business Journal, 16, 1. [On-line] . Available: Infotrac, Business Index ASAP, Qwery: Title= Market for Organic is Growing AND Journal= Philadelphia Business Journal AND Author= Kasrel .

Rubenstein, Ed. (1997, June 9) . NRA, Industry, Embrace HACCP System in Attempt to Curb Food-Borne Illnesses. Nation's Restaurant News, 31, 70. [On-line] . Available: Infotrac, Business Index ASAP, Qwery: Keyword= HACCP System AND Nation's Restaurant News AND Author= Rubenstein .

Steinauer, Joan M. (1997, November) . Natural Borne Killers. Incentive, 171, 25, 27.

Sugarman, Carole. (1997, December 31) . Organic? Industry Is Way Ahead Of Government. The Washington Post, final ed., p.EO1. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

U. S. Food and Drug Administration (FDA). (1996, December 17) Hearings of the National Advisory Committee on Microbiological Criteria For Foods, Fresh Produce Subcommittee. Washington: GPO, 1996. Gravani, R: Author . [On-line] . Available: http://vm.cfsan.fda.gov/~lrd/1217fda.html .

4. Trends Shaping the Japanese Shiitake Market

Aging Farmers Dig In Against Imports. (1995, August 21) . The Nikkei Weekly, Asia & Pacific, p.16. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Food and Agriculture Organization of the United Nations (FAO) . (1997, May 22) . Agriculture Data Database Results. FAOSTAT . [On-line] . Query: Data Collection= Crops & Livestock Primary & Derived; Country= World>; Item= Mushrooms; Element= Imports-val; Year= 1995. Available: http://apps.fao.org/lim500/nph-wrap.pl?trade.CropsLivestockProducts&Domain =SUA.

Galinsky, Bob. (1995, July/August) . Japan's Imports of Fruits and Vegetables Top US$2 Billion. Market Asia. [On-line] . Available: www.milcom.com/rap/v23/Japan.html .

Government Aid Boost For Japanese Agriculture. (1995, October 13) . Agra Europe, sec. 1666, p.N4. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Jacobs, Mike. (1996, December 1) . Special Feature: Going With the Grain: The Food Security of Japan. American Chamber of Commerce in Japan Journal, sec. Business. [On-line].

Klotzbach, Tom, Jason Graef, Bob Galinsky. (1994/1995) Japanese Fresh Fruit and Vegetable Import Performance. MarketAsia 1, issue1. [On-line] . Available: www.milcom.com/rap/v11/japanmk.html.

MacKnight, Susan. (1996, July 26) . Big Could Be Bigger: US Farm and Food Sale to Japan. Part 1. JEI Report (Japan Economic Institute of America)1996, sec. 28. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

U.S. Department of Commerce . (1996, July 15) . National Trade Data Bank and Economic Bulletin Board United States Agricultural Trade Office, Tokyo, Japan. Japan's Food Market; Food Market Reports; Annual Marketing Plan. Palazzo, A: Author. [On-line] . Available: STAT-USA .

Pickett, Richard. Shiitake Grower (personal communication, September 27, 1998) .

Rowley, Anthony. (1997, April 15) . Food Imports Up So Tokyo Mulls Changes To Farming Policy. Business Times, sec. Asia, p.10. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

USDA. Economic Research Service (ERS). (1996, November 27) . Vegetables and Specialties. M2 Presswire. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

USDA. Foreign Agriculture Service (FAS). (1996, January 3) . Circular Series FHORT 1-96: World Horticultural Trade & U.S. Export Opportunities. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Watanabe, Teresa. (1996, August 17) . US Feasts on Japan's New Tastes. Los Angeles Times, home ed., p.A1. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

C. Threat of New Entrants

Briggs, Matt. Owner, Cascade Mushrooms (personal communication, May 1998).

Donoghue, John. Research Director, Northwest Mycological Consultants (personal communication, May 22, 1997) .

Donovan, Kevin. Phillip's Mushroom Farms (personal communication, June 10, 1997) .

Mexico Looks East. (1998, March) . Food Manufacture, 48. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Pickett, Richard. Shiitake Grower (personal communication, September 27, 1998) .

Taylor, Hank. Canadian Mushroom Growers Association. Telephone Interview. 13 May 1998.

D, E. Threat of Substitutes & Intensity of Rivalry

British Columbia MAFF: Food industry hailed as job creator in 3rd British Columbia Food & Beverage Month.(1997, September 4) . M2 Presswire . [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Donoghue, John. Research Director, Northwest Mycological Consultants (personal communication, May 22, 1997) .

Keller, Charles. Produce Buyer, United Grocers (personal communication, May 15, 1998) .

Kilby, Suzanne. Broker, Northwest Shiitake Association (personal communication, May 21, 1997) .

Money's Mushroom Breaks Into European Market With Dutch Joint Venture. (1997, April 7). Canada NewsWire [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Monterey Mushrooms General Information Page. (1998, May) [On-line] . Available: www. montmush.com/mo01001.html.

Pickett, Richard. Shiitake Grower (personal communication September 27, 1998) .

U.S. Department of Commerce. National Trade Databank and Economic Bulletin Board (1997) . 0709510000 Mushrooms, Fresh Or Chilled (SIC0182); Merchandise Trade – U.S. Imports By Commodity; Document ID: 947. [On-line] . Available: STAT-USA .

Taylor, Hank. Canadian Mushroom Growers Association (personal communication, May 13 1998) .

IV. MARKETING PLAN FOR OREGON'S BEST MUSHROOMS

King, Timothy. (1994, March) . Thinking About the Supermarket Buyer. Mushroom News, 6, 8-9.

Linda, Gerald, Associates and The Data Group, Inc. (1995, January) . A Qualitative Study of Mushroom Usage and Attitudes. Mushroom News, 24-25.

Money's Mushroom Breaks Into European Market With Dutch Joint Venture. (1997, April 9) Canada NewsWire Ltd. [On-line] . Available: Lexis-Nexis Xchange, Source: News Group File .

Moss, Stephan, David Mitchell, M.CUBED. (1994, October) . Market Analysis of the Mushroom Industry. Mushroom News, 8-25.

Moss, Stephan, David Mitchell, M.CUBED. (1994, December) . Market Analysis of the Mushroom Industry (part II). Mushroom News,10-17.

Pickett, Richard. Shiitake Grower (personal communication, September 27, 1998) .