The Wine Grape Industry At Lake Chelan, Washington

Unabridged Version
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EXECUTIVE SUMMARY

The emergence and expansion of a wine grape and winemaking industry in the Lake Chelan area is promising. Recent plantings, and investments in vineyards and winery planning suggest the industry's physical presence will soon be undeniable. Research conducted for this study suggests the area is currently capable of supporting the cultivation of approximately 200 acres of premium wine grapes[1], and the profitable operation of five to nine small "boutique" wineries[2].

The cultivation of premium wine grapes and production of premium wines provides the greatest opportunity for the emergent industry in the Lake Chelan area, based on a review of market conditions, economics, statewide industry positioning, and the limited availability and high value of most land within the Lake Chelan Area. Premium wines are a growth sector in the wine market, generate the highest profit per bottle, and are the preferred niche for small wineries.

Wineries enjoy the greatest profit margins from direct-to-consumer sales of wine from their tasting rooms; a venue that appears to be particularly well suited to the ambience of Lake Chelan and the volume and type of visitors attracted to the area. Small wineries can be very profitable when they provide a unique tasting room experience centered on a quality wine product. Wineries can begin production immediately with imported grapes, then phase in the utilization of local grapes as they mature, eventually promoting the region's unique grape-growing attributes or *terroir*.

The wine grape industry requires long-term investment in crops that take years to mature and perfect, and wineries that require significant start-up capital. Wine grape production provides an opportunity for diversification of the existing agricultural economy in the Chelan area. Wineries will provide a new type of year-round attraction for visitors, expanding the tourism sector of the Lake Chelan economy. The anticipated, collective economic impacts of the forecasted wineries on the local community warrant supportive involvement from local government, public agencies, and business development organizations.

Based on research focused on the Lake Chelan environment, potential wine grape market, premium wine market, financial analyses, and other factors, the following key findings are presented:

1. **It is feasible to grow wine grapes in the Lake Chelan Valley.** Climate data indicates the base line weather station at Chelan is classified as Region II according to the California grape classification method (2,500 to 3000 annual degree days). Climate risks are generally associated with the potential for severe cold weather damage to plants, especially at sites in higher elevations. Year 2001 annual accumulation of 2,900 degree days was slightly above the forty year average of 2,687 degree days. Therefore, vineyard location is very important.

[1] See Appendix A, page 9
[2] See Section III, "Production and Market Forecast"

2. **State-wide annual production of wine grapes will continue to increase through at least 2005.** Of the 24,000 acres of wine grapes planted in Washington by 1999 just 70 percent or 17,000 acres were of bearing age. The remaining 7,000 acres, plus an additional 5,000 acres that were planted during 2000 and 2001, will be reaching maturity and increasing crop yield each year until 2005. The competition for market share in Washington will continue to grow.

3. **Quality of wine grapes is a major factor in determining price.** In general, wineries in Washington State are seeking grapes with quality sufficient to produce premium, super premium and deluxe wines. To obtain the desired quality wineries are increasing their participation in the operations of vineyards and will generally specify viticultural practices and require quality assurances. A successful grower must consistently deliver a product that meets or exceeds the quality desired by the winery.

4. **Establishing a vineyard will cost approximately $15,000 per acre and $3,000 to $4,000 per acre per year to operate.** Vineyard establishment costs are spread over four years, the time required to plant and maintain the vines until plant maturity. Operating costs to produce wine grapes are about $2,000 per acre plus overhead, financing, land and equipment, profit, management fees, and other fixed costs. Good financial management is critical to a successful operation.

5. **Conversion of land from orchards to vineyards will be strongly influenced by economic factors.** Growers should consider planting wine grapes if the return on the new investment is likely to exceed their present returns from tree fruits. Availability of financing to establish a vineyard is an important constraint. Obtaining financing will be easier for those growers who have contracts with wineries for the crop. A successful farm conversion from tree fruit orchard to vineyard will require growers to invest in education and training.

6. **Successful early crop marketing may be difficult for Lake Chelan grower.** Without an actual crop to sell, initial marketing efforts will rely on selling the potential of a specific site to produce the desired varietals with the required quality. When vineyards that have already been planted reach maturity, and Lake Chelan wine products are produced with those grapes, the region's potential will be "proven".

7. **Small wineries have the greatest potential for profitability and sustainability in the Lake Chelan area.** In general, wineries producing from 2,000 – 10,000 cases annually are more profitable than larger wineries, in spite of their higher per unit cost of production. Wineries producing approximately 5,000 cases per year appear to yield the best returns, shortest equity payback period, and quickest debt recovery period.

8. **The wine industry at Lake Chelan will begin with the construction of at least two wineries by 2003 and total five by 2006.** A small number of entrepreneurs are now financially invested and actively engaged in developing vineyards at Lake Chelan. Lake Chelan Winery plans to produce its first bottling from locally grown grapes in 2002. Another winery is in the final stages of design and permitting for a south shore

location along Hwy 97A. Several other groups are in various stages of planning and development, and three additional parties are considering entry into a winery business. Assuming the first couple of wineries are successfully launched and perform profitably, they will likely provide a catalyst for investments from entrepreneurs who are presently "waiting in the wings."

9. **A regional reputation for quality wines will be critical to profitability of all local wineries.** Wine sales data and financial analysis shows that higher quality wines account for a majority of sales revenue and profits of small wineries. Quality wines will generate customer satisfaction and repeat customers. "Word of mouth" recommendations from satisfied customers will encourage others to visit Lake Chelan wineries.

10. **A high percentage of sales through tasting rooms will be key to initial sales and long-term profitability. Visitor demand is estimated to be adequate for supporting sales in as many as nine tasting rooms.** Along with quality wine and strong pricing, a key to achieving the highest profitability among Lake Chelan area wineries will be their ability to maximize the percentage of direct sales to consumers. Wineries sell directly to consumers through their tasting rooms; increasing tasting room sales significantly increases the bottom line. A growth in the number of "serious wine consumers" visiting the Lake Chelan area will directly impact the percentage of sales through local tasting rooms. The rate of this growth, although subject to many external factors, can be directly influenced by effective marketing strategies.

11. **An active local wine industry organization and a supportive public sector can facilitate the start-up and long-term success for a Lake Chelan wine grape industry.** The Lake Chelan (Wine) Grape Growers Association has a leadership role in the development and long-term success of the local wine industry. The organization has (and will continue to) provide: forums for growers and vintners to communicate with each other; educational workshops and information specific to the region; opportunities for sharing equipment; cooperative-marketing programs to promote local wines and wine tourism; and a single-point-of-contact for related business organizations and policy makers, elected officials, educational institutions, and other wine industry associations (e.g., Washington Association of Wine Grape Growers). The public sector (e.g., Chelan Chamber of Commerce, Chelan County Port District, Wenatchee Valley College, WSU and Cooperative Extension, etc.) may support private industry initiatives through a variety of means, including: education and training; participation in special events and marketing; research; strategic planning; and business incubation services.

I. GRAPE/WINE INDUSTRY OVERVIEW

The wine grape industry is vertically integrated; vineyards (growers) provide the raw material and wineries produce the value-added product. Typically, wine is sold directly to consumers through winery tasting rooms, and also sold through a distribution network to retailers. Wine grape growers have two basic choices: either market their produce by contracting directly to a winery, or establishing a winery themselves to utilize their grapes. Although many wineries raise some of their own grapes, they also diversify their supply chain by purchasing additional grapes. Diversification helps to spread risk of crop losses or to fulfill needs for varieties that the winery needs to obtain in additional volume, or for unique qualities. There is a limited spot market for excess grapes if they are of good quality, and in a niche where wineries are short of required supply.

Wine Market Conditions

Conditions of the global wine grape industry will affect the Lake Chelan markets through competitiveness and increasing the complexity of wine marketing. Growers face increased competition as wineries have more vineyards from which to obtain a supply that meets their specific needs. Consumers have more choices in regional and imported wine products available at competitive prices.

During 2000, a strong U.S. dollar relative to European currencies contributed to an increase in imported wines. Importation of Italian wines increased by 23 percent, French wine imports increased by 12 percent, Australian wine imports were up by 40 percent and Chilean wine sale increased 17 percent. Concurrently, the export of wines (mostly from California) declined (cawg.org, 2000).

Another factor in global competition is that other countries have increased or are replanting vineyards to more popular varieties. European countries are expected to increase production of high quality premium wine grapes by 15 percent. This is a significant amount when considering that Europe produces about two-thirds of the world's wine. These upgraded vineyards should start reaching maturity in 2003 (Economist, 1999).

In 2002, California, which produces 90 percent of all U.S. wines, experienced a decrease in wine sales. While still reaching record sales of $6.5 billion, table wine sales increased by only 2.9 percent, the slowest in over ten years. Causes for the change in sale were attributed to the weaker U.S. economy, not only from job cuts but from reduced spending on business entertainment and increased sales of imported wines. Imported wines now hold a 23 percent share of U.S. markets (Appel, 2002).

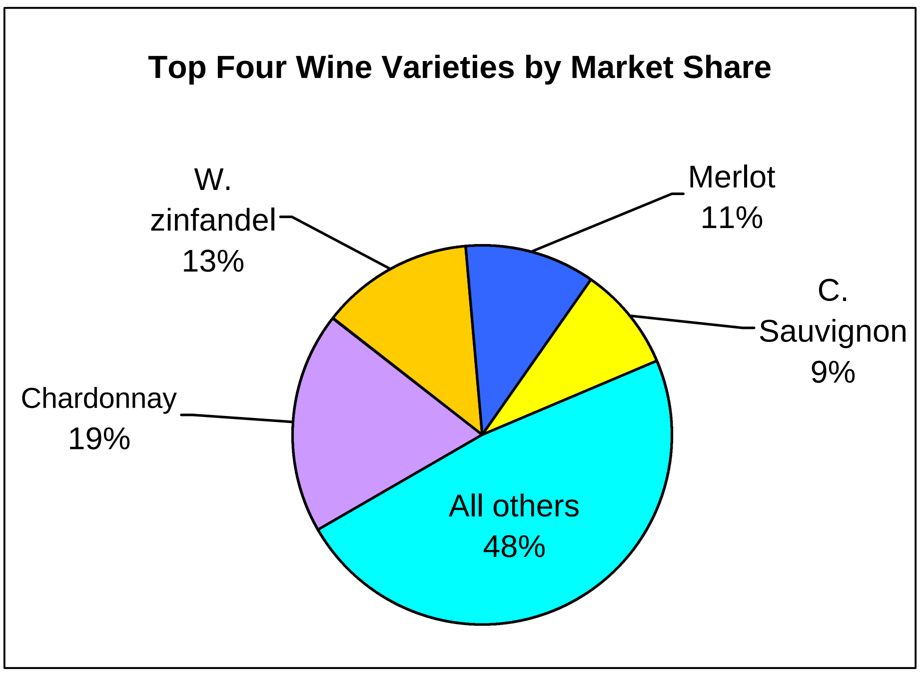
Competition from other beverages is also increasing. Flavored malt coolers (with the introduction of ready to drink products from Smirnoff, Bacardi, Skyy, Stolichnaya and Sauza) are targeted at 20 and 30 year old women, traditionally wine drinkers, and pushed by huge advertising budgets.

Recent reports by the Wine Market Council suggest that growth of the United States wine industry during the 90's is attributed to a strong economy with associated increases in disposable income and to recent increases in advertising expenditures by the major brands. By comparison to other beverage industries (beer, soda pop, and designer water) the wine industry has not invested in creating market awareness of its products.

Markets for wine products are segmented by price and the quality reputation earned by winning tasting awards and the image as projected by a winery's marketing strategy. Price generally provides an indicator of quality where image differentiates one winery's products from their competitor's. Starting at the low product price range, wines are classified as "economy," "sub-premium," "premium," "super-premium" or "deluxe" and finally "ultra-premium". Wine grapes grown for the highest quality wines are most often in high demand and receive prices well above average.

In terms of product preference four varietals wines account for 52% of all wine sold in the United States, Figure 1. These are Chardonnay presently leading with 19% market share, White Zinfandel (13%), Merlot (11%) and Cabernet Sauvignon (9%). While consumers continue to prefer white wines, the red varieties are increasing in consumer appeal and demand for blush wines have decreased.

Figure 1
A C Nielsen/Adams supermarket scanning data, 2001 at wineinstitute.org.

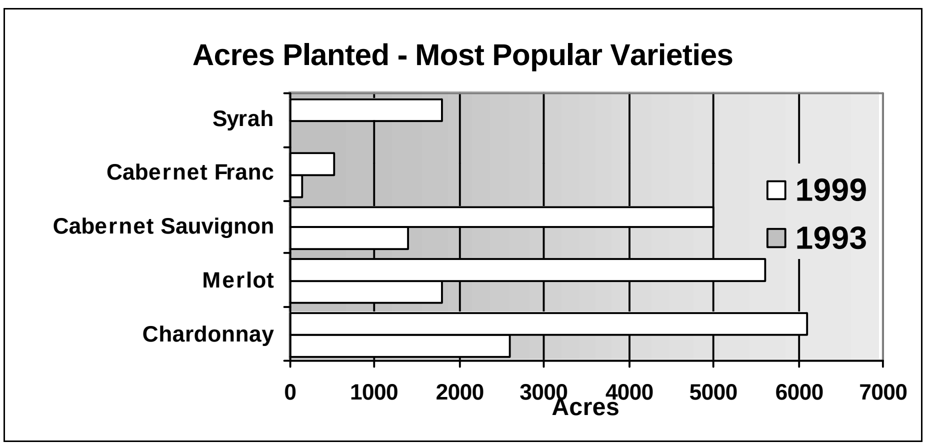


Regional Competitive Forces

As of 2001 there are 29,000 acres of wine vineyards in the State of Washington, a record 100,000 tons of wine grapes were utilized, a 9% increase over the 2000 harvest (Washington State Agricultural Statistics Service, 2001 harvest results). About 20% of the total acreage has not yet reached bearing age and harvest levels can be expected to increase until these vineyards reach maturity.

During the 90's strong prices for wine grapes resulted in more than doubling of the acreages of vineyards in Washington State from 11,000 acres to an estimated 24,000 acres in 1999 and increasing to 29,000 acres by 2001. During the 90's the total acres of white wine grapes increased by 80 percent and red wine grapes increased by 338 percent. Leading varieties planted are Chardonnay, Merlot Cabernet Franc and Cabernet Sauvignon Figure 2. While these increases are in response to demands for wine grapes it will be important to avoid over planting which could result in depressed prices.

Figure 2 1999 Washington Wine Grape Acreage Survey
Washington Agricultural Statistics Service



Competition can also result in new opportunities. Reputation for quality in Washington wines has attracted the attention of several large national corporate wineries. Canandaigua and Vencor the second and fourth largest wine producers in the United States have purchased wineries in Washington and are marketing these wine labels on a National level as premium products. This national marketing should lead to increased recognition of Washington as a wine growing region, increase sales of Washington wines and therefore increase the need for wines and grapes.

Lake Chelan wine products will be in competition for market share with all other wines available. Hence the consumer has the power to purchase based on quality, price, brand familiarity, reputation, past experience, and novelty. Because most wine in the U.S. is sold in grocery stores, it is reasonable to assume that competition in the Lake Chelan market for local residential customers will include imported wines, California wines and other Washington Wines. This competitive factor may be somewhat offset if a significant number of local residents adopt a “buy local” preference, and or choose to purchase their wine directly from the local wineries.

Industry Advertising

Growth in the sales and consumption of wine since 1994 has been encouraging. However, year 2000 sales of 565 million gallons have not matched the high point 587 million gallons seen in 1986. A recent Wine Marketing Council report indicates that consumption decreases in the late 1980’s occurred during a period of rising per capita disposable income. Decreases in consumption were preceded by reduction in advertising which peeked at $115 million in 1980 (a rate of 76 cents per case) and dropped to a low of $23 million in 1994 (a rate of just 15 cents per case). Advertising expenditures began to rise again in 1995, and has grown to $87 million by 1999.

Grape Production and Wine Sales Trends

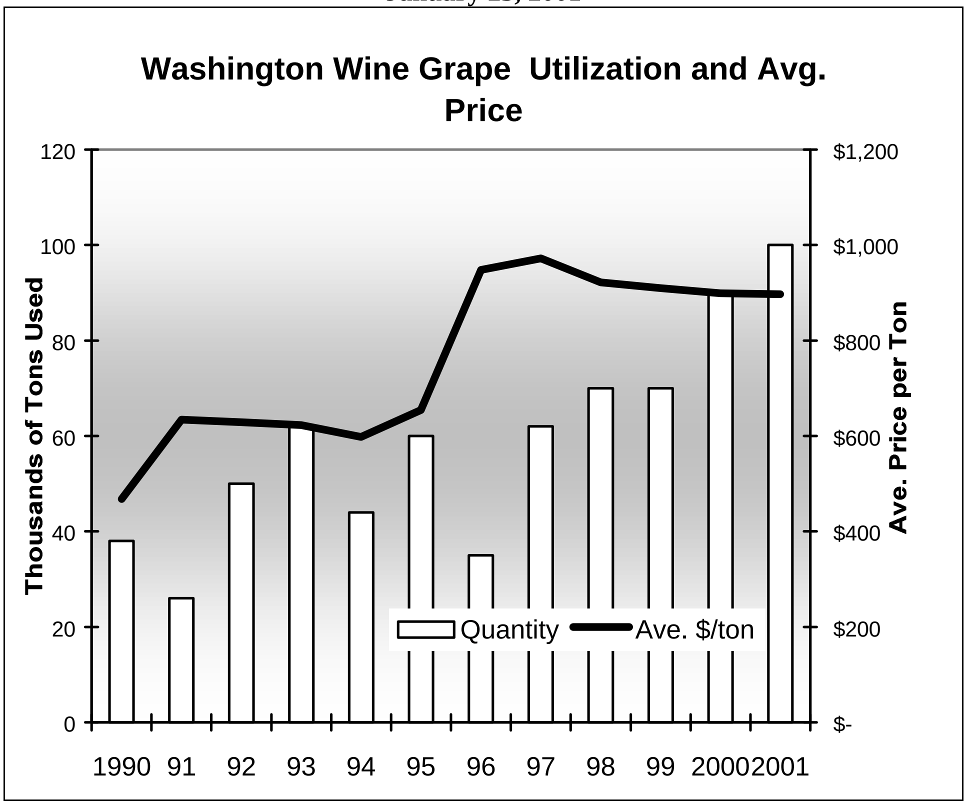
Wine Grape Production

Production of wine grapes will continue to increase in Washington State as existing acreage continues to mature. A 1999 crop survey indicated only 70 percent of wine grape acreage was of bearing age. Given the four to five years required for a vineyard to reach maturity, it will be 2003 before all of the (1999) acreage is in full production. Additionally another 5,000 acres of vineyards were planted in 2000 and 2001. These will mature in 2004 and 2005. As demonstrated by Figure 3 the volume of wine grapes utilized has increased over the last six years, while average price has slowly decreased. The 1996 jump in prices resulted in a shortage of wine grapes after winter freezing temperatures damaged many vines.

Prices reflect the balance between supply and demand. High prices occurred in those years where demand exceeded supply. Prices drop as grape production continues to increase without a corresponding increase in wine sales. In order to remain competitive as supply starts to exceed demand, growers will need to work with wineries to select varieties, quantities and qualities that will have a commercial value five or more years in the future.

In addition to market demands, another limiting factor to sales of wine grapes is the capacity of wineries to hold and process grapes. Crop production may be greater than the volume utilized to make wine. This constraint can influence a winery’s buying decisions. With limited storage capacity a winery may be more selective as to which grapes it purchases, particularly in a year where harvest volume exceeds storage capacity.

Figure 3. Washington State Agriculture Statistics Grape Report January 23, 2001

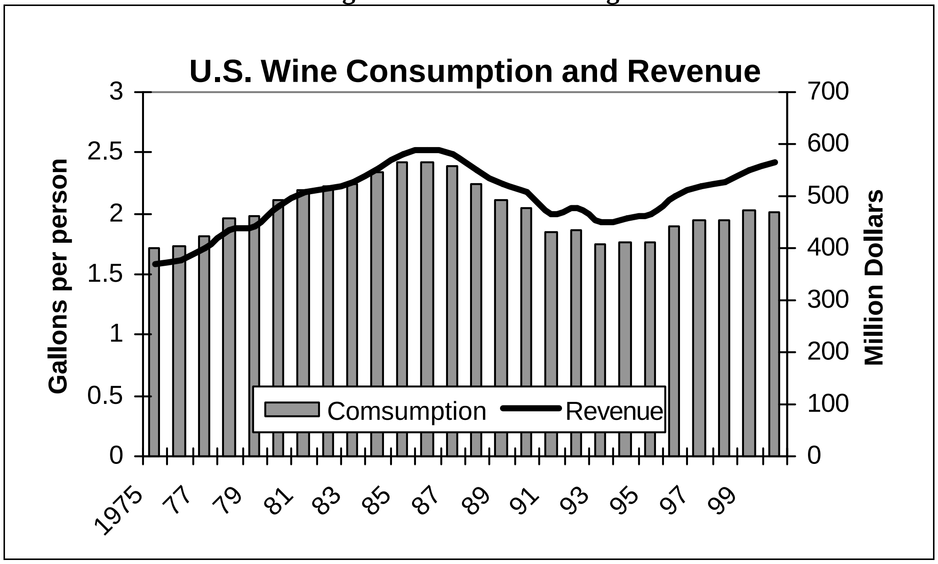


Wine Sales

According to the California Wine Institute the total U.S. wine sales of domestic and imported wines have increased from 368 million gallons in 1975 to 565 million gallons in 2000, Figure 4. Individual wine consumption during that same period increased from 1.71 gallons per person in 1975 to a high of 2.58 gallons per person in 1982 but then dropped to 2.01 gallons in 2000.

Analysis of California wine sales during 1999 indicated that premium wines held 23% of the market share but resulted in 52% of the total revenue. Super premium wines held a16% market share with 27% of the revenue, and deluxe wines just a 7% market share with 25% of the revenue. Wines in the sub-premium and economy classes held 77% of the market share but only 48% of the total revenue. (Wine institute, 1999) A recent analysis indicates that consumer preferences may be shifting as sales of sub-premium and economy wines, priced below $8, are down by 3 percent while wines premium priced wines $8 to $15 have increased by almost 13 percent (Moran, 2002).

Figure 4. wineinstitute.org

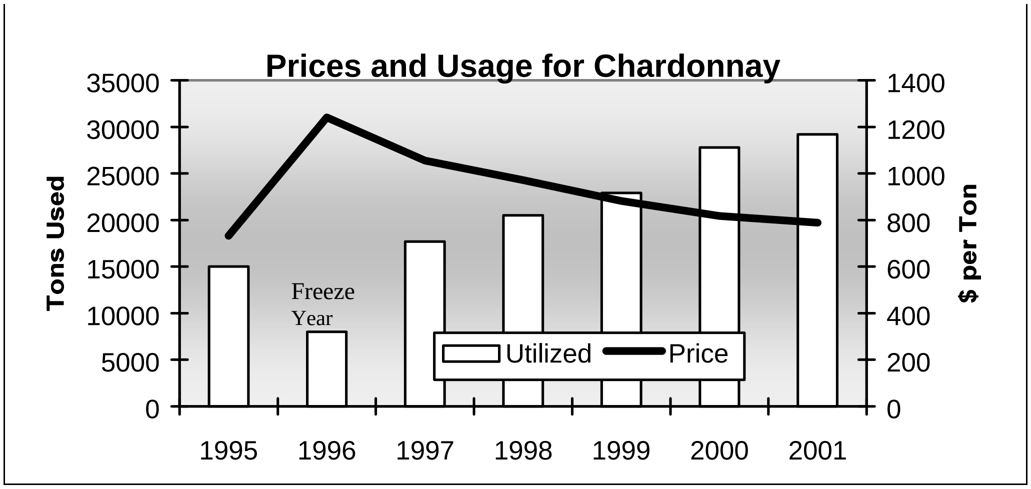


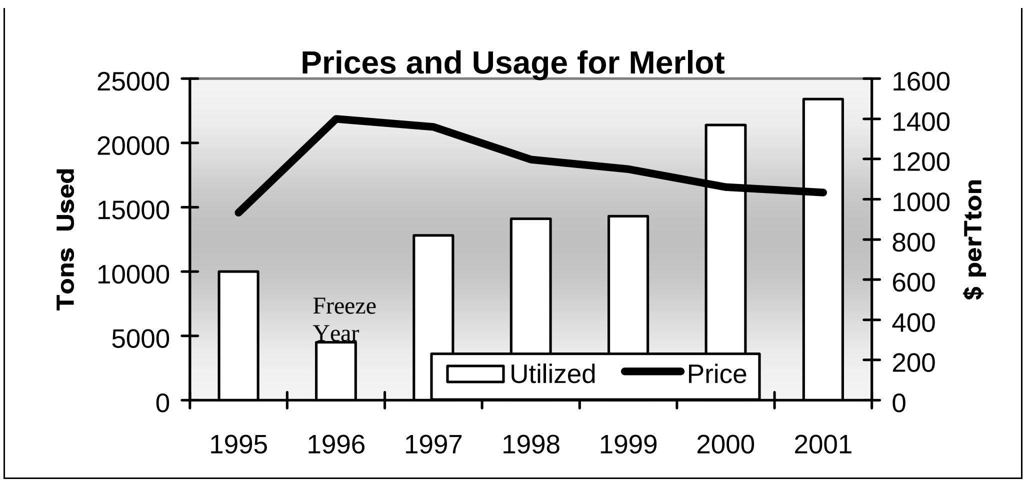
In considering product mix, Lake Chelan winery managers should understand that while low-priced economy wines may account for 62 percent of all sales these products only represents 32 percent of the industry's revenue. Premium wines, super-premium, and ultra-premium wines represent a smaller 37 percent of wine sales, but generate 67 percent of the industry's revenue. This reinforces the concept that quality is more profitable than quantity.

Prior to 2001, sales of Washington wines were growing at a rate of 12% per year (Washington Wine Commission). During 2001 table wine sales continued to increase, but at a much lower rate of less than 3%. In comparison to sales of other beverages, wine products appear to be much more sensitive to economic conditions. One reason for this economic sensitivity is a result of the lower demand in the travel and entertainment markets for ultra and luxury priced wines, which may be closely linked to reduced business spending on travel and entertainment (Franson, 2001, Appel 2002).

Sales of wine grapes are also influenced by the quantity of supply. Figures 5A and 5B demonstrate how the prices for Chardonnay and Merlot grapes have responded to increased production since 1995. A severe freeze in 1996 resulted in significant crop loss and a shortage in supply that resulted in a rapid increase in prices. Since 1996 average prices paid for wine grapes has become lower while production increases. Figures 5 A & B show how average prices paid for Chardonnay and Merlot wine grapes have decreased from 1997 to 2001 while tones of wine grapes utilized has increased. Average prices paid in 2001 are now near the values paid in 1995.

Figure 5
Washington Agriculture Statistics Service Grape Reports





Regulatory Issues

A variety of federal, state and local regulations affect the wine industry. Regulations include taxes, bottling and labeling rules, sales restrictions, and zoning that restricts land use.

Federal Bureau of Alcohol, Tobacco and Firearms (BATF) Requires a license for all manufacturers of alcoholic beverages and regulates labeling of bottles. BATF regulations recognize a "viticultural area" as one of several kinds of appellations of origin for U.S. and imported wines. Appellations of origin are used on wine labels to denote the geographic origin of the grapes used to produce the wine. BATF regulation authorizes several ways to denote this geographic information. Table 1 lists designations and their respective requirements that are relevant to growers and winemakers in the Lake Chelan area.

Table 1. Federal Labeling Regulations

To use the Appellation Name	**BATF Requires the following:**
To label with the name Chelan County "County Designation"	At least 75% of the grapes used to produce the wine must be from the labeled county. NOTE: "Napa County" is a county designation. "Napa Valley" is a viticultural area,
To label with Lake Chelan Valley "Viticultural Area Designation"	At least 85% of the grapes used to produce the wine must be from within the confines of the viticultural area stated on the label
Washington State "State Designation"	At least 75 percent of the grapes used to produce the wine must be grown in the state indicated on the label.
Estate Bottled	The winery must be located in, and gets all of its grapes to produce a particular wine from, a common viticultural area and from vineyards that it owns or controls,
Proprietor Grown or Vintner Grown	May be used when the winery and its vineyards are nor all in the same viticultural area.

Washington State Regulations are administered by the Liquor Control Board, Department of Revenue, Department of Labor and Industries, and Wine Commission. Many other state regulations for environmental protection, water rights, fish and wildlife, chemical applications will be similar to those presently affecting existing agricultural practices.

- The Washington State Liquor Control Board requires domestic wineries, wine growers, and wine distillers to apply for and purchase licenses and permits to operate.

- Washington State assesses taxes on sales of alcoholic beverages. There are a number of regulations affecting the sales of alcoholic beverages.

- Washington Wine Commission collects an annual assessment of $6 per ton on vineyards and $0.04 per gallon on wineries. This assessment is used by the Commission to achieve its mission and goals for promoting the Washington Wine Industry.

County and City Regulations
Many good vineyard and winery sites are located along the north shore of Lake Chelan. Much of this area is also located within the City of Chelan urban growth boundary. Urban growth

areas tend to be residential or are intended to become residential. Additionally some higher density commercial uses are allowed. It is highly probable that, over time, any vineyards located within the urban growth boundary will need to contend with an increase in non-agricultural land uses in their neighborhood. Additionally, land will become more valuable for residential development than for agricultural uses.

Wineries will also need to address land use issues if they are to locate in settings outside of commercially zoned areas of the City or County. While a winery is an agricultural based activity, it is also a commercial activity and may, depending on zoning, need to obtain land use permit approvals. A winery will be attracting customers and therefore traffic. Additional traffic on rural or residential roads is often perceived by neighbors as a negative impact on their lives and property - resulting in controversy about land use decisions and possible delays in permit approvals.

Chelan County has proactively reviewed and adjusted its development codes to facilitate economic revitalization via agricultural tourism, direct marketing of farm produce, wineries, and other emergent economic activities. The code amendments, consistent with the county's Comprehensive Plan and compliant with the Growth Management Act, were adopted in January 2002. The amendments allow for the establishment of wineries as permitted uses, outright, in some zones; and require conditional use permits in other zoning districts. The net effect of these codes is that winery developers have clear guidelines and processes that will allow them to evaluate the legal parameters of a project on a given site in a timely manner, and to begin the permitting process if required.

II. WINE GRAPE PRODUCTION AT LAKE CHELAN

It is estimated that by the end of 2002 there will be about 60 acres of wine grapes, many of which are in the immature stage of production.[3] It is further estimated these acres will mature by 2006 and yield 240 to 270 tons of wine grapes if not affected by severe winter conditions. The dominant varieties planted are Riesling and Merlot.

At present, a local winery market for Lake Chelan grape production is limited. However, a cursory survey of members of the Lake Chelan Grape Growers Association in 2001 indicates that at least five entities are in various stages of developing small wineries with a production range of 2,000 to 10,000 cases annually. Until wine grapes and wine is commercially produced in the Lake Chelan Area, there can be no assessment of the "terroir" of the area. At present there is no local commercial wine available for quality testing. However, some Lake Chelan vineyards should have fruit suitable for wine production and quality testing with the 2002 crop.

The following assessment of the conditions for producing quality wine grapes in the Lake Chelan area shows no major site limitations to growing *vinifera* (wine grapes), other than periodic winter damage. It should be noted, however, that a more formidable limitation to future production may be the $15,000 per acre estimated cost to establish a vineyard. This expense will be incurred over the four to five year start-up period when there will be immature production and minimal ability to generate revenue from crop sales.

Physical Assets

Initial efforts to secure a contract from a winery will be assisted by selling the vineyard site's potential. Each proposed vineyard site has unique assets in the form of its combination of soil, slope, elevation, microclimate, solar aspect, slope, water/irrigation and other micro site attributes (collectively referred to as "terroir"). A grower will need to discuss the site specific qualities with potential customers (winemakers). They will evaluate the site, looking for a combination of elements that suggest a "terroir" capable of producing a quality wine.

Climate

Eastern Washington's Columbia Basin has proven itself as one of the premier grape growing areas in the world. Can the lands of the Lake Chelan area in the higher latitudes of north central Washington be a part of this success? To answer this question, one must address the fact that

[3] Several local growers estimate that as many as 100 acres of wine grapes will be planted by the end of the year (2002)

experience shows the limiting factor for producing a consistent high-quality grape crop in Washington is cold injury.

Many cultural and/or agronomic practices take this cold injury limitation into consideration. The following discussion is focused on the basic commercial viticulture practices employed in eastern Washington, with special attention applied to avoiding cold injury for an emerging grape growing industry in the Lake Chelan Area. Other cultural and/or agronomic practices that are key to grape production in the Lake Chelan Area are also discussed.

Generally, grapes grow best between the 35th and 50th latitudes in the northern hemisphere; the Lake Chelan Area is located at approximately 48^{0} north latitude. Within these latitudes the common factor for quality wine grape growing sites is the availability of moderate and uniform amounts of water, at least during the maturation period of the grapes. For the Lake Chelan Area, water control through irrigation is very important to meet this requirement. In the case of the northern latitudes (above 50 degrees north) the colder climate prevents grapes from assimilating sufficient sugar for full ripeness, leading to tart, over-acid wines.

A specific site's "effective latitude", however, may be modified by the slope of the land, providing the opportunity to grow a range of varieties with different climatic requirements all within the same region. For example, lands on a gentle south slope may have an "effective latitude" several degrees lower and warmer than a level surface and grape plants with higher heat requirements will respond accordingly.

From a wine grape growing perspective, the best wines are produced from grapes that just achieve maturity in a given site; a long, slow even ripening of the grapes imparts the maximum flavor, balance and concentration to the resultant wine.

In eastern Washington, there are three primary criteria applied to determine the suitability of climate for grape production (Watson 1999). <u>The first criterion is the length of growing season</u>. Within the 45^{o} to 48^{o} latitude region of Washington, midseason ripening grapes require 130 to 170 days to mature. The average growing season in the Lake Chelan basin below 1,500 feet elevation is about 200 days. Additional time is required after harvest for vines to achieve dormancy. If a killing frost should occur in the spring, fruit buds could be lost and the crop production may be significantly reduced. Frost occurring in the fall before vines go dormant curtails photosynthesis and the natural dormancy process, making vines more susceptible to winter injury.

<u>The second criterion is the accumulation of heat throughout the growing season.</u> This heat summation, expressed as degree-days (heat units), is measured by taking the average of the maximum and minimum daily temperature in degrees Fahrenheit and subtracting 50 degrees. Daily heat units are added throughout the growing season to obtain a total for the year. Total heat units should be in excess of 1,700 to allow grapes to ripen (Winkler 1974). If accumulated heat units exceed 3,500 grapes tend to be low in acid and quality can suffer.

Weather data was collected for several sites in the Lake Chelan area by Wilbur-Ellis Co. using technology that performed continuous temperature recordings, allowing calculations of growing degree days every fifteen minutes when temperatures were above 50 ^{o}F, between March 1 and

October 31. It is shown in Table 2 that degree day calculations for each site using this 'Adcon' method were greater than was calculated using the average daily temperature method. Thus, to avoid errors when comparing degree day data it will be important to ensure that all the data was calculated using the same method.

Table 2. Comparison of Heat Unit Calculations (Source: Wilbur-Ellis, Adcon and NWS; all data is for year 2001).

Comparison of Heat Units (Degree Days) calculation Methods				
Weather Station	Elevation above sea level	Adcon Method	Average Daily Temperature Method	Variance
2885 - Col. River	685 ft.	3,058	2,719	339
2971 – Chelan View	1,342 ft.	2,622	2,279	343
2978 – Howard Flat	1,234 ft.	2,916	2,553	363
3248 – Manson	1,178 ft.	3,040	2,717	323
4328 – Bear Mt.	1,367 ft.	2,956	2,717	239
9947 – Apple Eye	1,599 ft.	2,676	2,402	274
Chelan NWS	1,110 ft.	ND	2,908	

National Weather Service (NWS) data recorded between 1948 and 2001 shows mean heat units of 2,677 with a range between 1,918 and 3,343 for the Lake Chelan area. Almost one-half of the accumulated annual heat units were between 2,529 and 2,825. This indicates the Chelan NWS weather station would be classified as a region II by the California grape classification method. Table 1 also demonstrates how the seven sites monitored compared to each other with Chelan appearing to be the warmest location. Comparative data was only available for the 2001 growing season.

Although an average heat accumulation requirement is discussed here, there is a relative difference in heat unit requirements among wine grape varieties as shown in Table 3. Matching the proper variety with the site specific growing conditions will have an effect on the ability to produce a high quality wine grape in sufficient volume to be profitable.

Table 3.
Relative Heat Unit Requirements of Grapes Grown in Eastern Washington (Wolfe 1999).

HEAT UNIT REQUIREMENTS		
Low	Moderate	High
Riesling	Chardonnay	Cabernet Sauvignon
Gewurztraminer	Lemberger	Cabernet Franc
Pinot Noir	Syrah	Sauvignon Blanc
Pinot Gris	Merlot	Sangiovese
Pinot Blanc		Chenin Blanc

<u>The third criterion is severely cold winter temperatures.</u> Well-hardened grape vines can usually withstand temperatures around 0^{o} F without injury. At temperatures below -10^{o} F, bud and wood loss can be expected. Should warm temperatures occur just before a severe cold period, vines are de-hardened by the warmer weather and become more vulnerable to cold injury. One of the more severe wood losses, particularly on the southwest side of trunks, occurs when direct

or snow-reflected sunlight warms grape trunks during cold spells. When the sun sets, temperatures drop rapidly, and trunk tissue becomes very susceptible to cold damage.

Although Lake Chelan provides moderation, it is not unusual for winter cold snaps to drop below 0^o F for a few days each winter and occasionally below -10^oF. The coldest weather occurs with outbreaks of cold arctic air. Thus, grape wood loss can be expected in the Lake Chelan area some years. Although the minimum temperatures may vary in the Lake Chelan region it should also be kept in mind that there is a relative cold hardiness among varieties as shown in Table 4.

Table 4. Relative Cold Hardiness of Grapes Grown in Eastern Washington (Wolfe 1999).

RELATIVE COLD HARDINESS		
Low	Moderate	High
Merlot	Sauvignon Blanc	Riesling
Sangiovese	Lemberger	Chardonnay
Sermillon	Cabernet Sauvignon	Gewurztraminer
Syrah	Cabernet Franc	Pinot Noir
Viognier		Pinot Gris
		Pinot Blanc

Although the Lake Chelan area's climate can result in cold injury to vines, it provides favorable conditions to potentially grow high quality grapes. Warm sunny days and cool nights characterize the growing season and provide an excellent balance to grape sugar and acid. The local arid conditions reduce disease problems associated with high rainfall and high humidity. Finally, because of the northerly latitude of the Lake Chelan area, summer days are relatively long, compensating for area's growing season (shorter than experienced in lower latitudes) and heat units (generally lower than experienced in more southern latitudes). It is important to note, however, that micro climates have been shown to vary greatly, and collecting site-specific degree days data is necessary to select the proper variety of wine grape and the proper viticulture practices.

Soils

Grapes can be grown successfully under many soil conditions, as demonstrated by the variety of sites producing grapes in the Pacific Northwest (Stevens 1999). Soil conditions, however, may play an important role in determining the cost of establishing and maintaining a successful vineyard. The "ideal" soil for a vineyard has been described as being a deep, well-drained soil of medium or medium to light texture with no layers that restrict the movements of water or root growth. Wine grapes, with proper management, can be grown in soils that significantly deviate from this "ideal" soil. (Klock, 2002)

As more emphasis is placed on the quality of grapes produced, the uniformity of the vineyard becomes even more important than when just the volume of production is the basis for measuring success. The soil properties and topography will play an important role in how uniform the production and quality is across a vineyard. Factors such as soil texture and depth will influence soil moisture levels, thus affecting how the crop matures and its cold hardiness in different areas. Viticulturists recognize that the variation in soil properties must be known and understood to maximize the quality and quantity of grapes grown on a given landscape. This is particularly true in the Lake Chelan area

The most prevalent and capable soils for growing grapes in the Lake Chelan area is the Chelan series, namely the Chelan gravelly sand loams on 0 to 45 percent slopes. The Chelan series consists of well-drained, moderately coarse textured soils that formed in pumice, volcanic ash, and loess over non-sorted, gravelly, cobbly, or bouldery deposits of ablation glacial till (Soil Survey of Chelan Area, Washington, u.d.). These soils range in elevation from 1,200 to 1,800 feet; the upper elevations are likely inhospitable for grape growing because of cold winter conditions. The average annual precipitation is 10 to 15 inches, average annual air temperature is about 50^{o} F, and the frost-free season is 180-200 days. Chelan soils are currently used for orchards, pasture, range, wildlife habitat and small grain.

Other soils series besides the Chelan series could support grape production in the Chelan area. Total gross acreage for these soils in the Lake Chelan grape growing area is about 3,500 acres. Urban and other land uses appears to have, or soon will, take about 1,500 acres out of production, thereby leaving about 2,000 acres of production land over the next ten years. Based on information from a recent survey of land use by farmers in the Lake Chelan area, it is unlikely that more than 10 percent or 200 acres might go into grape production in the next ten years. Most *vinifera* production would be expected along the southern slopes of the north shore of Lake Chelan. This estimate is based on year 2001 agricultural economic conditions, particularly in the tree fruit industry, and may vary considerably in the future.

Marketing Wine Grapes

Growing wine grapes is a custom production operation. The harvest must satisfy the wine maker's demands if the grower is to achieve the desired crop prices. A business/marketing plan should identify the market segment in which the grower intends to compete and indicate the ability of the grower to work with the wine maker. The grower needs to understand all factors that bear upon a winery's demands for variety and quality (e.g., market forces that will influence trends in wine sales, varieties of wine sold, and prices received for wine).

The largest market segment for Washington wine grapes are makers of premium wines. Although higher quality wines represent a smaller market share of the total wine market, they generate the greatest profit per bottle. Wineries in the super and deluxe quality segments will require fewer grapes, but will pay higher prices for those grapes; they will demand the highest possible quality and they will be active participants in the vineyard operation.

To become successful growers will need to focus on one core strategy: To produce the highest quality wine grapes possible. To implement this strategy the vineyard will need to vertically align production with Lake Chelan boutique wineries, and to vertically integrate with wineries outside of the Lake Chelan area to diversify the risk and obtain capital and expertise from additional sources.

Alignment with a winery that intends to produce a top quality, award winning product will increase the reputation of the vineyard whose grapes made that wine. The old adage 'the proof is in the pudding' applies to the wine industry as top prices are paid for those grapes that produce the best wines. Recognition of quality through reviews, competitions and customer choice can be a useful marketing tool.

Customer Targets

Vineyards have a limited number of customers to target. Many of the wineries in Washington produce at least part of the grape supply they need. Initially the most likely target customers will be wineries in the Lake Chelan Valley. Chelan growers will need to seek out other wineries that need new suppliers or are intending to expand product line. Finding these customers could be a considerable task. Suggestions for narrowing the search include networking with winemakers at Washington Wine Grape Growers Association meetings, or other associations and the use of internet to learn about a winery, its wine maker and products. Another strategy is to target wineries in Western Washington where growing conditions limit the production of quality grapes. (During 2001 Eastern Washington vineyards produced record harvests yet Puget Sound area vineyards had crops that did not receive sufficient degree days to fully ripen.)

In Washington State there are now over 170 wineries (potential customers), most of which are independently owned and operated. When entering into a contract it is important for the grower to understand the winery's needs and intentions. Will the winery need grapes only until their own grapes mature, to diversify their risk of weather related damage, to obtain a variety that they may not be able to grow with the desired quality or to obtain a long term secure supplier of quality wine grapes? Moreover, will the winery be producing premium, deluxe or super premium wines and how will that decision influence the quality and price of wine grapes?

As wineries seek a higher quality of wine grapes, they also seek a greater level of control over the crop, dictating viticultural practices and closely monitoring aspects of grape maturity. Growers will need to please their customer by providing a wine grape that meets or exceeds the quality demanded for the wine products produced. Growers will need to invest in cultivating their relationship with the winery just as they cultivate the crop. Both will require a long term commitment to obtain the desired returns.

At present, a local winery market for the Lake Chelan grape production is limited. A cursory survey of members of the Lake Chelan Grape Growers Association in 2001 indicates that at least five entities are in various stages of developing small wineries with a production range of 2,000 to 10,000 cases annually. Until wine grapes and wine is commercially produced in the Lake Chelan area, there can be no assessment of the "terroir" of the area. At present there is no local commercial wine available for quality testing. However, some Lake Chelan vineyards should have fruit suitable for wine production and quality testing with the 2002 crop.

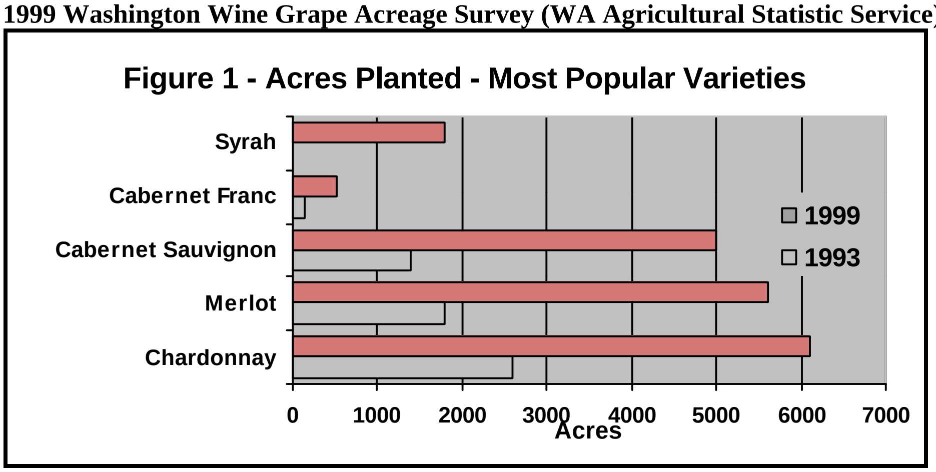
Competitors

There are currently 29,000 acres of wine grape vineyards in the State of Washington. The Washington State Agricultural Statistics Service published their 2001 harvest report showing that a record 100,000 tons of wine grapes were utilized, an increase of 9% over the 2000 harvest. This production will be used to make 4.9 million cases of wine with an estimated retail value of $576 million. (Ashton, 2001). About 20% of the 29,000 acres has not yet reached bearing age and harvests should be expected to increase until at least 2004.

From 1993 to 1999 the acreage planted to white wine grapes expanded from 7,100 acres to 10,500 acres, a 48 percent increase. Red wine varieties jumped from 4,000 acres to 13,500 acres or 338 percent. Leading varieties planted during this period are Chardonnay, Merlot, Cabernet Franc and Cabernet Sauvignon (Figure 6).

The reputation for quality among Washington wines has attracted the attention of several large national corporate wineries. Candaigua and Vincor, the second and fourth largest wine producers in the U.S.A., have joined Stimson Lane as purchasers of several Washington wineries; they are now marketing these wine labels on a national level as premium products. National marketing of Washington wines should hopefully increase sales of Washington wines and thereby increase the need for wine grapes.

Figure 6
1999 Washington Wine Grape Acreage Survey (WA Agricultural Statistic Service)



Pricing

Pricing for wine grapes must cover, at a minimum, the cost to produce the crop. This should include recapture of the establishment cost; overhead costs; financing; and expense incurred for acquisition of land or equipment.

Growers should be cautious about using the statistical average price paid for each variety of grapes. This average price reflects past activities not current trends and may not account for other economic considerations such as cost of technical assistance or financing assistance.

Winemakers will ultimately determine the quality of the grapes they want to buy based on what aspects of the grape they want to use in producing their style of wine. Quality is therefore a somewhat subjective value determined by the buyer. For example one of the indicators of quality is the ^{o}Brix (weight of sugar to volume of water). The ^{o}Brix enters into the decision as to when to harvest the crop. The amount of Brix desired by the winemaker will determine when to harvest.

Understanding this relationship of yield to quality is relevant to the decision about how much a crop can/should yield. If a grower is paid on a per ton basis, then dropping a portion of the crop in order to increase the ^{o}Brix could lead to serious financial problems.

Wine grape quality is judged on a number of factors that could influence pricing. These factors include a uniform berry size and consistency among the grapes, shape and color, flavor, balance, structure and texture, maturity of tannins, pH, tartaric acid and other fruit conditions. Thus, a good working relationship between the winemaker and grower is very important when all these wine gape quality factors are considered in the production of a fine wine and returning a reasonable profit to the grower

Growers should also understand the various issues of contracting sales. It is extremely important for the grower to know the winery's goals, products and financial strength as well as the market segment the winery is pursuing. These variables influence the type and quality of grape needed. A winery that has financial strength may be able to offer financing assistance or other important technical assistance to the grower. The basic contact pricing formulas are:

- **Per ton pricing** tends to emphasizes yield over quality. On a per ton basis growers may have difficulty in covering their costs especially if a winemaker wants the yield reduced to improve grape quality.

- **Per acre/block pricing** sets a price that will be paid for the grapes from a specific area. This gives the grower fixed revenue regardless of how many tons are produced.

- **Performance standards** such as ^{o}Brix (sugar) content give rewards/penalties for performance. These performance standards need to be based on a history of that vineyard. A performance standard can encourage quality in the attributes measured.

- **Bottle price multipliers** sets the price paid for the grapes as a function of the price paid for the wine. This can help the vineyard and winery share the profits or losses of the wine. The grower must clearly understand how the bottle price is determined when making the calculations for payments.

Promotion

Promoting a particular vineyard's wine grapes will be accomplished, in part, by development of good quality wines. Reputation for quality and consistency will be necessary to develop new markets for grapes. The marketability of Lake Chelan grown grapes will be strongly influenced by the quality of wine produced. As the quality of the wine improves, the reputation of the vineyard also increases. To begin promoting a vineyard and/or site, growers may consider inviting winemakers to tour the site, offer site specific data about growing conditions, and provide samples of grapes grown in the area.

Implementation Strategy

It is recommended that growers contract with wineries on a per block or per acre basis, specifically designating which vines are under contract to that winery. This allows the winemaker to monitor their grapes and direct actions to get the quality they want. By working with more than one winery the grower can diversify risk, and will learn a variety of methods for producing a quality crop.

Initial marketing efforts will need to demonstrate that the growing conditions at Lake Chelan are equal to or superior to other proven growing areas. One useful tactic is to describe site specific growing conditions, soils, irrigation supply, freeze protection, and heat units[4].

Entry into the Wine Grape Market

A penetration strategy is intended to help introduce a new product to potential customers. Once the market is aware of the product, strategies are modified to increase market share. Three basic entry strategies are identified below:

Establish an experimental crop to demonstrate the vineyards "terroir." Produce a small crop of several varieties of wine grapes to demonstrate the potential to your customers. The goal is to establish a risk-free trial relationship with winemakers, showing that desired results can be achieved. The next step would be to expand the vineyard/crop to meet the customer's demands.

Accept lower prices to attract interest from wineries. With an unproven crop the winery will be taking a risk in purchasing the grapes and the price will be lowered accordingly. After the vineyard has demonstrated its ability to consistently produce a quality grape, the price structure can be adjusted.

[4] Note: Chelan has an accumulation of heat units that is similar to Walla Walla, Sunnyside, and Prosser.

Vertical alignment with the winery to merge efforts, share risk, and essentially become a partner with the winery. The winery may be able to provide technical expertise to help the grower reduce the learning curve, becoming a quality producer in a shorter period of time.

Production Forecast

At present there are about 60+ acres of wine grapes planted or that will be planted by spring 2002. Most of these vines will reach maturity in 2003-2004. In order to produce a high quality product, full production of wine grapes will probably not exceed 4 to 4.5 tons per acre and may be 2 to 3 tons per acre at sites with cooler temperatures. Therefore, based on existing acres of vineyards, wine grape production at Lake Chelan in five years (2006) could reach about 200 to 240 tons. This production is likely to be sufficient to meet the initial demands of the estimated five small wineries that may be established at Lake Chelan. However, the existing local acreage may not be sufficient to fulfill the demands if all five planned wineries reach full production.

Forecasting production for a ten year horizon is dependent on how the market for Lake Chelan wine grapes materializes during the next few years. If the early vineyards prove their ability to produce a wine grape that has the attributes desired by wineries, then demand will encourage growers to plant more acres of wine grapes. If demand is low, then it is anticipated that only an additional 60 to 80 acres of wine grapes may be planted. Hence by 2001 production should range from 400 tons to 530 tons, adequate to meet the demands of five local wineries. Interest from wineries in other areas should increase as quality issues are addressed.

Financial Analysis

The estimated cost to establish a vineyard ranges from $12,000 to $15,000 per acre, incurred over a four year start-up period. Variables in the budget include quantity and quality of vines, type of trellising, land acquisition costs, and the interest for financing the project. Table 5 lists start -up expenses necessary to plant and maintain the wine grapes up to the year they reach maturity/full production.

Annual operating costs to produce wine grapes shown in Table 6 are estimated at $2,000 per acre, depending on viticulture practices. These costs are those that are incurred by production activities such as labor, operation of equipment, fertilizers, pesticides, pest control, freeze prevention, irrigation, laboratory testing, crop insurance and maintenance of plants and trellises.

In addition to operating costs are the overhead costs for financing the vineyard establishment, land acquisition, construction of buildings, buying equipment, and property taxes. Overhead costs can add from about $500 to $2,000 per acre to the cost of a crop. The grower should also include an allowance to cover their minimum required return on investment. This minimum return should be no less than what the grower could have made on some other investment with similar risks.

Table 5. Adopted from Establishment and Annual Production Costs for Washington Wine Grapes (Gebers, etal. 1997)

Estimated Cost to Establish a Vineyard				
	First Year	Second Year	Third Year	Fourth Year
Site Preparation	400			
Planting (5 X 10) =968 vines	2000			
Trellising (2 wire)		2000		
Mowing & Weed Control	700	350	350	350
Fertilization	100	80	80	80
Disease & Insect	100	200	200	200
Canopy Management		300	250	250
Dormant Pruning	240	100	300	300
Replanting		50	50	50
Net Harvest cost (revenue)			100	200
Total Operating Expenses	3,540	3,080	$1,330	$1,430
Financing @ 8%	140*	460**	710**	920**
Overhead (prorated capital costs for land, equipment, irrigation, buildings, mgt fees, etc.	500	500	500	500
Total Cost To Establish	$4,180	$4,040	$2,540	$2,850
Accumulative Total	$4,180	$8,220	$10,760	$13,600
* financed for 1/2 year, **1/2 of current year financing plus previous years				

Table 6 Adopted from Establishment and Annual Production Costs for Washington Wine Grapes (Gebers, etal. 1997)

Example operating budget at full maturity – Riesling			
	Year 5	Year 6	Year 7
Weed Control Mowing	250	250	250
Fertilization	125	125	125
Disease & Insect	50	50	50
Canopy Mgt.	200	200	200
Pruning & Training	120	120	120
Replanting	50	50	50
Harvest @ 3.5 tons/acre	525	525	525
Total Operating	1,420	1420	1420
Overhead (includes establishment financing @ 8% x 20yrs)	1,495	1,495	1,495
Total Cost of Crop	$2,915	$2,915	$2,915

Understanding the full and accurate costs of producing a wine grape crop is necessary for the grower to understand the minimum price for the crop. Appendix D contains a spread sheet to assist growers in accurately identifying all of their costs. Many industries have learned that failure to implement accurate cost accounting can lead to errors in product pricing and eventual financial problems.

III. WINE PRODUCTION AT LAKE CHELAN

Production & Market Forecast

A survey of members of the Lake Chelan Grape Growers Association indicates that at least five individuals/partnerships are in various stages of planning or developing small wineries in the range of 2,000 to 10,000 cases per year. Many of these entrepreneurs have agricultural backgrounds and management experience. If all of these wineries materialize the combined volume of production in 2006 will be in the range of 18,000 to 27,000 cases per year.

Proving the quality of locally produced wines will influence the future demand and, therefore, production of wines in the Lake Chelan region. Proving quality is a years-long process that involves winning awards at tasting competitions, favorable reviews by professional wine tasters, favorable reviews from wine club tastings, and generating publicity from those reviews. Once the quality has been established, the wines can be more profitably priced and effectively marketed. Winemakers can begin now to prove their ability to produce quality wines by utilizing imported grapes and, where available, local grapes from experimental vineyards and hobby growers.

Lake Chelan Grape Growers Association members who are actively involved in viticulture and winery development are very aware of the unique quality positioning of Washington wines, and the importance of establishing a reputation for quality wine production. Several of these emergent winemakers have hired professional winemasters and wine consultants to ensure their ability to produce wines of premium quality and shorten the "learning curve" for local growers and winemakers.

Two factors could delay the establishment of five wineries by 2006:

- If the current economic recession results in lowering the volume of wine sold and/ or reduces the number of visitors to Lake Chelan, then the industry's development may be slower than expected (impeded by the tightening of credit and financial resources, as well as a more cautious attitude among the people who are considering entering the business).
- If, for whatever reasons, the first couple of wineries to open fail to meet their sales projections, suffer obvious financial and/or operational setbacks, the second tier of entrepreneurs may delay, or abandon their commitment to fully implement their plans.

How many wineries will the market support in the Lake Chelan area?

Fluctuating global, national, and state economic conditions, wine production, and consumer trends will impact the market demand for wines produced in the Lake Chelan area, just as they will for all wineries, regardless of size or location. However, an underlying distinction between small, boutique wineries (like those targeted for Chelan) and larger ones is the importance of tasting room/cellar door sales of wine.

To be successful, small wineries must sell as much of their wine as possible out the cellar room door, directly to consumers at retail prices. It follows, then, that an estimate of the potential consumer demand for wine from Chelan area winery cellars would help to determine, approximately, how many wineries might be viable in the area. Because the resident population of the Lake Chelan area is relatively small, an estimate was generated based on the number of visitor trips to Lake Chelan. The narrative below summarizes the methodology, assumptions, and conclusions derived from a forecasted estimate of the tourist/visitor demand for wines purchased directly from the tasting rooms and cellar doors of Lake Chelan wineries.[5]

A review of Chelan County visitor demographics strongly suggests that a majority of the annual visitors to Lake Chelan appear to have very much the same demographic profile as "Wine Consumers" (Table 7). It seems that Chelan's popularity as a tourism destination has a special appeal to people who are also more likely to purchase premium wine than the average person. Based on currently available data[6], it is estimated that within 5 years (by 2006), approximately:

- 460,000 visitor trips will be made to Lake Chelan
- 75,000 of these trips (16% of all visits) will include visits to area wineries / tasting rooms
- 59,000 tasting room visitors (78% of all tasting room visitors) will purchase wine
- 118,000 bottles (9,800 cases) of wine will be sold out of Chelan area tasting rooms to visitors[7] amounting to approximately $1,770,000 in total sales (assuming average sale price is $15 per bottle)

The purchase of 9,800 cases of wine would theoretically fulfill the tasting-room-sales percentage requirement for approximately eight wineries of the 5,000 case production level (25% of sales) , or nine wineries of the 2,000 case production level (55% of sales).[8] (Note/reminder: This sales volume estimate is based solely on a conservative approximation of visitors to Lake Chelan. It does not include potential tasting room sales to local residents.)

With regard to the five wineries projected to be in operation by 2006, the above referenced forecast of tasting room sales bodes well. The 9,800 cases that assumedly will be purchased by visitors represents 36% of all wine (27,000 cases) to be produced by the five wineries. This well exceeds the tasting-room-sales percentage requirement for the five wineries, combined (24% or 6,350 cases). This means that the area's five forecasted wineries, as a group, have a good potential to meet, if not exceed, the levels of profitability identified in the financial analysis, at least in the area of cellar-door sales (Section III, Financial Analysis; and Appendix E). The success of individual wineries, however, will still be subject to many factors, not the least of which will be profitably selling the balance of their wine production into wholesale markets.

[5] Additional explanatory data is provided in Appendix F.
[6] Caution should be exercised in reference to these estimates. When more precise or current data becomes available, it should be substituted for the figures provided.
[7] On average, two bottles of wine are purchased by buyers of wine in tasting rooms (Folwell, 1989)
[8] The tasting-room-sales percentage "requirement" as used here refers to the percentags applied by size of winery to satisfy the assumptions in the financial analyses for this study (Section III, Financal Analysis; and Appendix E).

Marketing for Wineries

Wineries may sell their product directly to consumers or to retail outlets; they also may sell through an intermediary wholesale distributor. Consideration of the needs of each of these target customer groups is critical to the creation of a marketing strategy, and should govern the products, packaging, pricing, and promotions employed by winery. Marketing approaches for individual Lake Chelan wineries should fully embrace and link to efforts by state and regional wine industry associations.

Large wineries producing generic wines are, for the most part, locked into the three-tier system of distribution that governs the cost of getting wine to market. They have the product volume and marketing budgets to get their low-priced wines on the shelves of grocery stores, nationwide, where most wine in the U.S. is purchased. Small premium wineries also market and distribute their (higher-priced) wines in this arena. However, their limited volume, narrower market, and higher prices (which must be maintained to offset their higher cost per unit) limit their access into this system.

Small wineries do, in fact, have a variety of complementary and other unique marketing approaches and venues available to them. Success for a small winery in the Lake Chelan area will be dependent on market diversification, reaching consumers through as many different channels as possible. The following describes several marketing venues for the two primary categories of sales: retail (direct to consumer from the winery); and wholesale.

Recommendations for Regional Marketing

It is in the best interest of the industry, statewide, for vineyards and wineries to establish and maintain a reputation for producing only premium and ultra premium wines, as stated by the Washington Association of Wine Grape Growers and the Washington Wine Commission This goal will allow the industry to remain competitive in a global and national market place that has an increasing number of wine products. This goal must be embraced by the Lake Chelan area vintners.

Everyone involved with the Lake Chelan wine grape industry will need to help establish and maintain a collective identity to distinguish the region in this increasingly competitive business. Individually, each Lake Chelan vineyard and winery must strive to present a product that supports the image of the entire region. This collective branding effort will help to build customer awareness and familiarity, increasing the likelihood that consumers will purchase a Lake Chelan wine instead of another (e.g., California or Yakima Valley wine product).

Branding as a marketing tool needs to start as soon as possible, and should not wait for an AVA (appellation) designation from the Bureau of Alcohol, Tobacco, and Firearms (BATF). To identify a wine product as originating from the Lake Chelan area, while preserving a winery's individual identity, bottle labels may: state the winery's address; feature a common graphic symbol; or include wording such as "produced and bottled at". Once AVA designation is obtained then branding can be moved to the front label. Strong branding has been associated with increased product awareness and sales, customer loyalty, and higher levels of customer satisfaction (Bond, 2001), The Lake Chelan Wine Grape Growers should make establishment of a Lake Chelan brand, and AVA designation, a high priority.

Recommendations for Marketing Individual Wineries

Each business must create a cohesive visual and verbal message that is portrayed on all products, packaging, advertising, tasting rooms etc. Within the Lake Chelan area each vineyard and winery will need to establish their own brand, consistent with the overall Lake Chelan image yet unique to the individual business product lines.

Be consistent from year to year in producing a high quality wine. Consumers must be won and kept through invariably good products and service. Establish strong customer relations by building and maintaining a customer database that facilitates direct marketing through wine clubs, e-mail and direct mail.

Market Channels

Retail Sales Venues

Tasting Rooms/Cellar Door

Retail sales are the most profitable for the winery, avoiding the discount necessary when selling wholesale (e.g., a case of wine that sells for $180 in the tasting room may sell to a wholesale buyer for $120 who then marks it up for the consumer). To achieve profitability small wineries depend heavily on offsetting their high per unit investment and operation costs by selling a high percentage of their wine at retail prices. The primary venue for retail sales is the winery itself – through its tasting room, cellar door, or gift shop. As a percentage of total sales, tasting rooms account for 15% to 55% of all sales in the assumptions for this report's financial analysis. Individually, however, some very small wineries may regularly achieve 80% of total sales via their tasting rooms. The importance of this venue to the profitability of boutique wineries and the exceptional potential it presents for wineries in the Lake Chelan area is significant. For that reason, a more detailed analysis of tasting rooms and recommendations for their management is included later in this section.

Farmers Markets

Although not currently an option, there is an organized effort to legitimize the sale of wine by licensed vintners at Farmers Markets throughout Washington State. This effort could significantly extend the direct-to-consumer reach and sales for boutique wineries.

Wholesale Venues

Restaurants/hotels

Restaurants and hotels (conferences) that offer bottled (aka non-house) wine are key customers of boutique premium wineries, or the distributors that handle a small winery's product. Approximately 13 percent of all wine is consumed in restaurants. Some small winery owners, in fact, target restaurants exclusively in their wholesale marketing strategy, and personally perform the sales and delivery services.

Specialty restaurants and steak and seafood restaurants tend to purchase more wine than general/family restaurants. A (dated) survey of Washington restaurants found that only 25% (of survey respondents) purchased more than 25 cases of non-house wine per month (Ochsner, etal, 1984). However, wine consumption has grown considerably since this survey was conducted, and the range of quality and pricing on restaurant wine lists has expanded.

Grocery Stores

Grocery stores move the greatest volume of wine in the U.S.A. This is not surprising, considering that approximately 80 percent of all wine is consumed in the home. Access to this market on a large scale for very small wineries is limited, and will largely depend on a winery's ability to influence a wholesale distributor to represent their product. However, Lake Chelan vintners have an opportunity to work through regionally-based distributors, or personally, to market their products to grocers and specialty shops within the Chelan area, and in fact, throughout much of North Central Washington. The appeal of locally produced wines to visitors and local residents provides a competitive edge for grocery sales within the region.

Distributors

Alcoholic beverage wholesale distributors are major players in wine-to-market commerce nationally and internationally. As suppliers to grocery stores, restaurants, and liquor stores they move high volumes of wine. However, they represent another cost in the distribution system to vintners, reducing profit margins.

A new class of distributors is emerging on the Internet with implications for wineries. By 2005 these business-to-consumer merchants are expected to move $1.4 to $2.9 billion of wine, approximately five to ten percent of the retail wine market. Only one or two distributors are likely to lead the online market. (Swatzberg, 2000).

Customer Analysis

Winery customers include wine consumers, retailers, and wholesale distributors. Information about each of these customer groups and associated sub-groups should be periodically reviewed and considered in designing market strategies. Sources of current information about most of these market segments are available through membership in wine industry organizations, through industry newsletters, and from many websites maintained by universities, government agencies, and industry associations.

- The wine consumer, of course, is the most important determinant of a marketing strategy. Table 7 lists some of the wine consumer demographics useful to preparing advertising strategies.

Table 7. wineinstitute.com and Newsweek

Wine Consumer Demographics	
55% female	65% with incomes above $40,000
52% professionals,	90.1% white
61.5% college educated	48% with incomes over $60,000
87.5% reside in metro areas,	80 % of wine is consumed at home
71% employed	80% of wine consumers are over 40 years old.
55% living in the south or west	13% of wine is consumed in restaurants
63.5% married	

More detailed information is accessible on websites such as:

- www.winemarketcouncil.com/research_summary.asp#market
- http://winebiz.com See Wine Business Monthly, December 1994 issue
- www.wineinstitute.org/communications/statistics

In addition to understanding wine consumers, overall, Lake Chelan area vintners will want to tailor their consumer marketing programs to match the traits and preferences of visitors and local residents; the population that likely constitutes the greatest potential market for Chelan area wineries. It appears that the demographic profile of many Lake Chelan area visitors match the profile of serious wine consumers (likely to initiate visits to winery destinations wherein they purchase quality wines). Research to verify or refute this assumption, and to determine specific visitor preferences would help to forecast sales and design promotions for this market segment. An estimate of the number of visitors to Lake Chelan that may frequent Chelan area wineries is provided later in this section, under the heading "Tasting Room Sales Potential".

Products

A thorough knowledge of consumer preferences, and trends should guide a winery's selection of which varieties of wine to produce. A mix of wine beverage offerings is recommended. In the financial analysis for this study, it is assumed that the product mix of each winery is 60% white and 40% red wine (however, this should not be inferred as a recommended ratio for a mix). Small wineries may include in their product line a lesser known, unique variety for which they can establish a specialty market.

In terms of consumer product preference, four varietals wines account for 52% of all wine sold in the United State: Chardonnay, presently leading with 19% market share; White Zinfandel (13%); Merlot (11%); and Cabernet Sauvignon (9%).

While consumers continue to prefer white wines, the red varieties are increasing in consumer appeal and demand for blush wines have decreased. Since 1991, sales of blush wines have decreased by about 38%, white wine sales have decreased by about 16% and red wines have increased approximately 124%. (Wine Institute, 2001) Consumer tastes will continue to change as people seek new and unique experiences.

Regardless of variety, all wines considered for the Lake Chelan area should be of premium quality. The growth segment of the wine market, internationally, is for premium table wines (Folwell, 2002). Analysis of California wine sales during 1999 indicated that premium wines held 23% of the market share but resulted in 52% of the total revenue. Super premium wines held a16% market share with 27% of the revenue and Deluxe wines just a 7% market share with 25% of the revenue. Wines in the Sub-premium and economy classes held 77% of the market share but only 48% of the total revenue. (Wine institute, 1999) A recent analysis indicates that consumer preferences may be shifting as sales of sub-premium and economy wines, priced below $8 are down by 3 percent while wines premium priced wines $8 to $15 have increased by almost 13 percent (Moran, 2002).

Product And Services Mix

Aside from wine beverages, a broad selection of other goods and an array of services may be included in a winery's product line. In a cursory review of wine industry newsletters and articles, it was discovered that (anecdotally) many small wineries report 15% to 30% of their tasting room/winery revenues are derived from goods and services other than wine beverages.

> *Non-wine product examples include:* service tools (e.g., bottle stoppers, corkscrews); accessories (e.g., glasses, wine racks); wine luggage (e.g., cooler bags); record keeping (e.g., cellar books for wine connoisseurs); education/fun (e.g., scent and tasting kits); gift sets (– e.g., cheese knife; bar tools); specialty foods; clothes (e.g., hats, shirts, with wine themes, logos); art (e.g., tapestries; pottery; furniture (e.g., designer chairs, tables)
>
> *Types of services offered by small wineries include:* food service; tastings and tours (for which admission is charged); hosting special events (e.g., weddings, anniversaries, reunions); concerts and dramatic events; seminars (courses in wine aromas, secrets of food and wine pairing).

Pricing

Markets for wine products are segmented by price. Pricing appears to be largely determined by the quality reputation of a wine, earned by winning tasting awards, favorable reviews, and the image as projected by a packaging and the winery's marketing program. Price generally provides an indicator of quality, whereas image differentiates one winery's products from their competitor's. Starting at the low product price range, wines are classified as "economy," "sub-premium," "premium," "super-premium" or "deluxe" and finally "ultra-premium". Wine grapes grown for the highest quality wines are most often in high demand and receive prices well above average.

The lower-priced wine market is dominated by a handful of large wineries, because they can use economies of scale to keep prices down. The higher price ranges are where smaller wineries can successfully compete, because margins are higher and the market is narrow and less expensive to target for advertising. A small, exclusive label has a cachet that a huge-volume wine can never achieve.

Wine pricing varies based on quality level, and whether sold through the tasting room or sold wholesale. In the financial analysis for this study, it was assumed that:

- all the wineries would produce premium quality wines
- the price of wine sold via a winery's cellar door would average $15 per bottle
- the price of wine sold to wholesale markets would average $10 per bottle

Promotions

Promotional opportunities for small wineries are numerous and varied. In the case of boutique wineries, the premium quality of the product and association of the wine with an indelible image of the state, region, and the winery are key goals. Small "boutique" wineries typically engage in independent marketing of their product and their wineries (tasting rooms), but also pursue marketing initiatives in partnership with other regional wineries and community organizations The promotional mix for a small winery-marketing plan may include:

Regional marketing initiatives in partnership with other local wineries (and/or industry associations, and Chambers of Commerce, Port Districts, etc.) such as:

- Special events (e.g., harvest festivals, spring releases tastings, etc.)
- Wine Trails (Wine trails are groups of wineries that are related geographically and work cooperatively to market their area as a destination for wine tours. They may take responsibility for signage, sponsor special event programs that feature wine and food pairings throughout the year, print maps, etc.)
- Maps that pinpoint the location of wineries in a region
- Regional websites – typically designed to allow a potential customers to click on a list of wineries, view a map to locate them, follow links to individual wineries and to other attractions in the area.
- Image and branding of the region. (This may include securing an appellation designation for their region from the Bureau of Tobacco, Firearms, and Alcohol (BATF).
- Restaurant and grocery store campaigns – working with local retailers and restaurateurs to feature local wines (or participate in such events organized on a large,

statewide scale, by the Washington Wine Commission. Their programs include Winemaker dinners, wine and food pairing demonstrations, and opportunities to taste and learn more about the diversity and quality of the state's wine industry.)

Independent promotions, such as:

- Branding of wines with an attractive and compelling label and logo
- Internet website
- Printing of the logo and website address on everything from labels and corks to brochures, stationery, newsletters and business cards
- Issuing news releases about quality awards, new products, events, etc.
- Direct mailings / emails
- Tasting room specific promotions

Tasting Room Marketing Strategies

The primary venue for marketing and selling wines directly to the consumer is the winery tasting room. Strategies for effective tasting room marketing are becoming increasingly creative and niche oriented. Several key components to consider in a comprehensive strategy are presented below:

- ❑ Wine beverage offerings
- ❑ Product and services mix
- ❑ Displays, signs, literature
- ❑ Customer service/staff training
- ❑ Ambience
- ❑ Marketing programs

Wine Beverage Offerings

A selection of varieties and a range of differently priced wines will broaden the potential for wine purchases within a tasting room. Although all wines produced by a winery should be for sale, it is recommended that the wines available for tasting be somewhat limited, and periodically changed/rotated (e.g., monthly) to pique the interest of regular/returning customers. Special vineyard or varietally-labeled wines underscore the uniqueness of an individual winery and the region, and add to the quality of the purchasing experience for tasting room wine buyers. Some wineries feature "Buy of the Month" specials, or offer discounts for case purchases.

Product And Services Mix

Aside from wine itself, a broad selection of other goods and an array of services are offered by small wineries. Although current, accurate figures are not available, it appears that most small wineries report that 15% to 30% of their tasting room/winery revenues are derived from non-wine goods and services.

Non-wine product examples

- Service tools – wine thermometers; wine funnel; tastevins; mixing and pouring accessories; bottle stoppers; bottle spouts; Corkscrews; decanters
- Other Accessories – glasses; wine glass coasters; champagne bucket; wine charts & posters; Wine Racks; cleaning – glass drying racks; specialty brushes; stain removers
- Wine luggage – cooler bags; wine totes; wine hampers (like picnic baskets)
- Record keeping – journals; registers; cellar books for wine connoisseurs
- Education/fun – scent and tasting kits; living grapevines sold in tube; wine cellar plans; multi-media educational videos and CDs for the wine consumer; books; cork bulleting board frames; cork trivet frames; wine bottle to lamp/candle conversion kits
- Gift sets – cheese knife; bar tools; wine server tools; cutlery
- Specialty foods – gourmet quality oils; chocolates; picnic supplies of cheese, pate, and salami . Branded gourmet foods often sell well in tasting rooms and, when they carry a winery's name and logo, customers will think of the winery whenever they partake of the foods.
- Clothes – hats, shirts, jackets (wine themes, logos)
- Art – tapestries; posters; pottery; magnets. Small wineries frequently sell works by local artisans to their visitors who are looking for unique, regionally produced crafts of fine quality.
- Furniture – designer chairs, tables

Types of Services offered by small wineries

- Food service – food encourages people to sit and enjoy themselves, and people get hungry on winery trips
- Tastings and Tours – Barrel samples, year-round reserve tastings
- Hosting special events – like weddings, anniversaries, reunions, etc.
- Special events – specialized "release" tastings, concerts
- Seminars –Wine related educational workshops are growing in popularity. Some wineries offer daily seminars on a regular basis. Workshops generally range from one to four hours and are often limited to groups of twelve or less. Prices for workshops vary from $10 - $150 per person. Subject matter varies, targeting wine-savvy consumers and new wine enthusiasts with different offerings, as illustrated by the sample list of subjects and class titles below:
    - Courses in wine aromas
    - Blending – how to blend your own wines
    - Secrets of food and wine pairing
    - Appellation-based tasting,
    - "Picnic in the vineyard," tours that takes a small group through all the elements of grape growing and winemaking and closes with a food-and-wine picnic under a trellis in a vineyard.

Displays, Signs, Literature

Displays – As in any retail business, effective merchandising includes decisions about how to best place and display items to sell. A standard practice is to place the most popular items in areas which require customers to walk through the rest of your wine and non-wine displays. Physical placement, display shelves and cases, and spot lighting are typically used to attract the customer's attention to special items. Items may be grouped to give patrons ideas on how they could use the products at home, and can result in selling two or three items instead of just one. Wines should be attractively displayed and easy to find. Special vineyard or varietally-labeled wines can be set off in separate display sections. If offering wines on special discount, periodically rotate the types of wines offered so repeat visitors find something "new".

Signage/Printed Material - Signs and literature should be up-to-date, attractive and easily readable. The visitor should be able to see all prices without having to ask for assistance. Food pairings can be suggested with tasteful signs, artwork, or photographs. Include winery logo and website address on literature and signs.

Customer Service/Staff Training

Customer service is especially critical for selling wines out of the tasting room. Winery staff should be prepared to:

- Greet each visitor upon entry
- Assess each visitor's level of wine knowledge and respond appropriately
- Help visitors decide on purchases – make suggestions
- Speak knowledgeably about all wines offered, new releases
- Speak knowledgeably about food and wine pairings
- Offer tourism advice about the region
- Offer locations (stores and restaurants) where the wines can be purchased near their own homes
- Invite patrons to join a wine club (if one exists)
- Ask patrons if they would like to be on an e-mail list
- Conduct formal and/or informal customer research

Staff training takes many forms:

- General wine training: Workshops and classes offered by community college, CDs and videos
- Winemaker speaking to staff
- Conducting blind tastings of winery varietals versus other wines from the state
- Demonstrations of food and wine pairings
- Field trips to other tasting rooms

- Mentor training

Ambience

The atmosphere of a winery tasting room is an important factor in attracting new visitors, and in generating an experience that entices previous visitors to return and encourages others "word of mouth" to patronize a particular winery. Small, boutique wineries are especially well positioned to use their diminutive size to great advantage – to generate an intimate, living room feel that will offer the patron a personalized experience.

In addition to quality and personalized customer service, ambience is also a product of physical appearance, outside and inside.

- Visual appeal of the winery exterior helps to attract visitors, and suggests the ambience the visitor will enjoy during their experience. Architectural design, landscaping, signs, and parking are key elements to the exterior appeal and accessibility.

- Similarly, room layout, displays, furniture and décor are key to the ambience of the interior space. A pleasant acoustical "feel" is also important, and is sometimes enhanced with background music or sounds. Some wineries may set aside special purpose rooms – away from the activity of the main tasting/lobby area for workshops, specialized wine tastings, wine club events, trade groups, etc. These rooms are generally quieter, more intimate, and comfortable than the main tasting area.

Marketing programs

Every visitor in a tasting room is a potential customer, and returning customer, at the winery, and in local restaurants, and in their home communities. Visitors, if pleased, will also generate additional customers through "word of mouth" advertising. Some ideas for on-site marketing to tasting room patrons include:

- Printing the winery's web page address on every receipt, and personally inviting them to visit the site after they return home
- Inviting them to join a wine club
- Featuring a Special Buy of the Month with a special discount
- Suggesting that they return, and bring their friends
- Market Research (e.g., Ask tasting room patrons how they found out about your winery and what made them decide to visit; ask if they've visited other local wineries and what they liked about them; ask if there's anything that they'd hoped to find in your sales room, but could not.)

Financial Analysis

The premium wineries forecasted to emerge in the Lake Chelan area have great potential for financial profitability and long-term sustainability. In addition to a growing international demand for premium wines, and an apparently strong market for tasting room sales in the Lake Chelan area, these small wineries perform very well when subjected to the rigors of financial analysis.

A timely, comprehensive evaluation of the economies of six wineries (2,000; 5,000; 10,000; 50,000; 200,000; and 500,000 annual case production) was recently presented by Professor Ray Folwell, etal, of Washington State University. The information that follows is based upon his findings, published by WSU Cooperative Extension in the Costs of Investment and Operation in Various Sizes of Premium Table Wine Wineries in Washington State in April 2001 and updated in January, 2002.[9]

Small (premium) wineries perform well – Although this report is only concerned with the analyses of the 2,000 – 5,000 - 10,000 case wineries, it is noteworthy that these wineries were found by Folwell to be preferable; that is, the most profitable and least risky ventures of the six wineries studied. Specifically, "the high per unit investment costs of the smallest wineries were outweighed by even higher per unit profit margins. The result was stronger returns to investor capital than was measured for the largest wineries (50,000 – 500,000 case). . . The risk measures also pointed to the smaller wineries as being the best performers… (exhibiting) satisfactory debt recovery and equity payback periods under base and sensitivity scenarios" as shown below.

Positive Cash Flows	Equity payback
By year two for 2,000 & 5,000 case wineries	5,000 case – within 3.8 years (least risk)
By year three for 10,000 case wineries	2,000 case – within 4.7 years
	10,000 case – within 6.3 years

Profitability Ranking (based on Net Present Value & Internal Rate of Return criteria only)
#1 - 5,000 case; #2 – 2,000 case; #3 – 10,000 case

Prospective investors must be financially prepared for the commitment of initial capital to establish a winery and to weather the early negative cash flows. The cost of establishing a winery ranges from approximately $480,000 for a 2,000 case winery to $1,260,000 for a 10,000

[9] The original analysis, WSU Cooperative Extension publication EB1909,was updated with a paper supporting a presentation at the Oregon Horticultural Society Meeting, Portland, Oregon, on January 29, 2002. The paper was co-authored by Timothy Bales, and Trent Ball. The objective of the research was to "identify current practices in the wine industry in terms of product mix and winery size and utilize this information. . . to provide updated information for use by potential investors and lenders in evaluating the expected costs and returns of investing in a winery." Models for this research were designed, on paper, by specifying building size, equipment specs, and several assumptions.

case winery (Table 8). The total cost of operations (per year) ranges from $215,000 for a 2,000 case winery to $700,000 for a 10,000 case winery (Table 9). Negative cash flows in the first year of operations for the two smallest wineries, and through the second year for the 10,000 case winery, will require adequate up-front operating capital for the venture. Based on these estimates, the total capital requirements to establish and operate a (small) winery until it becomes self-sustaining, ranges from approximately $700,000 to $2,700,000.

Table 8. "Investment and Operating Costs of a Winery" (Folwell, etal, 2002)

Investment Costs to Establish a Winery			
	2,000 case	5,000 case	10,000 case
Total Investment	$480,000	$760,000	$1,260,000
Per Unit - $/Case	$240	$153	$125
Per Unit - $/750 ml	$20	$13	$10

Economies of scale affect the costs of investment and operation – as winery size increases, the per unit (i.e., case or bottle) costs decreases (Table9). To achieve profitability small wineries depend heavily on offsetting high per unit investment and operation costs with:

- higher prices (than large wineries) and differentiated products. (High quality premium wines, and appropriate packaging and marketing techniques are requisites for obtaining higher prices per bottle.)
- selling a relatively high percentage of their wine at retail (vs. wholesale) prices through their tasting rooms/cellar doors. In fact, key to the positive economic performance of the small wineries in Folwell's analysis are the following assumptions about tasting room sales, as a percentage of total sales by winery size: 2,000 case – 55%; 5,000 case – 25%; 10,000 case – 15%.

Table 9. Folwell, 2002

Winery Operating Costs Summary			
	2000 cases	5000 cases	10,000 cases
Subtotal Variable Costs	$116,768	$241,893	$429,846
Subtotal Fixed Costs	$98,581	$164,396	$269,778
Total Operating Costs	$215,349	$406,289	$699,624
Per Unit Costs $/case	$ 108	$ 81	$ 70

IV. ECONOMIC IMPACTS

A recent report on the economic impact of the wine industry in Washington State shows that the industry generates $ 2.4 billion per year, and more than 11,000 jobs (Washington Wine Commission).

For this study, a cursory evaluation of potential local economic benefits of the emergent wine industry in Lake Chelan was conducted.. Over ten direct and indirect impacts were identified that will ripple through various sectors of the local economy. Over half of these are quantifiable (Table 10), based on the financial performance projections of wineries identified elsewhere in this report. The economic benefits to the local area include:

- Direct Jobs
- Annual Payroll
- Annual sales revenues
- Sales tax revenues
- Property Taxes
- New Visitor spending
- Capital Investment
- Indirect jobs
- Shoulder-season attraction for visitors
- Market for ag operations – vineyards
- Sale of local products in wineries

Projected quantifiable economic impacts are presented below. The projections are given for 2006 and 2011, representing the 5th and 10th years of the industry's future activity in the Lake Chelan area. The figures are based on a variety of assumptions.[10]

[10] Assumptions include: five wineries in full operation by 2006, including one 2,000 case winery; three 5,000 case wineries; and one 10,000 case winery; and ten wineries by 2011, including two 2,000 case wineries; six 5,000 case wineries; and two 10,000 case wineries. Winery financial data was drawn from two studies conducted by WSUs economist, Ray Follwell, cited throughout this report. Methodologies, formulas, and related assumptions used to develop these projected impacts are provided in the Appendix to this report (unabridged version).

Table 10

Measurable Local Economic Impacts of Lake Chelan Wineries		
	Year 2006	**Year 2011**[11]
Direct Jobs	23 full-time (equivalents)	46 full-time (equivalents)
Annual Payroll	$530,000	$1,000,000
Annual sales revenues	$3,560,000	$8,240,000
Sales tax collections/yr.	$68,000	$158,000
Property Taxes/yr.	$18,400	$36,800
New Visitor spending/yr.	$1,100,000 (3,000 visitors)	$2,100,000 (5,000 visitors)
Bed nights (lodgings)	4,500 additional bed nights	7,500 additional bed nights
Capital Investment	$4,028,000	$8,055,000

The quantifiable economic impacts listed above are briefly explained below. Note: Numbers are only provided for the Year 2006 projection.

Direct Jobs *(23 full-time equivalents)* **-** Full and part-time job positions vary considerably in wineries, depending upon the winery size and the labor participation of the owner(s). The range of positions, however, include the following:

Full Time
- General Manager
- Winemaker
- Cellarman
- Office Manager

Part Time
- Press Operators
- Bottling
- Clerical
- Customer Service
- Warehouse

Annual Payroll *($530,000)* - Based on labor cost per winery as per financial projections.

Annual sales revenues *($3,560,000)* – These estimates are based on wholesale and retail sales of wine, assuming the wineries produce at full capacity and sell all of their production. This figure does not include the sale of non-wine-beverage items such as arts and crafts, gifts, specialty foods, and wine related paraphernalia (Note: revenue from these items may contribute from 5% to 30% of all winery tasting room sales).

[11] Note: The projections for 2006 are grounded in relatively reliable data about the number of wineries anticipated. Year 2011 projections, however, are less reliable as they represent an extrapolation based on the presumed success of the local wine industry, and the stability of the state's economy and consumer preferences - far too many variables that may change dramatically in the 10-year planning horizon.

Sales tax collections *(*$68,000*)* – Sales taxes are collected only on the sale of wines sold directly to consumers (retail) via a winery's "cellar door" or tasting room. Sales taxes are a major contributor to the tax base of the local jurisdiction (i.e., city or county) in which the winery is located. (The amount shown here represents the tax collected on tasting room sales only, at eight percent.)

Property Taxes *($18,400)* **–** Property taxes were based on Yakima County rate of approximately $15 per $1,000 of assessed value. Assessed value was assumed to equal the total of investment and building costs for each size winery (Folwell 2002).

New Visitor spending/yr. *($1,100,000 from 3,000 new visitors)* **–** These estimates are based on the assumption that the local wine industry will have achieved a critical mass, and matured in its cooperative marketing efforts, positioning the Lake Chelan area as a wine tourism destination. Special wine related events, wine club and group marketing have the potential to attract <u>new</u> visitors who will travel to the Lake Chelan area <u>primarily</u> to visit the wineries. The visitor numbers are very approximate as they are based primarily on anecdotal information about wine events and visitor patterns from other wine regions. The dollar figures are based on spending analyses as reported by the Washington Tourism Office. NOTE: To inject a more conservative value into market assumptions, the number of new visitors used in the projection for determining Tasting Room Market Assumptions, Appendix F was just 1,800.

Bed nights (lodgings) *(4,500 additional bed nights)* **–** These estimates are driven by the number of <u>new</u> visitors, as defined above. Actual bed nights generated by wineries will likely be greater than the number simply generated by new visitors, however, as other (regular, returning) visitors may be expected to extend their stays to enjoy this additional activity in the Lake Chelan area. The number of bed nights is based on an assumption that most travel parties in this subset are couples, sharing one room for 3 nights of an average 4.3 day stay.

Capital Investment *($4,028,000)* - Based on total cumulative investment in plant and office of all projected wineries, as per financial projections.

<u>*Other economic impacts:*</u>

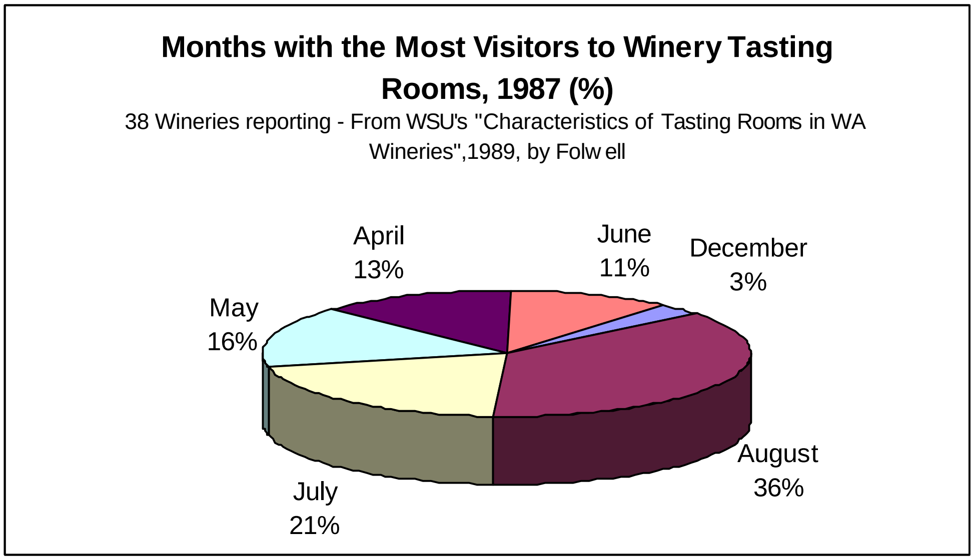
Indirect jobs – In addition to jobs generated within the wineries, by 2006 the winery industry will have likely contributed indirectly to the creation/retention of jobs in a variety of business sectors. The types of positions most likely to enjoy the greatest impact include those in the following types of businesses: hospitality (lodgings); restaurants; and maintenance. Additionally, construction and building supply related jobs will be supported during the capital facility development phases of the wineries.

Shoulder-season attraction for visitors – Communities seeking to expand their tourism visitation seasons increasingly value wineries. Although the summer travel season appears to be the heaviest for winery visits, wineries in many areas have proven their ability to attract new visitors to their locations during the "shoulder seasons". At these times, tourism-dependent businesses suffer from cash-flow challenges and begin to layoff employees.

Wineries in the Lake Chelan area have an excellent opportunity to organize events and assemble wine-tour packages that will attract new visitors to the area during these "slow" months. Examples from other regions include: Autumn harvest festivals that attract visitors in September and October; Spring Releases drawing visitors in March and April; and pre-Christmas Holiday Packages – promoting special wine deals for gift-buyers, packaged with discounted lodging, in November and early December.

Figure 7, generated from a 1987 study of Washington wineries, illustrates that the months with the greatest number of visitors, in order of importance were August, July, May, April June, and December. However, while these figures are illustrative of seasonal traffic volume, they are based on visitor counts from the very early stage of the Washington Wine Industry, before significant wine events or a solid reputation had been established.

Figure 7. Folwell, 1989



Market demand for wine grape production – Although demand for local wine grapes will be dependent on the quality of wine grapes produced, it appears that there will be a demand from five wineries forecasted to be operating by 2006, will producing a total of 27,000 cases of wine at full capacity. Based on the assumptions and calculations from the projections (Folwell, 2002), this level of wine production, if satisfied totally by the local grape growers, would generate approximately $314,000 in sales.

Sale of local products – Approximately 85% of wineries sell non-beverage items in their tasting rooms (Folwell, 1989). Many of these items may be locally produced arts, crafts, or gourmet foods.

V. NURTURING THE LAKE CHELAN WINE/GRAPE INDUSTRY

A variety of industry organizations, educational institutions, and business groups can support the emergence and sustainability of the wine grape industry in the Lake Chelan area, which is led by the Lake Chelan Grape Growers Association and its members. Below are several suggestions for activities to support the industry for consideration by the Port District of Chelan County and/or other organizations. Also included in this section is a synopsis of the two most active educational institutions.

Potential Activities to Nurture Growth of Lake Chelan Wine Industry
For consideration by the Port District of Chelan County and/or other organizations

The primary purpose of port districts throughout the state is to strengthen communities by fortifying local economies to stimulate job creation. Ports are public agencies with substantial powers established by the state legislature to develop opportunities that present themselves in the marketplace. With regard to facilitating development of the emergent wine industry in the Lake Chelan area, two authorized activities of ports appear to have special relevance:

- Buying and improving properties for lease - or sometimes to sell - to private industry for industrial and commercial uses
- Promoting tourism as an economic stimulus within the port district jurisdiction

Based on the above, and other actions in which a port may engage, the following activities are recommended for consideration by the Port of Chelan County:

- Develop an incubator that would serve (some) needs of the emergent wine industry, reducing capital intensive demands on small and start-up wineries
- Assist with wine-tourism consumer research and planning
- Assist with collection and retention of data in support of an application for a (BATF) American Viticultural Area designation (appellation) for the Lake Chelan region
- Assist with collection of weather data
- Assist with industry planning efforts and training and education for winemakers and growers

Although each of the potential activities above is described in the following pages, additional information and analysis by the Port will be necessary before any decisions to proceed on any of these activities can be expected. In evaluating its potential involvement in these activities the Port will likely consider, at a minimum:

- Its legal authority / limitations to engage in the activity
- The cost of investment

- The economic development return on the investment (Will the investment result in a sufficient number of direct or indirect jobs or other community economic benefits to warrant the expenditure?)
- Private sector interest in pursuing and investing in the activity/opportunity (Ports invest in projects for which there is generally insufficient financial return to induce private sector investments. Their intent is to stimulate private sector investments, not compete for ownership of a project.)
- The likelihood of partnerships to share in cost and/or execution of activities
- Whether or not the Port, or other organization, should assume the lead role for the activity

1. Develop an incubator that would serve (some) needs of the emergent wine industry, reducing capital intensive demands on small and start-up wineries

Typically, business incubators provide fledgling companies with facilities and services that may range from little more than affordable, unimproved space - to elaborate structures with a comprehensive range of business support services. Generally, space is leased to the incubator tenants; services, if available, are provided as part of the (lease) package and/or on a fee-for-services basis.

In many established wine regions such "incubators" are typically owned and operated by private firms (generally, wineries with excess capacity) and are known as "custom crush" operations. They provide services and access to equipment that very small (boutique) or start-up winemakers do not have at their own winemaking facility, significantly easing their capacity constraints and capital demands.[12] For example, the Napa Wine Company in northern California "provides a place for winemakers to crush, ferment, rack, top, age and bottle wines. Each of the (60) brands has a winemaker or consulting winemaker that determines the processes the wines will incur. (Napa Wine Company) staff oversees the implementation of those winemaking techniques. Customers of the custom crush range in size from 250 cases to 100,000 cases."[13]

In areas where the wine industry is still in a neophyte stage, "custom crush" operations are less likely to be financially viable or sufficiently profitable to attract private investment. In these regions, it is not unusual for public agencies (e.g., cities, port districts) to play a role that replicates (at least, some) of the activities of custom crush operations. Rather than profit making, the objective of these public agencies is to "incubate" the embryonic wine industry in their communities with the goal of eventually expanding the economic base via agricultural diversification (wine grape production), value-added processing (wine-making), and tourism.

The list below identifies categories of incubator facilities, equipment, and services that could reduce the capital and operating demands of small and emergent wineries in the Lake Chelan

[12] Note: The equipment for crushing and fermenting premium wines is capital intensive. Its short-teerm seasonal usage makes the equipment onerous for small operators to own; leasing/sharing such equipment is financially preferable.

[13] From http://www.napawineco.com/winery.html

area, thereby increasing their chances for sustainability and growth.[14] On the following page, the categorical list is expanded to include specific types of items to be considered in each category.

Facilities and Equipment
- Processing
- Winemaking/Tank Storage
- Barrel Storage
- Laboratory
- Packaging
- Business related

Services
- Crushing/ Fermenting
- Winemaking/Tank Storage
- Barrel Storage
- Analysis
- Packaging
- Business & Information services

The items in these lists represent a fairly comprehensive inventory of typical custom crush / wine incubator offerings; all or a few of which may be available in any given operation. Given the relatively few number of wineries expected to emerge in the Lake Chelan area, any plans for a regional incubator would have to be scaled appropriately. At a minimum, a feasibility analysis for such a project would be necessary to determine precisely:

- What facilities, equipment and services the local emergent wineries would find most valuable and commit to using, if available[15]
- The capital and operational investment costs of providing these items via an incubator
- Pricing levels for the various offerings that are acceptable to identified/potential incubator customers
- Financial sustainability of the incubator at various levels of service and pricing

[14] Note: Incubator customers could include wine makers from outside of the immediate Lake Chelan area to supplement the incubator's revenue stream.
[15] Initial indications from emergent wine makers in the area suggest that crushing, fermentation, and lab analysis facilities/services (in that order) would provide the greatest immediate value to their operations.

Preliminary Facilities/Equipment Options – Wine Industry Incubator

Processing
Truck Scale
Crush Stations / triage tables
Fermenting & aging rooms (temp. controlled)
Must Chiller
Tank Presses
Tanks (temp. controlled)

Winemaking / Tank Storage
Filters (various types)
Potable Water
Tank Temperature Control System

Barrel Storage
Barrel Aging Facility
Barrel Racking
Forklift

Laboratory
Acid Stills
Automatic Titrator
Chemstat Analyzer
Equipped Customer Blending Room
Nephlometer
SO2 Apparatus
UV/Visible Spectrophotometer

Packaging
Bottling Line
Label Applications

Other
Conference Room
Fax/copy machine
Sales & Tasting Room

Preliminary Services Options – Wine Industry Incubator

Crushing / Fermenting
Barrel Fermentation
Certified Weighmasters
Crush For Juicing / Must Chill
Irrigator or Hand Pump-Overs
Standard Crush
Whole Cluster Pressing

Winemaking / Tank Storage
Blending
Filtration
Fining
Racking
Temperature-Controlled Stainless Storage

Barrel Storage
Barrel Aging
Barrel Fermentation
General Barrel Services
New Barrel Preparation

Analysis
Alcohol
Bottling QA/QC
Brix
Enzymatic R.S. And Malate
Heat & Cold Stability
PH / CO2 / NH3 / O2 / S02
Routine Wine / Lot Maintenance
Specific Gravity
Total Acid (Automated Titration)
Volatile Acidity

Packaging
Custom Packaging

Business
General Secretarial/Bulk mailing
Library, information clearinghouse

2. **Assist with wine-tourism consumer research and planning**

Once a critical mass of wineries has been established in the Lake Chelan area, the opportunities for wine tourism to contribute to the local economy will be significant. The Chelan area already enjoys a reputation as a vacation and meeting destination; when it also becomes known as a wine tourism destination the area will attract more visitors, and the seasons of visitor activity will be extended.

The boutique wineries expected to blossom in the area will likely focus much of their sales efforts in attracting consumers to the retail space within their wineries. These outlets, with their tasting rooms and attractive surroundings, become the destinations of wine-tourists and the profit-centers for small wineries.

A proactive approach to laying the groundwork and determining strategies for marketing the Lake Chelan area as a wine tourism destination is recommended. If begun in the present, early phase of the industry's emergence, the industry and community will be positioned for a timely and well-executed launch into the market when the industry has evolved to "destination readiness".

To guide the process of outlining a proactive approach to a wine tourism destination strategy, several observations, tasks and issues are offered for consideration in the paragraph below.

- It appears that the demographic profile of many Lake Chelan area visitors match the profile of serious wine consumers (likely to initiate visits to winery destinations wherein they purchase quality wines). Research to verify or refute this assumption, and to determine consumer preferences would help to forecast sales, target market segments, and design promotions.
- Educational workshops focusing on regional wine tourism strategies would prepare those in the wine industry and local tourism marketing organizations to create and engage in effective, synergistic marketing programs.
- The recognized synergy between future wine tourism promotions and Lake Chelan Chamber of Commerce tourism marketing efforts presents exceptional opportunities for cooperative / coordinated marketing programs and special events.
- Work with the Lake Chelan Grape Growers Association and others to design, print and distribute a map of area wineries.
- Potential project-specific partnerships to facilitate wine tourism planning and/or marketing could be generated. Parties involved may include:
    - Individual wineries
    - Lake Chelan Grape Growers Association
    - Lake Chelan Area Chamber of Commerce

- Lake Chelan Marketing Association
- Port of Chelan County Tourism Action Group
- WVC's Institute for Rural Innovation & Stewardship
- Chelan County (lodging tax funds)
- Washington Wine Commission
- Washington Association of Wine Grape Growers
- Tourism Division, WA Office of Trade & Economic Development

The legislature and other ports have lauded the Port of Chelan County for its groundbreaking involvement in tourism marketing. Just last year, the Port was awarded for its ability to forge meaningful partnerships. Its record in tourism and partnership suggests that, at this juncture, the Port could make a significant contribution by initiating a meeting of potential partners to explore a proactive, strategic approach to the marketing of wine tourism in the Lake Chelan area.

3. Assist with collection and retention of data in support of an application for a (BATF) American Viticultural Area designation (appellation) for the Lake Chelan region

Most regions that have successfully achieved recognition for their area's grapes and wines have sought and secured a designation as an American Viticultural Area (AVA) from the Bureau of Alcohol, Tobacco, and Firearms (BATF). This designation permits the use of viticultural area names as *appellations of origin* in wine labeling and advertising. It helps consumers better identify the wines they may purchase, and helps winemakers distinguish their products from wines made in other areas. (See Table 1 for a list of types of BATF appellations and their respective requirements.)

Members of the Lake Chelan Grape Growers Association have expressed a desire to pursue an AVA designation for the area. However, at this early stage in their evolution, the association's organizational capacity and priorities are focused on more immediate challenges. Meanwhile, the ability to use an AVA *appellation of origin* to accelerate the emergent industry's market presence slips further into the future – a future that is further extended by a regulatory process that may take several years.

If the Port of Chelan County is willing and able to assist in the AVA petition process, it is likely that an AVA designation could be achieved a year or years ahead of current estimates. This would provide the emergent industry with a valuable, proven tool to market its products and enhance the area's reputation as a wine tourism destination. Following is a brief description of the tasks involved in securing an American Viticultural Area designation and name from the BATF.

Official recognition of an area by the BATF begins with the filing of a petition. AVA Petitions for an AVA designation require persuasive, comprehensive information providing:

- Evidence that the name of the viticultural area is locally and/or nationally known as referring to the area specified in the application;
- Historical or current evidence that the boundaries of the viticultural area are as specified in the application
- Evidence relating to the geographical features (climate, soil, elevation, physical features, etc.) that distinguish the viticultural features of the proposed area from surrounding areas
- Marked, specific boundaries of the viticultural area, based on features which can be found on U.S. Geological Survey (U.S.G.S.) maps of the largest applicable scale

In spite of the apparent simplicity of the above information requirements, the petitions are relatively elaborate and academic. They may include extensive (and costly) evidence from historians, researchers, soil scientists, meteorologists, and researchers to satisfy stringent evidentiary requirements.

The petition, moreover, is only one step in the AVA process. Before a petition is filed, it is necessary to forge alliances and conduct meetings with growers that might be affected by the establishment of an AVA. The selection of an AVA name (subject to BATF regulations and approval) and boundaries are derived in this pre-petition phase. The post-petition phase includes a notice-and-comment period where written comments are solicited through a notice published in the Federal Register. Once the public comments are obtained, BATF conducts it own review and has the option, based on the evidence and comments received, of issuing a final regulation to formally establish the viticultural area.

4. Assist with collection of weather data

Accurate macro and microclimate data is critically important to wine grape growers in general, and especially meaningful to new growers and potential growers in the Lake Chelan area. Specifically, such data helps determine heat accumulation, length of growing season, and severe winter temperatures. Combined with soil, solar, wind, and other information – precise climatological data is used to determine whether or not a specific area can support quality wine grape cultivation, and if so, which grape varieties are best suited to the site. Clearly, climate data is essential to the long-term development of the wine grape growing industry in the Lake Chelan area.

The Port of Chelan County, recognizing the importance of weather data to all agriculturalists in the area, currently contracts with Wilbur-Ellis to collect and archive weather data from several stations in the Lake Chelan area. This data complements National Weather Service data of record between 1948 and 2000, and is referenced in Appendix A and B.

5. Assist with industry planning efforts and training and education for winemakers and growers

They Port may assist with industry planning by providing resources for planning meetings (e.g., meeting facilitators, organizational consultants, wine specialists). Additionally, the Port may assist with implementation of certain activities. For example, the Port could potentially identify and secure grant funds[16] for an industry project.

The Port has already been involved in supporting training and education for the Lake Chelan wine industry through its participation in the Wine Growing Short Course, presented in February 2002. That cooperative effort exemplifies the partnering role the Port may play in future training programs for the industry.

Education & Research Institutions

Wenatchee Valley College - Institute for Rural Innovation and Stewardship

Wenatchee Valley College's Institute for Rural Innovation and Stewardship (IRIS) has launched an initiative to use modern electronic media and distance learning, in addition to traditional classroom environments, to promote the "diversification of crops, products, and rural businesses such as wineries, (and) agri-tourism . . ."[17]. In a proactive response to the needs of the emergent wine industry throughout North Central Washington, IRIS developed a Wine Growing Short Course for interested growers and potential winemakers. The first presentation of the workshop in February 2002 was planned and executed through a cooperative effort with the Port of Chelan County, Lake Chelan Grape Growers Association, and Okanagan University College in British Columbia, Canada.

It appears likely that IRIS will play an important, proactive role in providing training opportunities for the emergent wine industry. The Wine Growing Short Course attracted approximately 200 people, and responses to a survey circulated at the workshop suggests a significant interest in a web-based curriculum and a 2-year degree program in viticulture and enology.

The Institute's emphasis on cooperative efforts, exemplified by its approach to creating the short course, suggests its potential as a key player in the mix of partnerships working to develop the wine industry in the Lake Chelan area.

Washington State University

Washington State University is the leading wine grape research and training institution in the state. Although the emphasis of its wine and grape research is based on industry needs in the south central portion of the Columbia Valley, wherein lies 90% of the state's wine production, much of WSU's research and its many resources are relevant to the emergent Lake Chelan area

[16] Examples of funding sources include: USDA's Rural Business Opportunity Grants, USDA Coorpeerative Development Grants, grants from the Washington State Office of Trade and Economic Development
[17] IRIS brochure, published by the Wenatchee Valley College Foundation

wine industry. Especially relevant is the fact that WSU programs are “designed to sustain the economic production of high quality grapes for the production of high quality premium wines”[18]

In addition to its many research projects, WSU offers a Bachelor of Science degree with an emphasis in viticulture and enology, produces enology and viticulture mini-courses, and maintains a website and archive with valuable data and reports. Many of these, and other courses, are available through the WSU Learning Center located on the Wenatchee Valley College campus.[19] Additionally, WSU’s extension agents in the Columbia Valley have counseled local Chelan area wine grape growers upon request. WSU also has developed a program, the Washington State Enology and Viticulture Education Consortium in association with several community colleges.

[18] http://winegrapes.wsu.edu/scripts/general/overview.htm
[19] Dr. Kent Mullinix is an academic advisor for the WSU Learning Center and is located on the WVC campus.

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