

EXPANDING OUR UNDERSTANDING OF EFFECTIVE ENTREPRENEURSHIP AND LEADERSHIP  
PROCESSES: AN APPLICATION TO THE WINE SECTOR

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A Dissertation

Presented to

The Faculty of the Graduate School

At the University of Missouri

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In Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

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By

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PROCESSES: AN APPLICATION TO THE WINE SECTOR

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## ACKNOWLEDGEMENTS

The present dissertation would not have been possible without the support, guidance, and encouragement of many people, organizations, and beings throughout these years. First of all, I would like to - give a special thanks to Thomas G. Johnson. Tom - has mentored me since I first arrived at the University of Missouri – Columbia. I truly appreciate Tom’s patience with my English, his guidance in the economics and public affairs fields, and his overall expertise. His direction and advice has helped to elucidate gaps within my reasoning, and pushed me beyond. I am very thankful for Tom’s faith in this dissertation even though this type of research is quite different from the Department’s main areas of expertise.

Special thanks as well to all the members of the dissertation committee. Dr. Klein’s knowledge about the firm and entrepreneurship and his research insights has been very useful throughout the process. Dr. Chaddad shared interest in the wine sector, and his detailed examination of the research approach and development has contributed to the accuracy and proper process of this research. Dr. Dougherty’s expertise in surveys and interviews, as well as in human resources and personnel management, has been substantially useful in many stages of this dissertation. Finally, Dr. Hovmand extended applicable knowledge in the area of system dynamics and management has allowed me to integrate key concepts within the methodology of this study.

The development and materialization of this dissertation has gone through several phases in which different people and organizations have contributed. Special thanks to Jay Forrester, John Sterman, the System Dynamics Society and the Worcester Polytechnic Institute department of Social Sciences for the development, promotion, and effective education of system dynamics. Special thanks also to Peter Senge, Otto Scharmer, the Society for Organizational Learning, and the Presencing Institute

for the integration of leadership theory with systems thinking and spirituality in several articles, books, and workshops. Special thanks to all the researchers that have been breaking the silos and integrating the existing knowledge in social sciences, health sciences, and environmental sciences. Special thanks to J.K., J.M., M.C.K.S., Stephen Co, and the PH community for enhancing my perception and knowledge of subtler layers of life. Sincere thanks to the nine wineries that participated in this study.

In a more continuous manner, I am deeply thankful to all my family and friends whom in a more direct or indirect way have always been sharing their love, their wisdom, and their support during these years so that I could put together this dissertation in the best possible way. Special thanks to my mom and dad, to my brother and to my grandparents for enhancing my unfolding in such a beautiful way with their love, wisdom, encouragement, respect, and understanding. Special thanks also to my parents-in-law and to my siblings-in-law for their new life insights, new ways of doing, and guidance in the final stages of this dissertation. Special thanks to all my colleagues at the Applied Economics Department, and especially to Sara Alva-Lizarraga for being with me in each step of the process, and for sharing her wisdom and support during the challenging times. Special thanks to Jacqueline Bacino and Eloi Español-Rocabert for their friendship and help during this stage.

Finally, special thanks to my husband, Cording Raines, for his unconditional love, wisdom, support, understanding, and ways of helping me to grow more beautifully in each stage of this life. Special thanks to Cording as well for his more direct guidance in the last stage of this dissertation.

May you all properly shine to your maximum potential always.

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## ABSTRACT

The recent economic recession in the U.S. and in the E.U. is enhancing entrepreneurship processes around the world. Old forms of production are becoming obsolete along with old ways of organizing the economy and society. This scenario and the emergence of new leadership processes have prompted an increase in entrepreneurship focused on the needs of new niches. However, not all entrepreneurship and leadership processes have been successful in achieving their goals. Research on entrepreneurship and leadership has identified the need to further understand the dynamic features of these processes and their complexity.

One of the sectors in the U.S. that has shown major growth during the last decade is the wine sector. The increase of national and international market competition in the wine sector has prompted new entrepreneurship and leadership processes in this sector. As a result, it seems timely and appropriate to expand our understanding of effective entrepreneurship and leadership processes in the U.S. wine industry.

The dissertation's main contributions are to: (a) expand the understanding of the dynamics of entrepreneurship, (b) expand the understanding of how human cognition relates to its contexts in order to make entrepreneurship effective, (c) identify two types of leadership that are key for achieving companies' sustained competitive advantage, (d) expand the understanding of how human cognition relates to its contexts in order to make leadership effective, (e) identify the structures (traits and processes) that effective entrepreneurship and leadership share, (f) identify the synergies between entrepreneurship and leadership, and (g) bring useful insights to the nine wineries interviewed so that they can address their current challenges more effectively.

Results indicate that there is a co-evolutionary process between entrepreneurs' cognition and their surroundings. The key elements that enhance the success of entrepreneurship processes are: (a) a clear vision and mission, (b) the ability to undergo deep learning processes, (c) systemic understanding, (d) above average ability to recognize opportunities, (e) effective communication skills, and (f) adequate resources and infrastructure. Ethical and transformational leadership processes are identified as leadership type's necessary to enhance wineries' sustained competitive advantage. Leadership effectiveness is highly dependent on the level of leaders': (a) personal mastery, (b) awareness of mental models, and (c) systemic knowledge. These qualities allow entrepreneurs and leaders to have a broader vision, to identify new opportunities, and to welcome new projects without resistance. At the same time, these qualities facilitate the emphatic listening and generative communication skills necessary for entrepreneurship and leadership effectiveness. Furthermore, without effective leadership there is no materialization of new ideas and projects, and without effective entrepreneurship there is no possibility for sound leadership. The large and mid-sized wineries included in this study experience more effective results from entrepreneurship and leadership processes than do the small ones. The main challenges faced by the wineries studied concern their ability to address the following three behaviors: (a) shifting the burden – the tendency to address the symptoms instead of the fundamental causes; (b) misunderstanding the success process – the tendency to continue with the same old partially effective strategy without addressing the obstacles that prevent wineries from reaching their full potential; and (c) underinvesting in growth – the tendency to overreach without recognizing that the winery's capacity cannot support the current growth pace. Finally, simulation results indicate that small wineries that barely break-even are not able to adjust their goals so that they can better satisfy their customer's preferences. The model also indicates that wineries that enjoy profits do not satisfy customer environmental preferences, leaving a market opportunity unfulfilled. Results also point out that low

well-being levels of managers and employees substantially reduce entrepreneurship and leadership effectiveness by letting the “goals-erosion” mechanism dominate their behavior instead of the “hill-climbing” mechanism.

**Keywords:**

Entrepreneurship; leadership; dynamic management; organizational behavior; learning; organizational learning; wineries



## CHAPTER 1 : INTRODUCTION

The recent economic recession experienced in the U.S. and E.U. required many companies to shut down, and caused unemployment rates to increase at an alarming rate. Some countries are experiencing faster employment growth than others. However, what all of them experience is an increase in entrepreneurship and leadership processes (Freytag and Thurik 2010). This is based on new individual and collective values that stand apart from the old economic paradigm. The emerging entrepreneurship and leadership processes are enhancing new ways to produce, create, and sustain supply chains, to create and sustain markets, and to keep people informed through easily accessible information channels.

An interesting revelation gained when looking at the whole entrepreneurship process, rather than just the entrepreneur's personal characteristics, is the importance of the relationships between the entrepreneur and others. The relationships between the entrepreneur and others is as important as the entrepreneur's traits and cognitive processes, especially when it comes to understanding the causes of his or her success in materializing new ideas. Relationships between the entrepreneur and business people, between the entrepreneur and other organizations, between the entrepreneur and politicians, as well as the involvement of the entrepreneur in networks and social movements are key aspects in their success. This shift from concern for the specific characteristics of the entrepreneur toward understanding the whole entrepreneurship process has been recommended by several scholars and organizations in recent years (Grégoire 2011; Welter 2011).

One of the main reasons for looking at entrepreneurs and entrepreneurship in a more dynamic and complex way has to do with the on-going transition from the societal structure and culture of the last two centuries towards a new emerging structure. During the last two centuries, new technologies

coupled with the scientific approach have provided relevant knowledge about how things work. We have become accustomed to decomposing the elements of a system and seeing how each part works and how the parts work together so that we can understand their functions. This approach works when analyzing machines, or inert systems. However, there is a growing awareness that the mechanistic approach cannot answer the basic "why" questions. Therefore, it cannot provide answers to all our questions regarding the functions of living systems such as entrepreneurship and leadership processes and companies (Ackoff 1979). Basically, living systems are constantly recreating themselves, and their whole is greater than the sum of their parts (Bohm 1980). As Goethe points out, the whole is something dynamic and living, and it continually comes into being "in concrete manifestations." A part, in turn, is a manifestation of the whole, rather than just a component of it. Neither exists without the other (Scharmer 2005). This new perspective towards entrepreneurship and leadership processes allows us to understand the relevant components and relationships that play a role in the emergence and unfolding of these processes. Effectiveness and sustainability becomes more easily obtainable.

One of the insights that emerge from understanding entrepreneurship processes as living systems is that the effectiveness of entrepreneurship processes also depends on the systemic infrastructure in place. Also important are the intentions and capabilities of the people that are part of the system, such as people's leadership skills. Leadership enhances the realization of a firm's potential. When connected with the related leadership processes outside the firm, the full potential of the firm can be realized and entrepreneurship can be sustained (Cogliser 2004).

Currently, there is a growing demand for entrepreneurship and leadership processes that can effectively redirect increasingly obsolete parts of the individual, economic, social, and environmental systems (Porter 2011). The research literature in the areas of entrepreneurship and leadership has grown substantially during the last decade. The trend is towards understanding the systemic whole

(Senge 2008). None of this recent research has focused yet on understanding the entrepreneurship and leadership processes behind the substantial growth in the U.S. wine sector. Hoang (2003) and Aldrich (2001) identified some of the specific characteristics related to family businesses. However, there is no research that has studied entrepreneurship and leadership processes in the U.S. wine sector since the rapid growth experienced in the last ten years.

Some general statistics about the U.S. wine sector are necessary in order to contextualize the present study and see the growing entrepreneurship and leadership needs in this sector. The number of wineries in the U.S. increased by 242 percent from 1999 to 2011, growing from 788 wineries to 2,694 wineries (County Business Patterns 2011). During 2006 and 2007, more than 300 wineries were opened and a similar growth occurred during the recession in 2009 and 2010. The number of paid employees in wineries increased by 62 percent during these twelve years, rising to 36,132 in 2011, 0.0282 percent of the total U.S. employment (U.S. Department of Labor 2013) (see table 1.1 below). Winery employees' average annual payroll increased 25 percent from 1999 to 2011, amounting to \$45,960 per year in 2011. The major salary increases took place during 2001, 2003, 2005, 2006, and 2010. These patterns indicate that after each decline or stabilization in wineries' salaries there has been an increase in the number of wineries. Both statistics, the substantial increase of the number of wineries and the increase of paid employees, indicate higher competition and the need to develop more effective entrepreneurship and leadership processes in order to properly manage the employees and the sources of sustained competitive advantage.

Table 1.1: U.S. Number of Wineries, Paid Employees and Salaries

|                        | 1999    | 2000    | 2001      | 2002      | 2003      | 2004      | 2005      | 2006      | 2007      | 2008      | 2009      | 2010      | 2011      | % change |
|------------------------|---------|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| Paid employees         | 22,218  | 21,814  | 26,060    | 26,832    | 25,525    | 26,094    | 28,772    | 29,926    | 31,964    | 34,020    | 33,370    | 34,650    | 36,132    | 62.62%   |
| Total Annual payroll   | 811,705 | 876,638 | 1,000,810 | 1,087,093 | 1,117,184 | 1,138,634 | 1,240,831 | 1,360,855 | 1,412,486 | 1,497,507 | 1,482,023 | 1,547,501 | 1,660,633 | 104.59%  |
| Average Annual Payroll | 36,534  | 40,187  | 38,404    | 40,515    | 43,768    | 43,636    | 43,126    | 45,474    | 44,190    | 44,018    | 44,412    | 44,661    | 45,960    | 25.80%   |
| Total establishments   | 788     | 856     | 1,125     | 1,239     | 1,323     | 1,432     | 1,637     | 1,791     | 2,117     | 2,249     | 2,273     | 2,595     | 2,694     | 241.88%  |

Source: County Business Patterns, United States Census Bureau

According to the U.S. Department of Commerce, in 2010, 44 percent of U.S. wineries were located in California, compared to 12.6 percent in the Midwest, leaving the Midwest as the fourth largest region in terms of number of wineries. The Northeast region has 10.2 percent of the total U.S. wineries, the second to last after the Mountain region. In terms of wine production, California accounted for 89.5 percent of the total U.S. production, while the Midwest accounted for only 0.8 percent, and the Northeast for 4.1 percent (Hodgen 2011). Hence, even though there are more wineries in the Midwest, their level of production is comparatively lower than those in the Northeast.

The U.S. has had a deficit in the wine balance of trade for a long time, and it has increased since 2000 when imports increased much more than exports. Currently, the U.S. imports more than four times the wine that it exports (U.S. International Trade Statistics 2013). The main imports are from France, Italy, and Australia. The imports from Italy alone more than doubled since 2000. The U.S. mainly exports wine to the United Kingdom and Canada, having more than tripled the exports to Canada since 2000 (U.S. International Trade Statistics 2013). Effective entrepreneurship and leadership processes that enhance U.S. wineries' position abroad are necessary in order to compete with the increasing wine production overseas and reduce the deficit in the balance of trade.

According to the County Business Patterns, Missouri has followed a trend similar to the U.S. wine sector in terms of number of wineries, paid employees, and salaries during the last fifteen years. Table 1.2 below indicates that the growth experienced in the Missouri wine sector has been slightly greater than in the U.S.. For instance, the number of Missouri wineries has increased by 260 percent, which is twenty points more than in the U.S., moving Missouri from 14 wineries in 1998 to 54 in 2011 (County Business Patterns 2011). However, other sources of information indicate that in 2010 there were 97 wineries in Missouri (Stonebridge Research 2010) and in 2011 there were 99 (Leonardelli 2013). Hence, the increase of wineries and paid employees in Missouri seems to be substantially bigger than

that indicated in table 1.2 below. All sources of information indicate that the largest increase of wineries in Missouri took place between 2007 and 2012.

Table 1.1.1: Missouri Number of Wineries, Paid Employees and Salaries

|                          | 1998   | 1999   | 2000   | 2001   | 2002   | 2003   | 2004   | 2005   | 2006   | 2007   | 2008   | 2009   | 2010   | 2011   | % change |
|--------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|
| Paid employees           | 260    | 275    | 294    | 361    | 297    | 316    | 440    | 496    | 505    | 578    | 542    | 529    | 567    | 568    | 107%     |
| Annual payroll (\$1,000) | 4,393  | 4,650  | 4,949  | 5,483  | 5,881  | 6,572  | 9,420  | 9,776  | 9,945  | 11,657 | 10,318 | 11,051 | 12,611 | 12,477 | 168%     |
| Average Annual Payroll   | 16,896 | 16,909 | 16,833 | 15,188 | 19,801 | 20,797 | 21,409 | 19,710 | 19,693 | 20,168 | 19,037 | 20,890 | 22,242 | 21,967 | 30%      |
| Total establishments     | 14     | 15     | 17     | 19     | 20     | 22     | 27     | 27     | 28     | 33     | 42     | 46     | 51     | 54     | 260%     |

Source: County Business Patterns, United States Census Bureau

The present dissertation focuses on studying the dynamic and systemic features of entrepreneurship and leadership processes in the U.S. wine sector since it is a sector with a relatively high number of new businesses during the last decade (County Business Patterns 2011). It is a sector with a large increase in market competition during the last decade (Silverman 2004; Taplin 2006). Furthermore, the increasing number of paid employees and the dominant nature of family businesses make leadership a more relevant quality for enhancing the winery personnel management in a more professional manner. Furthermore, effective leadership processes are also increasingly needed in order to extend the winery's relationships beyond its more familiar boundaries; such as the traditional selling channels.

As a result of the current demands in our society and the flaws in our understanding of how to address them, this dissertation contributes to: (a) expanding our understanding of the dynamics of entrepreneurship, (b) expanding our understanding of how human cognition relates to its contexts and makes entrepreneurship effective, (c) identifying two leadership types that are key for achieving sustained competitive advantage, (d) expanding our understanding of how human cognition relates to its contexts and makes leadership effective, e) identifying the structures (traits and processes) that effective entrepreneurs and leaders share, f) identifying the synergies between entrepreneurship and

leadership, and (g) bring useful insights to the nine wineries interviewed so that they can address their current challenges more effectively.

Chapter II is a literature review with particular emphasis on small and medium firms in the Missouri, Virginia, and Maine wine markets. Chapter II also reviews the literature related to entrepreneurship and leadership with particular attention given to the behavioral foundations of these processes and their effectiveness. Chapter III describes the conceptual and simulation models, the sources of data used in the study and the methodologies followed in its collection and analysis. Chapter IV presents the findings of the present research. Finally, chapter V posits the conclusions and discusses needed follow up research.

## **CHAPTER 2 : LITERATURE REVIEW**

The present chapter starts with a description of the U.S. wine sector during the last fifteen years. It focuses on the specificities of the Missouri, Virginia and Maine wine markets. Then, literature which identifies the main internal and external challenges faced by U.S. wineries is discussed. Since many of the ultimate challenges faced by wineries as well as for researchers in this field concern human behavior and how to enhance entrepreneurship and leadership in small and medium wineries, the rest of the literature review focuses on elucidating the behavioral foundations of entrepreneurship and leadership processes as well as the structure and dynamics of effective entrepreneurship and leadership. The theoretical propositions explored in this study are posited in the concluding part of this chapter.

### **2.1. The U.S. Wine Sector**

In the U.S. the number of wineries has increased substantially during the last fifteen years. In 1999 there were 788 wineries according to the County Business Patterns and in 2011 there were 2,694. There have been three main periods when a greater number of wineries have opened for business; between 2000 and 2001, between 2006 and 2007 and between 2009 and 2010 (see figure 2.1 below). It is interesting to note that these major increases in wineries start-ups occurred after a period where wineries salaries had gone down or had been flat (see figure 2.2 below). The consumption of wine has increased about 3.5 percent per year during the last ten years, and it is expected that it will continue to increase.

U.S. average annual winery salaries have increased from around \$36,000 to \$46,000 during the last 15 years with periods where salaries went down and others where salaries rose substantially. These trends indicate an increase in market competition, an increase in entrepreneurship and an increase in the need to develop effective entrepreneurship and leadership processes in order to properly manage the higher number of personnel and to properly sustain one's competitive advantage.

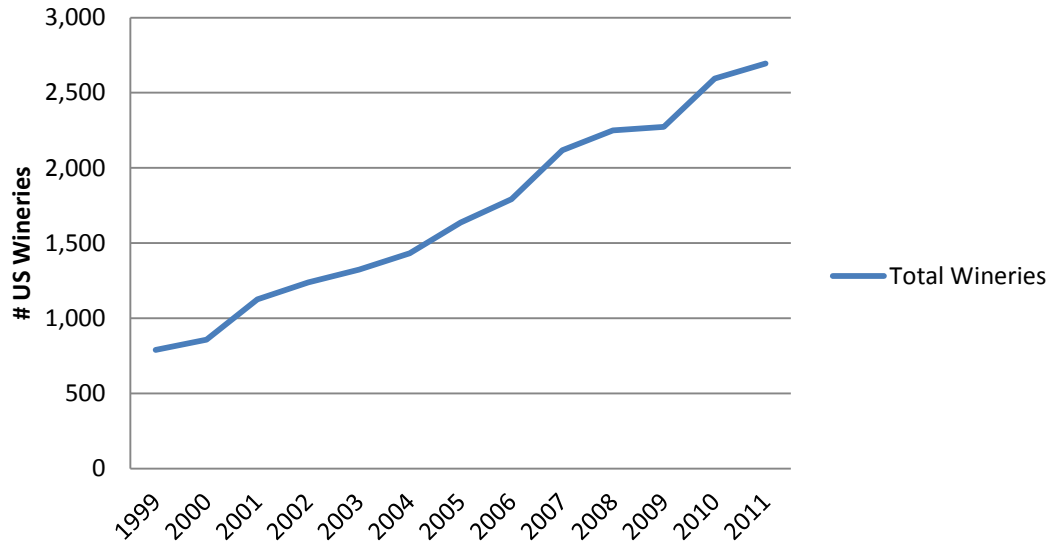


Figure 2.1: Number of Wineries in the U.S. from 1999 to 2011  
 Source: County Business Patterns, United States Census Bureau

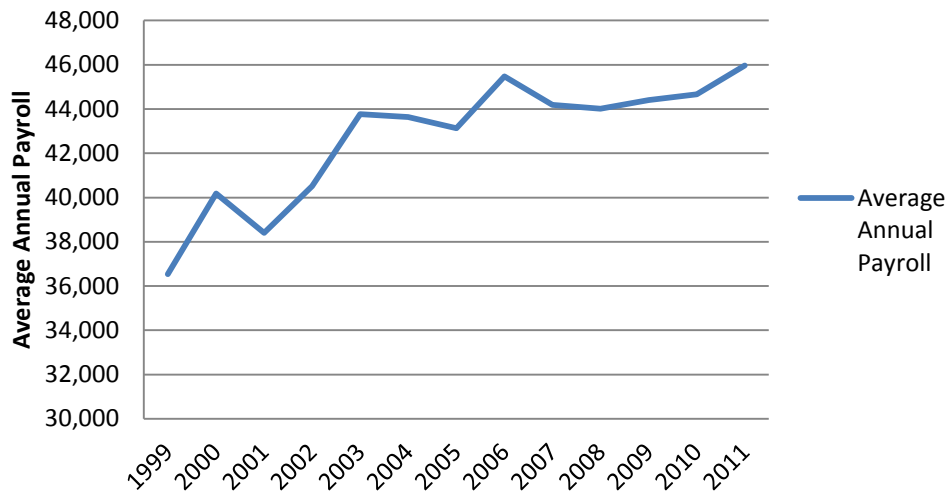


Figure 2.2: U.S. Wineries Average Annual Payroll from 1999 to 2011  
 Source: County Business Patterns, United States Census Bureau

The largest increase has been in small wineries with between 1 and 4 employees. In 1998 there were 273 of such wineries and in 2011 the number was 1,385. On the other hand the number of large wineries with between 250 to 499 employees has declined from 10 to 8 during this period while the number intermediate sizes have increased (see table 2.1 below).



Table 2.1: U.S. Number of Wineries by number of employees

|                 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | % Change<br>1998-2011 |
|-----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------------|
| 1-4             | 273  | 299  | 329  | 473  | 583  | 622  | 690  | 804  | 870  | 1080 | 1149 | 1126 | 1366 | 1385 | 407                   |
| 5-9             | 130  | 146  | 154  | 194  | 201  | 236  | 249  | 272  | 318  | 385  | 387  | 421  | 446  | 504  | 288                   |
| 10-19           | 128  | 125  | 142  | 168  | 176  | 181  | 198  | 235  | 256  | 288  | 310  | 333  | 367  | 385  | 201                   |
| 20-49           | 119  | 137  | 150  | 187  | 179  | 186  | 192  | 210  | 230  | 241  | 263  | 266  | 296  | 291  | 145                   |
| 50-99           | 41   | 42   | 42   | 49   | 58   | 59   | 63   | 70   | 69   | 73   | 90   | 84   | 80   | 85   | 107                   |
| 100-249         | 23   | 23   | 24   | 32   | 30   | 27   | 27   | 33   | 38   | 39   | 37   | 32   | 30   | 33   | 43                    |
| 250-499         | 10   | 13   | 11   | 7    | 7    | 10   | 12   | 11   | 8    | 9    | 10   | 8    | 7    | 8    | -20                   |
| 500-999         | 2    | 2    | 3    | 4    | 3    | 1    | 0    | 1    | 1    | 1    | 2    | 2    | 2    | 2    | 0                     |
| 1000 or<br>more | 1    | 1    | 1    | 1    | 2    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 0                     |

Source: County Business Patterns, United States Census Bureau

In the U.S. the number of acres dedicated to grape growing increased from 750 thousand in 1998 to 939 thousand in 2007 (Hodgen 2008). In 1998 a ton of grapes cost \$531 and in 2009 it cost \$902 (Stonebridge Research 2010). Wine demand has also experienced a substantial increase in the U.S. According to the wine institute, consumption of table wine in the U.S. has increased from 27 million gallons in 1940 (0.68 gallons per U.S. resident) to 749 million gallons in 2012 (2.73 gallons of wine per U.S. resident) (Wine Institute 2013). Since 2000, wine demand has increased by almost fifty percent, from 507 million gallons of table wine to 749 million gallons in 2012, moving the yearly average consumption of wine per resident from 2.01 gallons to 2.73 gallons.

All but a few wineries in the U.S. are family owned, bringing a slightly different managerial approach to the industry. Given this characteristic, performance data for wineries are proprietary and it is more difficult to estimate financial benchmarks for the sector given the range of winery sizes (Jordan 2010). Jordan, Aguilar and Gilinsky (2010) present performance benchmarks for wineries located in California, Oregon and Washington based on whether they sell less than 4,000 cases<sup>11</sup>, between 4,000 and 20,000 cases or more than 20,000 cases per year. Results indicate that average sales price per case, cost of goods sold per case and gross profit per case, all vary inversely with winery size. Very small

<sup>11</sup> In industry-standard, one case is equivalent to 9-liter.

wineries tend to sell most of their wine directly to consumers, and hence get a higher margin than big wineries that work with distributors. At the same time, small wineries carry a large amount of debt compared to the number of cases they sell. Hence, the final net margin of the small wineries in the west coast was 6.9 percent, 7.5 percent for the medium wineries and 14.8 percent for the large wineries in 2007.

Fickle et al. (1996) studied the investments and operating costs of small and medium wineries in Washington state. The range in amount invested varies substantially based on the number of cases produced per year. A 2,000 case winery invested on average \$560,894 while a 20,000 case winery invested on average \$2,339,108. Building and land costs were the largest part of the investment followed by cooperage. The study produced a financial analysis for five winery ranges (up to 2,000 cases, 5,000 cases, 10,000 cases, 15,000 cases and 20,000 cases) and concluded that all wineries had a positive cash flow starting in year three and that 2,000 case wineries have a low net present value (NPV) and internal rate of return (IRR) and a much longer timeframe for the equity payback and debt recovery. The wineries that reported the most successful financial indicators were the 10,000 case wineries and the 15,000 case wineries. The latter group was especially successful because they have more specialized personnel in each part of the firm.

After the repeal of Prohibition, some states implemented a three-tier system of alcohol distribution, while others decided to become alcoholic beverage control jurisdictions. The state of Washington has a unique privately operated retailing and distribution system since 2011 (Lee-Mullins 2009). The three tiers are producers, distributors and retailers. Hence, producers are connected to distributors and consumers to retailers, having intermediate markets between them. The main issue with the U.S. system is that there are 7,000 wine brands worth \$30 billion in retail sales that must squeeze through 550 distributors in 50 states in order to reach around 76 million wine consumers

(Veseth 2009). Furthermore, a number of distributors have recently merged thus concentrating the distribution power in fewer companies. Hence, the disparity in bargaining power between wine producers and major distributors keeps increasing, thus challenging the wineries' profitability.

When the state is an alcoholic beverage control jurisdiction part or all of the distribution tier, and sometimes the retailing tier, are operated by the state government itself. Another wine distribution aspect that varies among states is the direct shipment laws. Some states allow limited direct shipping and others do not. Missouri, Virginia and Maine allow direct shipments. A U.S. map that indicates the type of direct shipment law in each state can be found in appendix 1. A detailed table indicating where each state ships, the specific requirements, the legal amount to be shipped and the carriers can be found at appendix 1. Another challenge that wineries are starting to face is an increased number of online stores that sell wine. In 2012 Amazon launched its wine marketplace offering more than a thousand wines from several dozen wineries across the U.S. and from wines from more than ten countries (Fish 2012). Amazon has to follow the same shipping limitations as wineries, however, given its market position Amazon is becoming much like a new distributor that demands substantial fees from wineries in order to sell their wine online.

Despite the substantial increase in number of wineries and wine production in the U.S. during the last 15 years the amount of wine imports has increased by 144 percent (U.S. International Trade Statistics 2013). Meanwhile, U.S. wine exports have increased slightly more than the imports since 1999, 147 percent. In absolute numbers, the amount of wine imported by the U.S. in 2012 was more than four times the amount of wine exported (464,582,000 gallons and 99,865,000 gallons respectively) (U.S. International Trade Statistics 2013). U.S. imports come mainly from France, Italy and Australia. France dominated the US import market until 2010 when Italy took over this position (see figure 2.3 below). In the case of U.S. wine export markets, the United Kingdom dominated until 2008 when Canada became

the largest destination of U.S. wine exports.

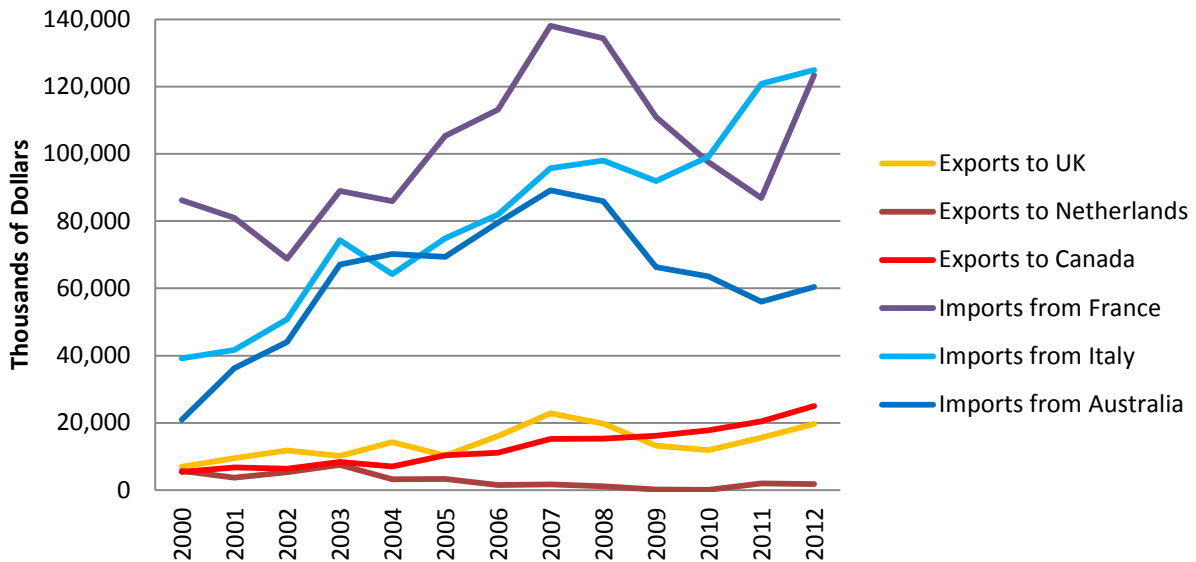


Figure 2.3: Main US Wine Imports and Exports from 2000 to 2012  
 Source: U.S. International Trade Statistics, United States Census Bureau

### 2.1.1 The Missouri Wine Sector

The number of wineries in Missouri has increased substantially during the last fifteen years. Missouri used to be one of the main wine states before Prohibition. Figure 2.4 below indicates the evolution of the number of wineries in Missouri since 1998. There is a discrepancy between the two data sources but the pattern is similar. It is likely that the numbers from the Grape and Wine Institute at the University of Missouri-Columbia are more accurate. The relevant point is that the number of Missouri wineries has substantially increased since 2006.

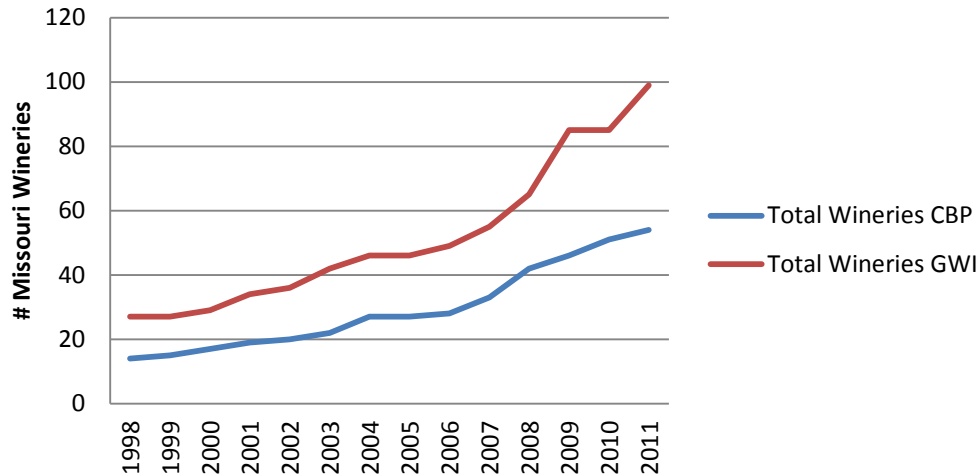


Figure 2.4: Number of Missouri Wineries from 1999 to 2011  
 Source: County Business Patterns, United States Census Bureau; and Grape and Wine Institute, University of Missouri-Columbia

According to the County Business Patterns the major increase in Missouri wineries has been in small wineries that have between one and four paid employees. The second largest increase has been in wineries that have between 50 to 99 employees, moving from 1 in 1998 to 4 in 2011 (see table 2.2 below).

Table 2.2: Missouri Number of Wineries by number of employees

|         | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | % Change 1998-2011 |
|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--------------------|
| 1-4     | 4    | 7    | 6    | 9    | 9    | 12   | 14   | 13   | 11   | 11   | 18   | 23   | 22   | 28   | 600                |
| 5-9     | 4    | 2    | 5    | 4    | 4    | 2    | 3    | 3    | 6    | 10   | 13   | 10   | 14   | 13   | 225                |
| 10-19   | 2    | 2    | 1    | 1    | 2    | 3    | 3    | 1    | 2    | 3    | 1    | 5    | 7    | 4    | 100                |
| 20-49   | 3    | 1    | 3    | 2    | 3    | 4    | 3    | 7    | 5    | 5    | 6    | 4    | 4    | 5    | 67                 |
| 50-99   | 1    | 2    | 2    | 2    | 2    | 1    | 4    | 3    | 4    | 4    | 4    | 4    | 4    | 4    | 300                |
| 100-249 | 0    | 1    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0                  |

Source: County Business Patterns, United States Census Bureau

Figure 2.5 below indicates the evolution of the average annual payroll of Missouri wineries. There have been important fluctuations and normally after every salary decrease there has been an increase in the number of wineries. Since 1998 the annual payroll of Missouri wineries has increased

around 30 percent.

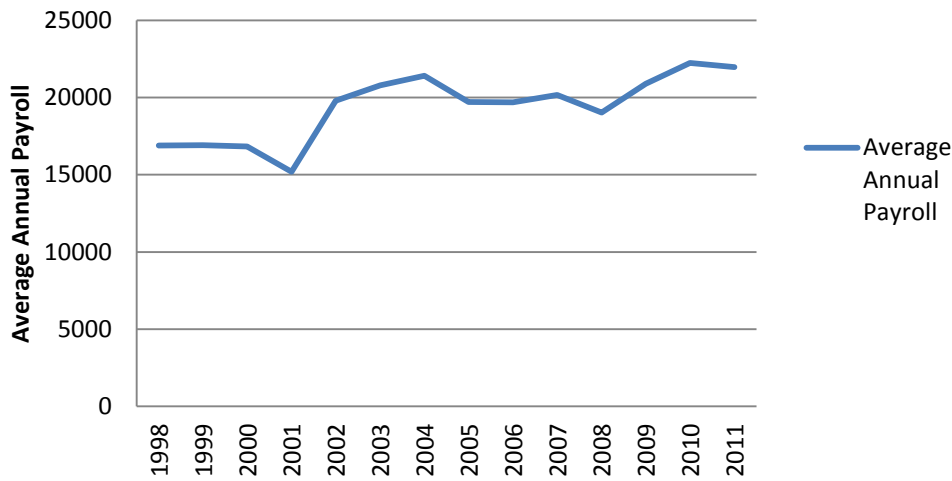


Figure 2.5: Missouri Wineries' Average Annual Payroll from 1999 to 2011  
 Source: County Business Patterns, United States Census Bureau

Table 2.3 below indicates the number of wineries in each region of Missouri. Most of the new Missouri wineries have located in the Southeast and Southwest regions and in the West Central and East Central region. The regions with lower number of wineries are in the North of Missouri.

Table 2.3: Missouri Number of Wineries by Region from 1998 – 2011

|               | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | % change |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----------|
| Central MO    | 3    | 3    | 3    | 3    | 4    | 6    | 6    | 6    | 6    | 7    | 6    | 5    | 5    | 7    | 1.33     |
| East Central  | 9    | 8    | 9    | 13   | 13   | 15   | 16   | 15   | 16   | 16   | 21   | 26   | 27   | 32   | 2.56     |
| Northeast     |      |      |      |      |      |      |      |      |      | 1    | 2    | 4    | 4    | 4    | 3.00     |
| Northwest     |      |      |      |      |      |      |      |      |      |      |      | 1    | 1    | 1    | 0.00     |
| South Central | 9    | 9    | 10   | 10   | 11   | 11   | 12   | 12   | 12   | 11   | 11   | 15   | 13   | 18   | 1.00     |
| Southeast     | 1    | 1    | 1    | 2    | 2    | 3    | 3    | 4    | 4    | 5    | 7    | 9    | 10   | 13   | 12.00    |
| Southwest     | 1    | 1    | 1    | 1    | 1    | 1    | 2    | 2    | 4    | 5    | 7    | 9    | 9    | 8    | 7.00     |
| West Central  | 4    | 5    | 5    | 5    | 5    | 6    | 7    | 7    | 7    | 10   | 11   | 16   | 16   | 16   | 3.00     |
| Grand Total   | 27   | 27   | 29   | 34   | 36   | 42   | 46   | 46   | 49   | 55   | 65   | 85   | 85   | 99   | 2.67     |

Source: Grape and Wine Institute, University of Missouri-Columbia

Even though the highest number of wineries is in the east central region of Missouri, the highest sales are in the south central region (see table 2.4). The largest increase in gallons sold has occurred in the southeast and west central regions but in absolute numbers these regions are still far from reaching the sales volume of the two leading regions. Vineyard acreage in Missouri continues to grow. In 2007

there were 1,400 acres and in 2009 there were 1,600 (Hodgen 2011). In 2010 the number of vineyards were 393, which produced 4,400 tons of wine grapes (Stonebridge Research 2010).

Table 2.4: Retail and In-State Wholesale Wine Sold in Missouri from 1998 – 2011

|               | 1998    | 1999    | 2000    | 2001    | 2002    | 2003    | 2004    | 2005    | 2006    | 2007    | 2008    | 2009    | 2010    | 2011    | % change |
|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|
| Central MO    | 42,610  | 41,239  | 57,041  | 62,378  | 61,087  | 67,052  | 77,849  | 69,874  | 85,937  | 94,216  | 155,741 | 97,383  | 104,547 | 109,035 | 1.56     |
| East Central  | 93,008  | 90,864  | 85,022  | 100,013 | 87,501  | 140,350 | 156,524 | 147,818 | 165,766 | 203,377 | 200,759 | 254,532 | 228,116 | 246,406 | 1.65     |
| Northeast     |         |         |         |         |         |         |         |         |         | 1,057   | 1,741   | 6,577   | 3,902   | 4,172   | 2.95     |
| Northwest     |         |         |         |         |         |         |         |         |         |         |         | 5       | 174     | 20      | 3.21     |
| South Central | 201,066 | 224,352 | 242,737 | 256,916 | 285,186 | 334,100 | 376,207 | 401,124 | 401,708 | 451,262 | 449,802 | 471,488 | 519,609 | 510,817 | 1.54     |
| Southeast     | 1,235   | 529     | 1,088   | 3,040   | 2,505   | 3,829   | 3,930   | 6,250   | 6,538   | 7,163   | 9,568   | 10,053  | 11,552  | 11,667  | 8.45     |
| Southwest     | 44,817  | 51,121  | 57,271  | 56,980  | 64,783  | 68,878  | 65,204  | 67,302  | 66,009  | 61,917  | 55,186  | 62,063  | 62,938  | 66,104  | 0.47     |
| West Central  | 4,405   | 7,096   | 6,528   | 7,867   | 10,205  | 9,797   | 7,860   | 9,660   | 14,736  | 16,849  | 15,957  | 22,608  | 22,221  | 22,811  | 4.18     |
| Total         | 387,141 | 415,201 | 449,687 | 487,194 | 511,267 | 624,006 | 687,574 | 702,028 | 740,694 | 835,841 | 888,755 | 924,709 | 953,058 | 971,031 | 1.51     |

Source: Grape and Wine Institute, University of Missouri-Columbia

Figure 2.6 illustrates the growth in wine sales at wineries and in-state wholesalers in Missouri.

During the major increase of Missouri wineries, between 2002 and 2004, the number of gallons sold increased from 511,267 to 687,574. The next substantial increase of Missouri wine sales occurred between 2006 and 2008, when gallons sold reached 888,755 (Leonardelli 2013).

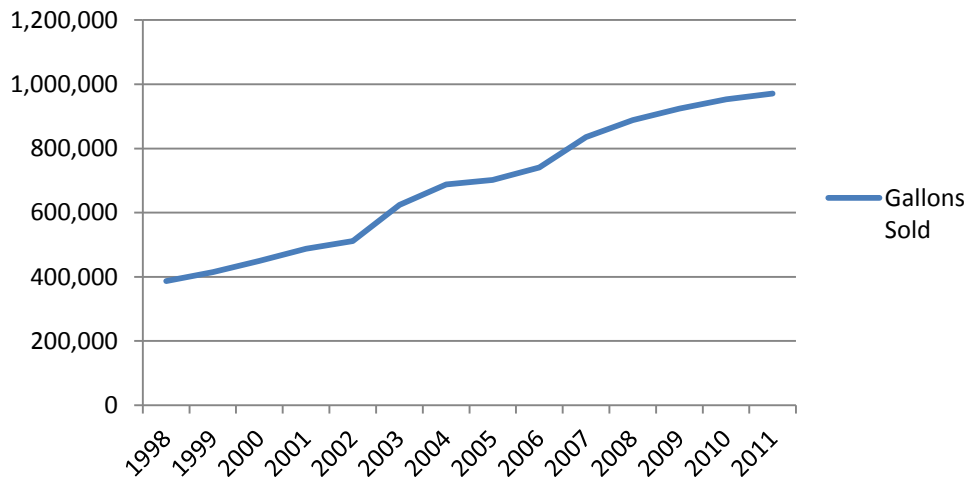


Figure 2.6: Total Gallons of Missouri Wine Sold Retail and by In-State Wholesale outlets

Source: Grape and Wine Institute, University of Missouri-Columbia

Table 2.5 below indicates the evolution of Missouri wine sales in Missouri and its market share.

Missouri wine sales increased rapidly during the period 1998 to 2007 but since the recent economic and

financial crisis the rate of increase in Missouri wine sales has declined. In 2011, Missouri wine represented 7.6 percent of the total wine sold in Missouri. Since 2007 the share of the Missouri wine market held by Missouri wineries has been relatively stable between 7.6 and 8.2 percent.

**Table 2.5: Missouri Wine’s Market Share in Missouri from 1998 – 2011**

|  | 1998      | 1999      | 2000      | 2001      | 2002      | 2003      | 2004      | 2005      | 2006       | 2007       | 2008       | 2009       | 2010       | 2011       |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|------------|
| Sale of Missouri Wine                      | 387,579   | 415,201   | 450,355   | 487,756   | 511,267   | 624,006   | 687,574   | 702,028   | 740,694    | 835,841    | 888,755    | 924,709    | 953,058    | 971,031    |
| % Increase or Decrease Over Preceding Year |           | 0.067     | 0.078     | 0.077     | 0.046     | 0.181     | 0.092     | 0.021     | 0.052      | 0.114      | 0.060      | 0.039      | 0.030      | 0.019      |
| Sales of All Wine in Missouri              | 7,485,107 | 8,368,221 | 8,009,995 | 8,076,531 | 9,943,675 | 9,260,773 | 9,567,313 | 9,787,032 | 10,461,612 | 10,909,754 | 11,182,753 | 11,240,883 | 12,185,596 | 12,792,844 |
| % Increase or Decrease of All Wine in MO   |           | 0.106     | -0.045    | 0.008     | 0.188     | -0.074    | 0.032     | 0.022     | 0.064      | 0.041      | 0.024      | 0.005      | 0.078      | 0.047      |
| Market Share of Missouri Wine              | 0.052     | 0.050     | 0.056     | 0.060     | 0.051     | 0.067     | 0.072     | 0.072     | 0.071      | 0.077      | 0.079      | 0.082      | 0.078      | 0.076      |

Source: Grape and Wine Institute, University of Missouri-Columbia

### 2.1.2 The Virginia Wine Sector

Table 2.6 below shows the growth in the number of Virginia wineries by number of employees. Between 2004 and 2005 the number of wineries with one to four employees increased from 15 to 25, and by 2011 there were 32 wineries in this size category. The number of wineries with five to nine employees increased from 1 in 1998 to 11 in 2011. During this period some wineries grew from the one to four employees range to five to nine employees while others grew even more into the ten to nineteen employee ranges. In 2011 there was just one winery that had between fifty to ninety-nine employees in Virginia.

Virginia is the seventh largest state in terms of wine grape production. In 2009 the total amount of wine grape production was 8,600 tons (Stonebridge Research 2010).



Table 2.6: Virginia Number of Wineries by number of employees

|       | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | % Change<br>1998-2011 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------------|
| 1-4   | 2    | 1    | 5    | 7    | 13   | 11   | 15   | 25   | 26   | 26   | 30   | 29   | 31   | 32   | 1,500                 |
| 5-9   | 1    | 3    | 4    | 2    | 6    | 8    | 5    | 7    | 5    | 7    | 7    | 12   | 10   | 11   | 1,000                 |
| 10-19 | 1    | 2    | 1    | 6    | 2    | 3    | 5    | 4    | 6    | 6    | 10   | 9    | 11   | 12   | 1,100                 |
| 20-49 | 2    | 2    | 1    | 2    | 1    | 2    | 2    | 3    | 5    | 5    | 5    | 6    | 9    | 7    | 250                   |
| 50-99 | 0    | 0    | 1    | 1    | 2    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 0                     |

Source: County Business Patterns, United States Census Bureau

The Virginia wine distribution system is a state jurisdiction system. However, wine with less than 14 percent alcohol may be sold at nongovernmental supermarkets and convenience stores. In Virginia wineries that have a Shipper License may ship up to two cases of wine per month to the same person (Wine Institute 2012). In 2010 the Virginia Department of Agriculture and Consumer Services (VDACS) announced the launch of a new state-of-the-art online ordering system for restaurants and retailers that want to order Virginia wine through the Virginia Winery Distribution Firm (VWDC) (Anonymous 2010). This new web-based system provides wineries with an alternative to using independent wine wholesalers and connects them simultaneously with restaurants and retailers. Other advantages for wineries include the greater exposure to the buyers and greater efficiency via a reduction of transaction costs.

### 2.1.3 The Maine Wine Sector

Table 2.7 below indicates the number of wineries in Maine based on the number of employees. The largest increase in numbers has been in wineries that have between one and four employees. In 1998 there were two wineries and in 2011 there were six wineries with one to four employees. Since 2008 there has been another winery with five to nine employees and in 2011 another one joined that category. Finally, in 2010 a new winery expanded to employ between ten to nineteen employees.

The Maine wine distribution system is a state jurisdiction system. Hence, the state has the wine distribution arranged via a contract with private businesses based on a commission on sales. In 2009

Maine implemented a Direct Shipper License that allows wineries to ship up to 12 cases to a recipient address in Maine during a calendar year (Wine Institute 2012).

Table 2.7: Maine Number of Wineries by number of employees

|       | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | % Change<br>1998-2011 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------------|
| 1-4   | 2    | 2    | 3    | 2    | 2    | 2    | 2    | 3    | 3    | 6    | 4    | 7    | 6    | 6    | 200                   |
| 5-9   | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 2    | 2    | 2    | 3    | 200                   |
| 10-19 | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 2    | 2    | 100                   |

Source: County Business Patterns, United States Census Bureau

## 2.2 Main Challenges Faced by U.S. Wineries

Given the globalization of markets, the regulation of the alcohol distribution sector and the changing climate, wineries are facing new opportunities and challenges for achieving sustained competitive advantage. Most of the wine economics research literature addresses a range of external challenges and opportunities faced by winery managers. A substantial part of the recent winery related literature focuses on understanding the exporting challenges faced by countries. Wine exporting challenges have been especially critical in the U.S during the last decade. Until very recently U.S. exports have increased at a much slower pace than imports (Castaldi 2002). Silverman, Sengupta and Castaldi (2004) explore in detail the main exporting constraints faced and the central strategies adopted, mainly by Californian wineries, for selling overseas. One of the key strategies for increasing sales overseas involves rethinking branding strategies that fit foreign markets. Loureiro (2003) also points out the importance of rethinking marketing strategies and emphasizes the distinctive value added of environmentally friendly labels. A more recent area of marketing research in the wine sector is concerned with online marketing strategies. Research documents the success of many wineries that have invested in online sales mechanisms (Thach 2009).

Winery direct sales to consumer grew until 2008 but after the recession visitor numbers have declined and some wineries have expanded their sales via wholesalers under the three-tier system

(Hodgen 2011). In 2010 forty percent of sales dollars were generated via wine trade through the three-tier system, mainly in supermarkets. This number is unusual in the Midwest where many distributors have been reluctant to distribute products from small wineries. However, the increase of wineries participation in the three-tier system has restricted wineries profits since distributors usually purchase wine at about fifty percent of retail pricing (Hodgen 2011). Missouri wineries face obstacles in penetrating the restaurant market even though the increase in preference towards “local food”.

Besides the initial decrease in winery visitors during the recession, what is limiting wineries from expanding their direct sales are the cost and compliance with shipping regulations in Missouri and other states (Hodgen 2011). Wineries would like to expand their direct sales since this is where they gain more margin, however, many of them are discouraged from developing this market given the complexity of regulations faced inside and outside the state. Seeing these obstacles, the State of Missouri with the aim of supporting the development of the wine industry, has allowed wineries to self-distribute their wine given certain conditions. For instance, since 2007 all wineries are required to have a Direct Wine Shipper’s Permit that allows them to ship not more than 2 cases (each case not containing more than nine liters) of wine a month to a consumer. However, not that many wineries self-distribute their wine and the ones that do earn only about three percent of their revenue from it (Wine Institute 2012).

Anderson, Findlay, Fuentes and Tyerman (2008) identify the main direct and indirect impacts of climate change on grape and wine production and propose several adaptation strategies to sustain the profitability of these sectors. Galbreath (2011) studied the response of wineries to climate change distinguishing the environmental and financial motives behind these strategies positing that both are important in enhancing the competitiveness of wineries. Some authors identify the benefits and competitive advantages of including environmental concerns in the whole wine production and delivery process (Marshall 2005; Cordano 2010; Atkin 2012).

Less literature is concerned with soft or less tangible aspects associated with internal challenges and opportunities of wineries. Few authors explore the sales-quality relationship at wineries and cellars doors as a key component of sales patterns (O'Neill and Charters 2000; O'Neill 2002). Thach and Kidwell (2009) analyze human resource practices in U.S. and Australian family wineries and conclude that formalized contracts increase effectiveness and profitability. Devesa-Rey et al. (2011) explore the impact on profitability of reformulating goals and strategies when considering recycling wineries' wastes. The authors identify some opportunities for closing the production cycle by investing in technologies that allow the production of commercial by-products. Dillon et al. (1992) indicate that location is a vital component for winery success especially for wineries that produce less than 20,000 cases per year since it is what brings customers on-site. Dillon et al. (1992) identify that wineries that are clustered with other wineries increase tourist traffic, and reduce marketing costs increasing their success.

One of the major soft internal challenges faced by small and medium wineries is the background of the founder or manager (Aggelogiannopoulos 2007; Charters, Clark-Murphy et al. 2008) and the ability to develop adequate managerial skills (Dillon 1992). Dillon et al. study indicates that adequate planning and management are key determinants of small and medium winery's success or failure. As the authors point out "economically unsuccessful wineries are not managed by individuals who plan to fail, but by managers who often fail to plan." It is normally the case that wineries are operated by a grape grower that has vertically integrate downstream into winemaking (Chaddad 2013). When this is the case, and when wineries are small, there is a major need to ensure that the new winery owners acquire the necessary managerial knowledge to ensure the winery's sustainability. Poor time management and poor financial management tend to bring these wineries to failure (Morris 2008; Dobie 2009). White (2010) mentions that it is necessary to think first about who is the ideal customer (the target market),

before deciding about the produce, price, promotion and distribution strategies, a step that is frequently not taken.

The comparatively smaller literature related to the soft or less tangible aspects of wineries challenges is still focused on the specific events or static causes that limit wineries' sustained competitive advantage instead of focusing on the dynamics and relationships among causes that create the challenge. Given the current constant change in the wine market and in the organizational features of wineries, there is a need to study the entrepreneurship and leadership processes that can effectively enhance wineries' adaptation and sustained competitive advantage. As pioneering research in entrepreneurship and leadership has indicated, one of the most important areas to investigate is the relationship of human cognition and preferences to the persons' environment, relationships and institutions (Grégoire 2011; Scharmer and Kaeufer 2013). With this aim, the next section of this chapter explores the behavioral foundations of entrepreneurship and leadership through systemic and dynamic lenses.

### **2.3. Entrepreneurship and Leadership Behavioral Foundations**

In this section we explore the behavioral foundations of entrepreneurship and leadership. Under the dynamic and complex lenses of entrepreneurship and leadership processes, their behavioral foundations are understood in a broader sense than traditional frameworks hold in economic or managerial schools of thought. The present broader behavioral foundations of entrepreneurship and leadership include humans' bounded rationality (Simon 1972) but acknowledge that there is a need to further expand the understanding of human behavior so that the analysis of economic organization can include more means than just incentives and opportunism (Teece 2009). To that end this dissertation further explores the human cognitive system, and its means of enhancing well-being. The co-evolutionary process of the human brain with its environment and its ability to reflect, to expand its range of awareness and to

understand systems is also presented (Senge 1991; Sterman 1994; Loevinger 1998; Gintis 2006; Stapley 2006; Gintis 2011; Scharmer and Kaeufer 2013). A point recognized in this co-evolution is the underlying continuous learning process that humans undertake and its effects on their preferences and decisions (Bowles 2011). This section also elaborates on the effect of culture on people's values and their degree of internalization, and the effect of group or organization identification on loyalty and productivity (Stapley 2006). The study includes as well the impact of human relationships on the effectiveness of entrepreneurship and leadership and how institutions and the economic system play a big role in the success of these processes (Scharmer and Kaeufer 2013).

### **2.3.1 Human Rationality**

People's cognitive systems are formed by one's brain structure. Peoples' self-knowledge and fitness<sup>2</sup> characteristics determine their individual preferences and will-power. The higher the person's capacity for learning about herself and the systems that she is part of, the easier for her to achieve her fitness goals and the more the persons' preferences will be selected such that they will favor her well-being (Scharmer 2007).

A rational agent is one with consistent preferences, regardless of the arguments in the preference function and their distribution in the indifference curve. As biology and psychology indicate, biological agents and human beings possess an evolved, genetically rooted set of routines that indicate how to effectively respond to internal and external circumstances in order to enhance their fitness (Wilson 2012). Over time, individuals have created and accessed more and more information which has developed a greater ability to convert information into knowledge. This has led to a larger variety of option to choose from. As a result, individuals have developed more means to satisfy their preferences

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<sup>2</sup> Originally, the evolutionary concept of fitness was associated with the number of offspring that survived to successfully reproduce. Recently, fitness has been applied to the emotional, mental and spiritual contentment of the individual, her general welfare. Gintis, H. (2006). "Adapting Minds and Evolutionary Psychology." Journal of Bioeconomics.

thus increasing their well-being (Bowles 2003). Consequently, the natural feedback process involves the adaptation of preferences given the evolving mental capacities, knowledge and environment. Hence, preference functions are directly associated with the decision maker's current state and their preferences evolve as their states evolve (Bettman 1998; O'Donoghue 2001). Consequently, subjective well-being is associated more with the changes in fitness than with its fitness level (Helson 1964; Easterlin 1973; Oswald 1997).

Neuroscience research supports the modeling of human choices as the maximization of one's payoffs, indicating that the human brain does undertake an optimization process in order to identify the maximum reward in each circumstance. In other words, the brain seeks the best option in order to enhance fitness (Parker 1998; Schall 1999; Shizgal 1999; Glimcher 2004; Glimcher 2005). Hence, humans are always maximizing their subjective well-being given the knowledge, process capacity and energy level that they have and the environment that they face. This process is what economists define as bounded rationality. It is very important here to highlight the difference between an objective rational behavior (that follows a logical construction) and a subjective determination of well-being (that follows a logical construction but also considers emotional states). Individuals are rational, they all maximize their choices following a sequence of logical reasoning, but they all have emotions in their preference function. Hence, the resulting behavior can be welfare reducing in somebody's eyes, and welfare enhancing in somebody else's eyes (Baumeister 2008).

### **2.3.2 Mental Models and Learning**

Some scholars and managers that explore the organizational learning approach of the firm (Senge 1991; Scharmer 2005; Scharmer 2007), together with other scholars concerned with learning and mental models (Johnson-Laird 1983; Denzau 1994) have argued that people can learn to reflect upon and question their current mental models and beliefs, to identify unhealthy patterns and achieve higher

well-being, consciousness, creativity and productivity. What are the economic impacts of higher inner (personal) and outer (with one's surroundings) consciousness levels? When one develops the synapses related to a reflective and quiet mind that can observe itself as well as the emotions, one gets a higher level of self-consciousness (inner-consciousness) that brings more self-understanding and allows one to have a higher level of self-control -decision power and lower reactive behavior (Shear 1999; Thompson 2001; Lutz 2003; Cosmelli 2004). Self-control allows one to act in accordance with one's goals bringing self-esteem and increasing the trust within relationships (Gintis 2000; Gintis 2006; Stutzer 2006; Baumeister 2008). Research indicates that individual with higher self-knowledge and ability to make deliberate choices achieve faster and less costly (less inputs consumption -time, energy, and information) fitness than individuals whose behavior is mainly routine-based. In particular, research on the benefits of self-control indicates that self-control favors fewer psychological symptoms and problems, fewer emotional problems such as anxiety, anger and depression, as well as higher self-acceptance and self-esteem (Tangney 2004). Zimmerman (1990) found that people with high self-control learn faster and Cox (2000) observed that they are seen as fairer and more trustworthy. Hence, the selection process favors the development of the mental body in order to balance it with the emotional body. Higher levels of individual inner-consciousness reduce the level of behavior uncertainty, increase learning capacity and productivity, and reduce transactions costs allowing firms to operate effectively (Myers 1993).

An observant and reflective mind can also be applied to one's surroundings (outer-consciousness), bringing understanding of bigger systems such as his family, his work team, his department, the relationships and results of different departments working together, the firm as a whole, and the planet systems. With this new understanding, a person is not just aware of the direct impacts of his actions but also of the indirect consequences and the circular cumulative causation of the



different levels of the system. Research about people's ability to understand complex systems indicates that our brains are not yet able to fully analyze and comprehend complex systems and that poor decisions are consequently undertaken (Sterman 2000). This research suggests the need for enhancing systems thinking education together with system dynamics and their related simulation tools in order to achieve more effective decisions about how to enhance the behavior of complex systems (Sterman 2010). For the firm, this could result in more productive team work, more effective leadership and entrepreneurial management, more effective inter-departmental collaborations, as well as more beneficial relationships with the rest of the supply chain and other partners (Senge 1991; Scharmer 2005).

Today, the learning process is mainly perceived within Dewey's learning theory (1998) that sees the learning cycle containing four stages: observation, discovery, invention (new actions) and production (of new actions). The main conflict between Dewey's approach and how learning occurs now is that it is based on remembering similar situations, decisions and outcomes and elucidating the inner and outer information needed to adapt to the new environment more efficiently so as to make a successful choice (Sugrue 2005). Given the current fast pace of change in our economy and the increasing uncertainty about the future, new ways of learning that focus on understanding the forces that drive firms would provide part of the necessary means for enhancing sustainable competitive advantages.

The key benefit of developing one's capacity for inner and outer consciousness is that it allows the emergence of a not very common type of learning. Currently, learning is mainly limited to the two main tasks of thinking and doing. Ultimately, all learning occurs from our interactions with the world and capacities develop from our interactions. What differ from one type of learning to the other is the depth of the awareness about the forces that shape the current reality and the consequent source of action. Hence, with the development of our consciousness deeper learning occurs by sensing, witnessing and

realizing. After this initial deeper learning process, thinking and doing finishes the details and integration process (Scharmer 2005). The power of deeper levels of learning is that it increases individuals' awareness of the larger whole -both as it is and as it is evolving. This leads to entrepreneurial actions that increasingly serve the emerging whole and sustained competitive advantage is enhanced. Hence, the development of individuals' inner and outer consciousness levels is a key firm asset for the creation of sustained competitive advantage.

Otto Scharmer (2007) in the book *Theory U, Leading from the Future as It Emerges*, exposes what is called Theory U. Theory U presents a process through which somebody can develop the abilities to shift one's learning skills from remembering things from the past towards learning from the emerging future. This technique changes in one of the most profound ways people's perspective about challenges and means to address them. Figure 2.7 below describes the steps suggested for enhancing people's ability to learn from the emerging future. The key aspects involved are to suspend one's ideas and judgments and to keep an open mind so that one can see the situation with fresh eyes. The next step is to direct the attention to the field and sense what is happening there with empathy (what Scharmer and Kauffman call as "open heart"), not letting any cynical ideas and selfish emotions block the exploration. The next important step is to let go of the old frames and ideas that block one from acting in accordance with what has been seen and sensed so that determination (in the figure below it is labeled as an "open will") can take place and no fears interfere with the process. After this opening process one is able to just "be there", be present while sensing what is happening. Once the person is open, new visions and ideas will emerge. Writing down or putting the new visions into a more concrete form enables the crystalizing process necessary for the embodiment of the first prototype of the new vision. Then, what it is labeled as "performing by operating from the whole" occurs. In economic terms this can be understood as a company that now also considers the social and/or environmental system that it is part

of. Hence, every time more, the company accounts for the whole system that operates in and is a co-creator of.

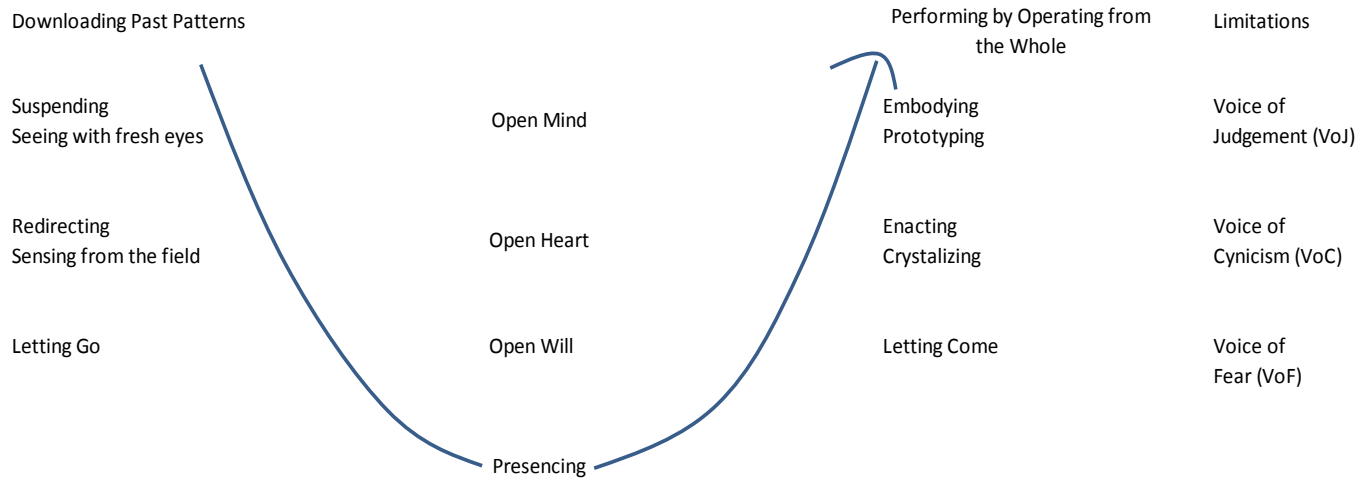


Figure 2.7: Learning from the Emerging Future Process

Source: Leading from the Emerging Future, from Ego-System to Eco-System Economies. Sharmer and Kaufer

### 2.3.3 Gene-Mind Co-Evolution

Research on human consciousness evolution indicates that the development of the conscious 'I' as opposed to the reactive 'Me' is a new adaptive phenomena originated with the development of modern societies (Gelter 2003; Lutz 2003). Hunter-gatherer societies needed to relate to a hostile environment that demanded high emotional- instinctive reactionary capabilities in order to survive. The rise of modern societies required a new set of abilities at every level (physical, emotional and mental). Specifically, the industrial revolution shifted the premium on physical labor demand towards a demand for intellectual capital. Settlement demanded a new set of social and legal norms to ensure social stability and the proper function of markets. Education and role modeling ensured the integration of the new social norms and the mental abilities needed in the new economic and societal structure. As a result of the new societal structure and culture, human physiology adapted to the now less threatening environment and provided humans with a higher level of self-consciousness, hence the 'I' that is less

reactionary and more reflective (Gelter 2003). The capacity for reflection and resulting human metacognition (one's knowledge concerning one's own cognitive processes or anything related to them) is thus epigenetic (the result of the genetic interaction with the environment), the result of a better fit in the new environment and can be learned and encouraged via different social institutions (Damasio 2008). The development of human mental capacities is associated with human's development of a sense of free will (Freud 1954). As Lutz and Thompson point out (Lutz 2003), neuroscience research is moving from the traditional experimental methods towards neurophenomenology with the "aim to narrow the epistemological and methodological distance in cognitive neuro-science between subjective experience and brain processes" (page 49) As a result, neuroscience research is shifting towards a dynamic complex system research approach that acknowledges the evolutionary brain development process (Varela 1999; Lutz 2003). As Herbert Gintis points out "the brain evolved because larger and more complex brains, despite their costs, enhanced the fitness of their carriers" (Gintis 2009).

#### **2.3.4 Co-Evolution of Human Awareness with the Economy and Institutions**

As in gene-mind coevolution, there is a co-evolutionary process between people's level of awareness and the economic system and institutions that are created in a society. Table 2.8 below illustrates the evolution of people's awareness since societies were driven by the state under a mercantilist and socialist approach. The table below is a compilation of tables from Scharmer and Kaufer, *Leading from the Emerging Future*. An interesting aspect of human awareness evolution is its relationship with the way in which people, groups, institutions and the world listen and express themselves. According to Scharmer and Kaufer (2013) the co-evolution of human awareness with the economy and institutions has undergone four main stages and hence, four types of societies can be distinguished. According to the authors' argot, "traditional awareness" corresponds to the society 1.0, and it is associated with the listening approach of "downloading habits of thought". This means that in society 1.0 people's

awareness is mainly confined to its traditional boundaries and routine thought patterns are involved. In society 1.0, the level of groups' conversations is labeled as "speaking from conforming" and the organizational type associated with society 1.0 is the "centralized control: organizing around hierarchy". Finally, the global coordinating system under society 1.0 is based on hierarchy via commanding. As a result of these ways of listening, conversing and organizing the markets developed are "state-centric, organized in a hierarchical way and implementing control over its citizens and institutions". Society 1.0 has one dominant sector, the public sector, which aims to achieve stability via coercive practices. The characteristics associated with the other three types of societies identified by Scharmer and Kaufer are posited in figure 2.8.

Over time societal challenges evolve together with people's ways of listening and conversing, creating new ideologies and institutions. Today, there are all four types of societies in place around the world. However, the dominant types are transitioning from society 3.0 - with mainly stakeholder awareness that is being redirected, to society 4.0 - with eco-system awareness that is letting go of previous frames, while containing parts of societies 1.0 - ruled by traditional awareness, and 2.0 - dominated by ego-system awareness that are learning to suspend.

Table 2.8: Co-Evolution of Human Awareness with the Economy and Institutions

| Field: Structure of Attention             | Micro: Attending (individual)              | Meso: Conversing (group)                                    | Macro: Organizing (institutional)                         | Mundo: Coordinating (global system)                  | Dominant Ideology                                | Society                                   | Markets                                     | Sectors   | Primary Societal Challenge                 | Response Coordination Mechanism                     | Primary Source of Power  |
|---|--|---|---|--|--|---|---|---|--|---|--|
| 1.0<br>Traditional Awareness              | Listening 1: downloading habits of thought | Downloading: speaking from conforming                       | Centralized Control: organizing around hierarchy          | Hierarchy: commanding                                | Mercantilism; Socialism (state-centric) Thought  | State Driven<br>Mercantilism, Socialism   | State-Centric; Hierarchy & Control          | 1 sector, Public  | Stability                                  | Commanding: Hierarchy                               | Coercive (sticks)  |
| 2.0<br>Ego-System Awareness; Suspending   | Listening 2: factual, open-minded          | Debate: speaking from differentiating                       | Divisionalized: organizing around differentiation         | Market: competing                                    | Neoliberal & Neoclassic (market-centric) Thought | Free Market Driven, Laissez-Faire         | Free-Market; Markets & Competition          | 2 sectors, Public & Private                                   | Growth                                     | Competing: Markets                                  | Remunerative (carrots)   |
| 3.0<br>Stakeholder Awareness; Redirecting | Listening 3: empathic, open-hearted        | Dialogue: speaking from inquiring others & self             | Distributed/ Networked: organizing around interest groups | Negotiated Dialogue: cooperating                     | Social Democratic or Progressive Thought         | Stakeholder Driven, Social Market Economy | Social Markets; Networks & Negotiation      | 3 sectors conflicting, Public, Private & Civil Society - NGOs | Negative Domestic Externalities            | Negotiating: Stakeholder Dialogue                   | Normative (values)   |
| 4.0<br>Eco-System Awareness; Letting Go   | Listening 4: generative, open-presence     | Collective Creativity: speaking from what is moving through | Eco-system: organizing around what emerges                | Awareness-Based Collective Action (ABC): co-creating | Eco-System-Centric Thought                       | Eco-System Driven, Co-creative Economy    | Co-Creative; Seeing & Acting from the Whole | 4 sectors co-creating, above plus cross-sector co-creation    | Global Disruptive Externalities Resilience | Presencing: Awareness-Based Collective Action (ABC) | Awareness: actions that emerge from sensing the emerging whole |

Source: Combination of Tables from Leading from the Emerging Future book. Scharmer and Kaufer

In this complex process, culture plays an important role in shaping people's attention and minds towards one goal or another. However, there is a limiting factor that prevents certain cultural values from spreading and changing the current paradigm. This limiting factor is the level of internalization of certain values and life's perspective. The next section enhances this model of the evolutionary process with the specific roles of cultural evolution and norm internalization in human behavior.

### **2.3.5 Culture, Norm Internalization and Behavior**

Research on culture indicates that the self-knowledge and fitness goals of individuals and organizations determine the social norms that prevail in the system. Cultural transmission of preferences allowed humans to adapt flexibly to rapidly changing circumstances and to modify the results of individual fitness maximization where these are not beneficial, on average, to members of the group. As Herbert Gintis notes in his book *Gene-culture coevolution and the nature of human sociality* (2011), there is a co-evolutionary process between genes and culture where each constrains and facilitates the development of the other. Culture and its associated social and legal norms and related institutions, are developed in order to confine and program individuals' behavior to certain societal values. Selection has led to the evolution of societal values that promote pro-social emotions of empathy, shame, guilt and such. As a result, societies have developed a series of rewards and punishments that together with social norms align behaviors towards the convergence of a dynamic evolving equilibrium of institutions that enhances agents' fitness. Aumann (1987) presented the emergence and development of social dynamics as a correlated equilibrium process in which the complex social norms are the dynamic leaders that people follow. Mutations can be of two types. The first considers the incorporation of a cultural norm with higher payoffs, and the second modifies current institutional strategies in ways that enhance fitness.

Mutations or changes in values and consequent preferences originate evolutionarily or by force. A behavioral type in the population increases via an evolutionary process if its expected payoff exceeds

the average—the so called payoff-monotone model. For that to happen, there has to be a critical mass of individuals or social stimuli that overrides the established system, as well as minimal social and cultural institutions to ensure the transmission of the new values to other individuals and institutions (Bowles 2003; Bowles 2011). However, a behavioral type can be imposed when it causes people to want, or feel obliged, to do things. Then, cultural transmission can override fitness. Hence, societies and organizations may be at a locally unstable equilibrium and must learn how to move towards a locally<sup>3</sup> or globally stable point.

As Lao Tzu synthesized<sup>4</sup> there is a lag and many cycles in the learning process until senses and thoughts become ones' character and form a consistent preference function. Research indicates that the degree of consistency in human values and resulting preference functions is related to the degree of the conscious internalization of the values (Gintis 2011). Vertical norms transmission (family), oblique norms transmission (teachers, leaders, managers, colleagues), payoff-based updating (deciding based on what provides higher benefit), and experience, all effect the selection of norms internalized and their level of internalization (Bowles 2011). Individuals who have fully integrated the value of 'truth' for instance, will not lie no matter what circumstances they face, and hence, there is no behavior inconsistency in them since for them the cost of lying is always higher than any benefit that they can gain from it (Gintis 2006). However, if values are not fully integrated and are mainly just respected because of the possible punishment, then the individual faces, for instance, three decision centers that suggest three different choices based on the current physical, emotional and mental needs. Consequently, depending on the circumstances a different decision center -physical, emotional or mental- will dominate the others. As Ekman et al. remark, "if an objective fitness is associated with each of these choices, Darwinian selection

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<sup>3</sup> In locally stable equilibrium there exists a neighborhood of states around the equilibrium state such that if the equilibrium state is displaced to some state in the neighborhood, the population dynamic will return to the equilibrium.

<sup>4</sup> Take care of your Thoughts, for they become Words. Take care of your Words, for they become Actions. Take care of your Actions, for they become Habits. Take care of your Habits, for they form Character. Take care of your Character, for it forms your Destiny. And your Destiny is your Life.

will favor a mutant who suppresses two of the three decision centers or, better yet, integrates them” (Ekman, Darwin et al. 2002). The distinction between different levels of knowledge or values integration is not normally considered in economic models and managerial research, but as described, it plays a major role in human behavior.

The relationship between peoples’ level of internalization of social values that favor the whole and the transition through the four types of societies described above is illustrated in table 2.9 below. When people have a low level of social and systemic values internalization and their main focus in on the whole, then chances are high that a type 1.0 society governed by a central planning authority will develop. On the other hand, when people have a high level of societal values internalization and their focus of attention is primarily on the parts of the system then a type 3.0 society based on negotiation and dialogue is likely to emerge.

Table 2.9: Four Economic Coordination Mechanisms: A journey of Interiorizing the Whole

| System Integration / Degree of Interiorizing the Whole | Primacy of the Whole                     | Primacy of the Parts                                  |
|--|--|---|
| High   | 4.0 ABC*: Head, Heart & Hand Intentional | 3.0 Negotiation & Dialogue: Head, Heart & Hand ad hoc |
| Low  | 1.0 Central Planning: Visible Hand       | 2.0 Markets & Competition: Invisible Hand             |

\*ABC: Awareness-Based Collective Action

Source: from Leading from the Emerging Future book. Scharmer and Kaufer

**2.3.6 Inputs in Preference Functions**

As mentioned above, individual's preferences also include social preferences. Social preferences comprise the structure that creates behavior that cares about the well-being of others and values fairness and other norms of decent behavior (Bowles 2011). Empirical research indicates that humans are selfishly-altruistic by virtue of their evolutionary process (genetic and cultural) and that they care not just about outcomes but also about the means to the outcomes (De Quervain 2004; Gintis 2005; Gneezy



2005; Gintis 2009). Hence, the indifference curve of a rational self-interested actor also includes arguments concerning the well-being of others. Research suggests that the most reasonable explanation for the predominance of socially beneficial norms is weak group selection: societies that promote social norms have higher survival and reproduction rates than societies that do not (Bowles 2011). Hence, culture, or in the firm context, firm's goals, values, culture, and the means to achieve them are institutions that can transform employers and employees self-regarding preferences into other-regarding preferences and enhance individuals and firms' well-being and their sustained competitive advantage.

## **2.4 Entrepreneurship**

Research on the origin of entrepreneurship and what makes entrepreneurs successful has grown substantially during the last two decades (Carland 2002; Freytag and Thurik 2010; Dimov 2011). Initially the study focused on identifying the shared personality characteristics among entrepreneurs that make them willing to start new businesses or activities (Casson 1982; Brockhaus and Horwitz 1986; Blanchflower and Oswald 1990). However, researchers noticed that these variables were not enough to explain the various successful entrepreneurial practices and their dynamics since they just focused on studying specific traits and events and not on the underlying processes (Mitchell 2002; Welter 2011; Wiklund 2011). As a result, scholars and practitioners are now focusing more on the internal cognitive processes involved in learning when entrepreneurs interact with the environment, with other people, with the culture that they are part of, and with the economic system and institutions (Zahra 2006; Holcomb 2009; Grégoire 2011).

The dynamic entrepreneurial system can be portrayed as feedback loops between the cognitive process and its surroundings (Wilber 2001; Augier 2008; Teece 2009). As several researchers have found, some of the key aspects that affect the evolution of one's cognition relate to one's ability to

sense, ability to be present, ability to reflect, and ability to understand systems (Senge 1993; Teece 1994; Scharmer 2005; Scharmer and Kaeufer 2013). As entrepreneurs develop these abilities their values and preferences evolve together with their relationships with employees, with customers, and with the community and environment. As a result of this complex dynamic system, entrepreneurs redirect their strategies to achieve their evolving goals. As a result, proposition one posits that:

P. 1: There is a co-evolutionary process among entrepreneurs' cognition and their firm's strategies at several levels.

Research has found that a distinguishing ability of entrepreneurs is their ability to recognize opportunities (Choi and Shepherd 2004; Dimov 2011). As Palich and Bagby noted, since entrepreneurs recognize more opportunities than others in a given scenario, they face a lower level of risk and they start more projects and businesses than other people (1995). However, as early entrepreneurship research noticed, not everybody who starts a business sustains entrepreneurship processes throughout his or her life (Carland 1984). Literature on people's ability to be creative and to materialize their ideas indicates that there are three main obstacles that prevent people from developing and/or sustaining entrepreneurship. The three main barriers are: (a) the voice of doubt and judgment – blocking the open mind; (b) the voice of greed – blocking the open heart; and (c) the voice of fear – blocking the open will (Scharmer and Kaeufer 2013). Proposition two posits that:

P. 2: Business founders that do not pursue entrepreneurship processes after founding a firm lack the ability to recognize more opportunities than average people. Their mind, heart and/or will are not functioning at their potential.

Argyris and Schön (1997) distinguished two main types of learning processes based on Gregory Bateson's concepts of first and second order learning. Single-loop learning occurs when there is no questioning about what is being learnt, about the methods used for learning and the driver for learning.

Hence, a person just mainly memorizes some information and perceives, reasons and acts in ways similar to those he or she did before learning. In single-loop learning there is no feedback process in place that to refine perception and understanding. In contrast, double-loop learning occurs when a person questions the information presented, the methods used to gather the information and the drivers for learning. As a result, there is a double loop of information circulation between the person and the environment that keeps refining the person's perception, understanding and consequent actions including their means of learning (Argyris and Schön 1999).

Scharmer and Kaufer (2013), Senge, Jaworski and Flowers (2005), Teece (2007), Porter (2011) and Baumeister (2008) among other scholars indicate that one of the major mechanisms that pushes people to become deep double-loop learners in certain areas or topics of their life are crises. Crises take place when the threshold that sustains the current situation is crossed. When people face moments of despair, deep frustration, depression, severe illnesses and other similar stresses, the need to do things differently becomes a priority and the means to change the current situation are gradually identified (Smith and Berg 1987; Baumeister 1998; Lutz 2003). However, there are other means of achieving deep double-loop learning without having to wait for life to present major unbalancing situations. Otto Scharmer (2007) in the book *Theory U, Leading from the Future as It Emerges*, exposes what he calls Theory U. Theory U presents a process through which somebody can develop the abilities to become a double-loop learner in a profound way, and hence become what is called a "learner from the emerging future." However, Scharmer indicates that mastering the art of double-loop learning and learning from the emerging future inevitably changes people's perception and understanding in ways that for some can represent deep crises. Regardless of the means of learning, research indicates that when double-loop learning or learning from the emerging future take place, people become more aware and

understand themselves and their surroundings better, thus increasing their alignment with their life purpose (Karoly 1993; Vohs and Baumeister 2004; Chudek and Henrich 2011).

A similar learning distinction can be made inside a company. Single-loop learning at the company level occurs when managers and employees approach their tasks without considering the underlying values, mission and goals of company; that is to say, without recognizing the discrepancy between the actual level of achievement of the company's values and the desired level. This learning approach is disconnected from the values and inspiration that brought the company into existence, and it limits the companies realization of its potential. There are many examples of the effects of single-loop learning at the company level, two well-known examples are the experience of Apple when Steve Jobs was not involved (Deutschman 2001), and the experience of the Coffee Republic when Sahar Hashemi was not in charge of its direction (2013). In some cases, companies are able to bring back the business founders or restore its values and inspiration in some other way so that an alignment in all the business unfolding is in place and double-loop learning can occur in the whole company. The third proposition states the following:

P. 3: The most successful companies achieve and sustain double loop learning and their operations are aligned with the company values.

In order to further understand what makes entrepreneurial processes successful there is the need to determine the fundamental pillars that allow this process to emerge and be sustained (Amit and Zott 2001; George and Bock 2011). Entrepreneurship research has noticed that on average just a small percentage of entrepreneurs develop the vision, plan their innovation, and execute all the stages necessary for its full materialization (Stevenson and Jarillo 1990; Zahra 2006). Normally, entrepreneurs focus on the core innovation of the new output and partner with other people in order to develop the other ingredients necessary for the success of the new product or service (Meyer 2002). When

entrepreneurs are not able to fully transform the inspiration of their creation into a business vision the success rate diminishes. Researchers have complemented this argument by identifying the frequently low managerial skills that entrepreneurs possess and how this constrains the materialization and expansion of their ideas (Hitt 2002). The fourth proposition posits:

P. 4: Entrepreneurs with unclear business vision and mission and/or with poor communication skills are less successful than entrepreneurs with clear business foundations and/or communication skills.

Recent research indicates that the key for sustained competitive advantage is to expand businesses mission beyond the creation of profit for shareholders to the creation of what is being called “shared value” (Wilber 2001; Porter 2011; Scharmer and Kaeufer 2013). Shared value is produced when the company’s motivation is to provide something beneficial for people, animals, beings or the ecosystems, shifting the current standards towards the notion of serving the systems that the company is part of. The idea is to have the intention and create value not just for the company’s stakeholders and direct consumers but also for the other systems that the company is part of (Senge 2008; Kramer 2011). As Porter argued (2011), it is the shift from seeing that if businesses increase profit it is good for society to seeing that what is good for society is good for businesses. One of the underlying principles is that by giving more at all levels, the company receives more at all levels as well. Employees feel more fulfilled, and some consumers and investors feel better directing their money to companies that take care of the bigger system and genuinely care about their customers (Friedman and Miles 2001; Sen and Bhattacharya 2001; Vargo and Lusch 2008). Proposition fifth states the following:

P. 5: Entrepreneurs with a business vision that has a social dimension for the benefit of others as well as the benefit of the company have higher chances for prosperity.

Peter Senge in the *Fifth Discipline* (1991) presents what it is called the “personal mastery discipline.” The personal mastery discipline is the discipline of aspiration that enhances the creative process that moves people from their current reality to their personal vision. Senge et al. indicate that people who develop the capability to sustain a creative tension between their current reality and their vision are able to achieve their vision in a more serene way. Hence, personal mastery can be associated with characteristics such as self-knowledge, self-control, self-confidence and innovative. Psychology and neuroscience research suggests that people that develop clearer pictures of what they envision are more able to identify the means towards them (Johnson-Laird 1983; Denzau 1994; Hill and Levenhagen 1995). Weiner notes that aspiration is a fundamental driver for recognizing opportunities to achieve one’s vision (1972). Proposition six states the following:

P. 6: Higher levels of personal mastery enhance entrepreneurs’ ability to identify opportunities.

As mentioned above, enhancing one’s personal mastery facilitates an inner dialogue that enhances one’s ability to choose and move in accordance with what could be called “life’s groove” or “life’s flow” as it is expressed in jam sessions when jazz musicians get into perfect synchronicity and dialogue among themselves. This same state is expressed in spiritual atmospheres when people decide to relinquish their sense of control and start going with what feels right at each moment (Scharmer 2007; McKenna 2009). Psychology research also indicates that people who develop the capacity to hold inner dialogue are less reactive and experience higher mental clarity that allows them to identify what is best for them and how to properly move in that direction (Fonagy and Target 1997; Siegel 2007).

Proposition seven posits the following:

P. 7: Higher levels of personal mastery enhance entrepreneurs’ success by allowing them to be aligned with their life purpose.

Globalization and the information revolution are leading people to understand the world more as a web of people and cities than as isolated independent nodes that have nothing to do with each other. However, as some researchers point out, globalization of markets and increased information access have transformed the world into a complex dynamic system that our minds are not yet able to fully comprehend without the aid of technology (Sterman 2000; Maani and Maharaj 2004). Hence, the structure and behavior of complex dynamic systems<sup>5</sup> are not yet entirely comprehensible by our brain and computers are needed to elucidate their understanding (Sweeney and Sterman 2000; Sterman 2010). Nonetheless, companies and organizations are required to deal with the interconnectedness of the whole supply chain and the environment in which they operate. New partnerships are being built that enhance their sustainable competitive advantage (Senge 2008; Porter 2011; Scharmer and Kaeufer 2013). Two examples of these new partnerships and ways of producing and delivering are Whole Foods Market and Nestlé. Whole Foods Market envisions people and societal well-being as their primary goal (Porter and Kramer 2006), and Nestlé collaborates with NGOs in South America in order to ensure the well-being of the communities and environment where they operate (Brugmann and Prahalad 2007).

Proposition eight posits:

P. 8: Higher levels of systems thinking facilitate entrepreneurs' success by enhancing their understanding of the correspondence among the systems of which their business are part and by facilitating beneficial new relationships.

## **2.5 Leadership**

Leadership has been identified as a key aspect for achieving successful business management even though most of the traditional management education focuses on managing tasks instead of people

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<sup>5</sup> Dynamic complexity as defined by Peter Senge et al. occurs in situations where cause and effect are subtle, and where the effects over time of interventions are not obvious. Conventional forecasting, planning, and analysis methods are not equipped to deal with dynamic complexity.

(Drucker 1995; Deming 2000). Hence, there is still a disconnection between management theory, human resources strategy theory and leadership theory (Anderson 1994; Heifetz 1994; Senge 1999). Leadership research has developed several classifications of leaders based on the qualities that the leader possesses and the leadership tasks for which the person is responsible. The main leadership theories developed in a chronologic order are: (a) “great man” leadership theory; (b) trait leadership theory, (c) contingency and situational leadership theory; (d) transactional leadership theory; (e) transformational leadership theory; (f) horizontal or collaborative leadership theory; and (g) ethical leadership theory (Judge and Piccolo 2004; Brown and Treviño 2006; Bass and Bass 2009; Northouse 2012). Van Wart (2013) presents a succinct literature review of the abovementioned leadership theories.

Most of the leadership research has been oriented towards elucidating the personality traits and qualities that distinguish leaders from followers – “great man” and trait leadership (Lord 1986; Judge 2002). More recently this research was combined with the study of the means by which leaders can achieve the company’s desired results via organizing and supervising group performance – transactional leadership. As in management theory, leadership theorists note that given the constant change experienced by organizations, the human and relational components between leaders and followers were as important as leadership role related to specific tasks and organization. Then leadership studies focused on comparing the effectiveness and complementarities between transactional and transformational leadership (Lowe 1996). Given the rise of the information era and the flattening of organizational structures, leadership studies paid attention to the growing needs for horizontal or collaborative leadership (Northouse 2012). Finally, the change in people’s values and preferences in response to changes in the economic, social and environmental systems has brought attention to what is called ethical leadership, requiring high levels of integrity and emotional intelligence (Goleman and MacKee 2004; Barbuto and Burbach 2006).



Leading with values corresponds to the theory of ethical leadership where leaders are an embodiment of the company's values and mission and are in charge of transmitting these core pillars to all employees, business partners and consumers. When successfully leading with values means that all of the company's divisions and locations share the same identity and reason for existence (Ciulla 1995). Ethical leadership theory requires that effective ethical leaders have self-control, are authentic and emphasize the positive and underlying motives that colleagues share with each other and the company (Brown and Treviño 2006). Another important characteristic of effective ethical leaders is that they emphasize personal development by enhancing people self-awareness and commitment to self-improvement (Yukl and Heaton 2002; Avolio and Gardner 2005; Gardner 2005) towards the greatest good (Ciulla 2004). Ethical leadership emphasizes the long-term needs of communities and the environment in which they perform (Kohlberg 1981; Bennis 1996).

Despite the logical and emotional appeal of the above propositions, researchers have noted that applying them is often more difficult than is apparent (Heifetz 1994; Lewis and Gilman 2005; Ford and Harding 2011). One of the main reasons why the means of properly implementing ethical leadership in organizations is not yet as developed as other types of leadership. In particular, many organizations still face an inner value conflicts between competition and cooperation, and between personal values and social values. Together these conflicts generate organizational dissonance between efficiency and due process which relegates ethical leadership to the bottom of the priority list. The other types of leadership do not have the qualities necessary for addressing the inner conflicts experienced by many organizations. For instance, transformational leadership is necessary to reduce a companies' inner conflict but it is not sufficient. Ethical leadership must be developed and applied in order to guide the steps of transformational leadership. Given the above discussion, proposition nine posits:

P. 9: Given current circumstances, companies that invest in ethical leadership gain a valuable asset that enhances their sustained competitive advantage.

Research on leadership is following a process similar to that of entrepreneurship research in the sense that researchers and practitioners are becoming more aware of the need to expand their understanding by developing theories and models that provide a dynamic and systemic view of the processes underlying leadership (Van Wart 2013). As a result scholars are pointing towards the expansion of the cognitive science that identifies the main traits that distinguish the cognitive learning processes that leaders experience by interacting with their environment, and how these affect their leadership (Schneider and Somers 2006).

Recently, the volume of literature on transformational leadership has increased (Leithwood 1999; Bass and Riggio 2005). Transformational leadership theory posits that transformational leaders are those that manage organizational change at the levels of the organizational vision, structure, procedure, technology and production thereby acknowledging the visions of all the members and enhancing the achievement of each person highest potential. Transformational leadership theory has not yet addressed its effect on the achievement of firms' social goals. Similarly, effective transformational leaders are those that are able to live and also transmit the business' social values and mission as the underlying umbrella that guides the direction of any change. Hence, transformational leadership requires people with developed self-awareness and systemic awareness, and able to guide people's creative tension processes towards the company's goals. Proposition ten posits:

P. 10: Given the current circumstances, effective transformational leadership requires high levels of personal mastery, awareness of mental models and systemic thinking so that the common denominators and harmonizing change factors effective for all groups can be identified and effectively implemented.

## **CHAPTER 3 : MODELS AND DATA**

### **3.1 Introduction**

This chapter presents the methodology and data used in the theoretical research as well as empirical research. The theoretical contributions come from the development of a conceptual model of entrepreneurial and leadership behavior. The conceptual model is the basis for the simulation model constructed and used for the empirical research. The empirical research is based on in-depth face-to-face interviews to nine wineries, seven of which are located in Missouri, one in Virginia and one in Maine. The empirical research aims to shed light on the most effective means of addressing the main challenges that the nine wineries are facing as well as to suggest answers to the five main issues raised in this research. The chapter presents the rationale behind using causal loop diagrams and a system dynamics approach in the study.

The present chapter also presents the data used in the empirical research as well as the methodologies used for gathering the data via face-to-face interviews and online surveys. A section of this chapter thoroughly describes the background and circumstances of each of the nine wineries that participated in this study in order to support the rationale used in the causal loop diagrams and dynamic models.

### **3.2 Methodology**

#### **3.2.1 Systems Thinking and System Dynamics as a Methodology**

The present research aims to increase our understanding of the dynamics behind entrepreneurship and leadership processes and to elucidate the factors that make such processes successful. As a result, the methodology used in the present research must be able to capture the dynamics of emergence in a

complex system, as changes reflecting the passage of time are often counterintuitive (Hanisch 2000; Hulin and Ilgen 2000; Latane 2000). Hence, the present research requires the implementation of a methodology that enhances the understanding of the structures that favor successful entrepreneurship and leadership processes while allowing its simulation so that the resulting behavior over time can be studied. This type of methodology then would be suitable for identifying the leverage points of existing entrepreneurship and leadership structures that are not performing at their potential.

There are several methodologies typically used to study complex systems but systems thinking and more particularly system dynamics are most suitable for the present study. Systems thinking is the foundational theory upon which system dynamics methodology is based (Forrester 1961). The transition from using systems thinking as a method of study to applying system dynamics methodology allows one to move from generalizations about dynamic systems to tools and processes (such as simulations) for understanding these systems. The main features of systems thinking and system dynamics methodologies that make them more suitable for this study than methodologies such as dynamical systems modeling and a system of simultaneous equations, is their ability to articulate the level of complexity required in the present study (Sterman 2000). On the other hand, agent based models require an exhaustive level of disaggregation that is not needed for an effective study of the questions posited in this study. Furthermore, system dynamics is particularly appropriate for the current research it emphasizes emergent behavior, the interaction of variables from various system levels and the study of the evolution of the system over time (Schneider and Somers 2006).

The system dynamics simulation model developed here reflects the researcher's interpretation of the traditional theories of entrepreneurship and leadership which are then quantified. The simulation model developed here reflects the entrepreneurship and leadership characteristics of wineries and their contexts that are relevant to the research questions and which are suggested by theory (Sterman 2000).

Consequently, system dynamics simulation models allow us to test theory and refine our theories, thus leading to the creation of new theory (Krackhardt 2000). As a result, under system dynamics methodology, simulation allows us to bridge abstract theory and empirical analysis (Arrow 2000). Several entrepreneurship and leadership studies support the use of systems thinking and system dynamics as appropriate methodologies for increasing our understanding of these dynamic processes (Schneider and Somers 2006). An example of the development of theory from simulation models is the theory regarding charismatic leadership. Subsequent empirical testing supported the theoretical finding that charismatic leadership is largely unpredictable in its incidence and outcomes (Jacobsen and House 2001).

### **3.2.2 Wineries Causal Loop Diagrams, Systemic Features**

Systems thinking facilitate the description of the basic systemic features research cases by taking researchers through a series of steps that produce causal loop diagrams that summarize the direction and pace of the key relationships involved in the research subject. Causal loop diagrams, then, are just the initial tools used to understand the systemic features of the topic being studied. Besides knowledge about the topic being studied, a key requisite is a background in systems thinking.

The main steps followed in order to develop meaningful causal loop diagrams are: (a) to define the problem or challenge, (b) to name the main variables that intervene in the problem, (c) to draw the reference mode of the main variables over time, and (d) to develop the dynamic hypotheses that explain the shape of the reference modes considered.

The main components of causal loop diagrams are: (a) the variables studied; (b) the relationships between the variables studied (these can be either positive or self-reinforcing loops that generate growth and amplify deviations, or negative, self-balancing loops that bring stability to the

system); and (c) delays, that indicate the elapsed time between the causal variable and the effect on the other.

### **3.2.3 Winery Stock and Flow Model, Systemic Features and System Behavior**

In order to elucidate the behavior generated by the systemic features identified in the causal loop diagrams the stocks and flows variables must be distinguished. Stock variables are those that can accumulate units over time. Flow variables increase or reduce the level of units in stock variables over time. The rate of inflow or outflow is modeled with feedbacks that go from stock variables to flow variables and converters that directly affect the rate of flow. Finally, the system is modeled with variables that introduce delays in the process.

### **3.3 Conceptual and Simulation Models**

Based on the literature review and complementary research we present a conceptual model and a simulation model of the co-evolutionary process of entrepreneurship and leadership and its impact on wineries' satisfaction of customer preferences. The conceptual model aims to further articulate the dynamics behind the entrepreneurship and leadership processes based on behavioral foundations described in the previous section. One of the main contributions is to identify the key intangible variables that play an important role in allowing wineries to align their goals with customer preferences, and to explain the relationships between these intangibles and the firm's entrepreneurship and leadership effectiveness. Entrepreneurship and leadership effectiveness is reflected in the productivity level and output quality that allows wineries to fully satisfy customer preferences.

Particularly, the empirical research conducted indicates that small wineries either have not considered diversifying their goals to add social or environmental goals to their efficiency goal, or they struggle to move toward a triple bottom line goal. As a result, small wineries experience a comparative lower level of customers' satisfaction since average winery customer values social and environmental

goals. This situation results in a bigger gap between the current winery goals and the equilibrium goals that would allow the small winery to satisfy its customer preferences. The simulation model aims to evaluate the effect of the initial level of small wineries' key intangible variables on the alignment between winery goals (economic, social and environmental) and customer preferences. Small wineries face higher constraints than medium and large wineries in identifying how key intangible variables affect entrepreneurship and leadership effectiveness and their ability to satisfy customers. As a result, the present simulations would help wineries identify the intangible resources that affect the most their effectiveness and ability to satisfy customers. Identifying these variables and relationships with wineries' goals alignment is the first step in order to be able to estimate their monetary counterpart and hence increase the success rate of their strategies.

The simulation model is build using the information from one of the small wineries studied and studies the reason why this small winery struggles expanding its goals towards social and environmental goals so that it can fully satisfy its customer preferences. The underlying structure of the present model can be used to study the reason why this phenomenon is being faced by other small wineries. The main variables that affect the current portfolio of the small winery goals are: (a) low profits, (b) an unclear business vision, (c) high risk aversion, (d) low knowledge, (e) low well-being, and (f) low ability to recognize opportunities, on the winery's ability to satisfy customer preferences. Hence, the present simulation model needs to evaluate the effect of the initial level of these key tangible and intangible variables on the alignment between winery goals and customer preferences of this small winery.

The reference modes of this small winery are presented below. The first one indicates the low level of winery related knowledge that the entrepreneur and employees possess. The small winery has been reducing the gap between its goals (economic, social and environmental) and the equilibrium goals

level that would fully satisfy customers. However, the pace has been slow and the average goals gap is still big.

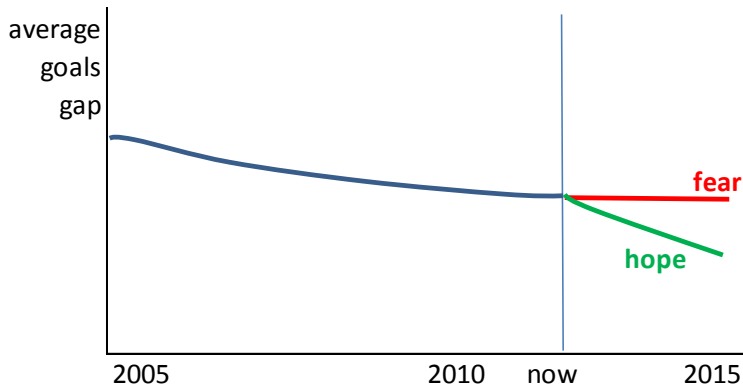


Figure 3.3.1: Small Winery Level of Average Goals Gap Reference Mode

The level of winery related knowledge has increased slowly since the winery started and it is currently increasing at an even slower rate. The winery is at the declining/re-inventing tipping point and it is critical that the level of winery related knowledge increases at a faster pace.

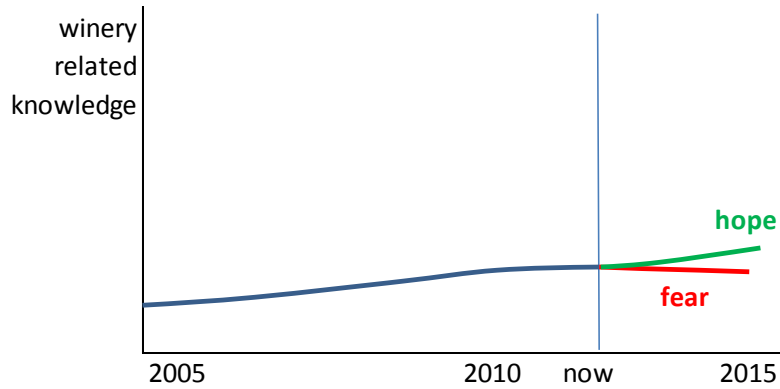


Figure 3.3.2: Small Winery Level of Winery Related Knowledge Reference Mode



The small winery entrepreneur experiences a high level of risk aversion and has experienced so since the winery started. This condition is limiting the implementation of more effective strategies.

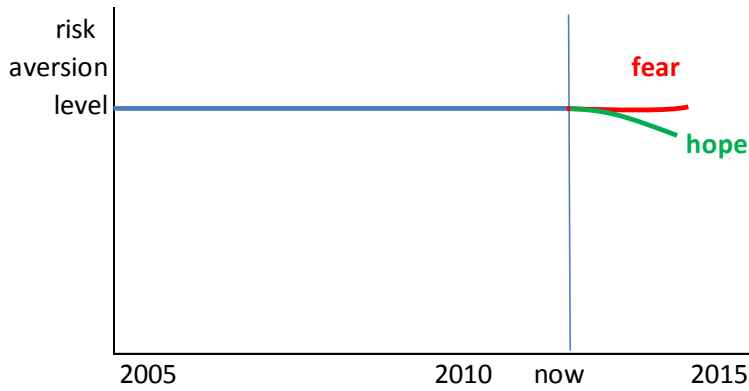


Figure 3.3.3: Small Winery Level of Risk Aversion Reference Mode

The small winery entrepreneur experiences a low level of opportunity recognition due to his low level of winery related knowledge, background and interests. This low level of opportunity recognition limits the winery ability to implement more effective strategies.

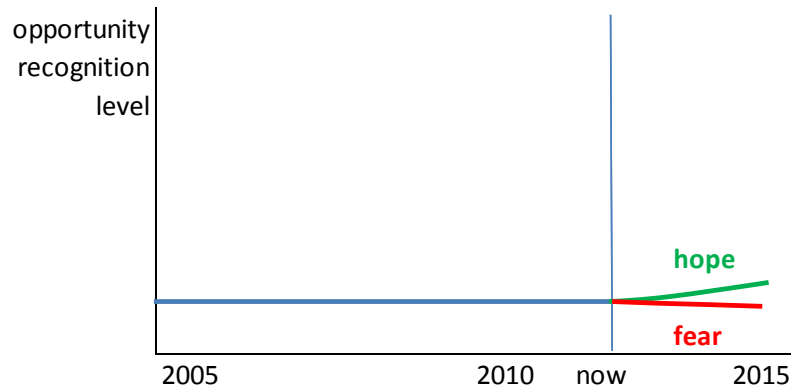


Figure 3.3.4: Small Winery Level of Opportunity Recognition Reference Mode

The small winery entrepreneur has been experiencing a decrease in his overall well-being. This situation is limiting the entrepreneur's ability to identify and implement more effective strategies.

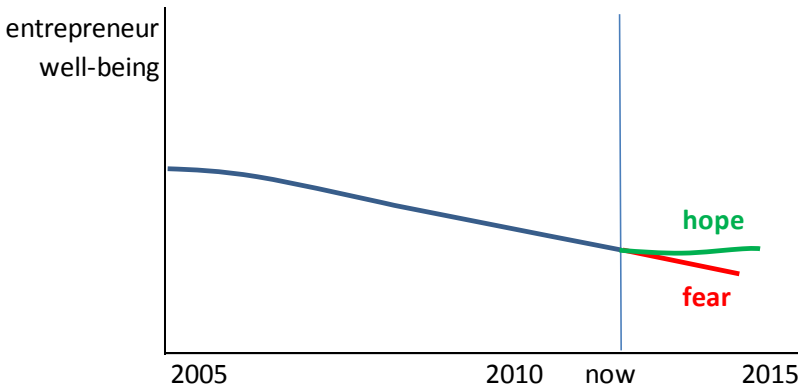


Figure 3.3.5: Small Winery Level of Entrepreneur Well-Being Reference Mode

Based on this small winery background and the trajectories of the main reference modes, the dynamic hypotheses posited are:

H1: The low level of goals diversification over time is partially caused by the low or negative level of profits.

H2: The average level of goals gap has been reducing slowly and at a low degree due to the entrepreneur's low level of winery related knowledge.

H3: The average level of goals gap has been reducing slowly and at a low degree due to the entrepreneur's decreasing well-being level.

H4: The average level of goals gap has been reducing slowly and at a low degree due to the entrepreneur's high level of risk aversion.

H5: The average level of goals gap has been reducing slowly and at a low degree due to the entrepreneur's low level of opportunity recognition.

The conceptual model and simulation model are presented in seven parts. The first part describes the process that some wineries undergo when they align their goals with customer preferences. As noted in the first and second chapters, during the last recession entrepreneurial processes have emerged that redirect wineries attention to not only economic or efficiency goals but

also to social and environmental goals. What allows wineries to expand their goals to the triple bottom line? What are the important factors that need to be in place in order for that process to be successful? That is what we articulate in figures 3.3.6 and 3.3.7 and below, and what we present in the results and conclusion section.

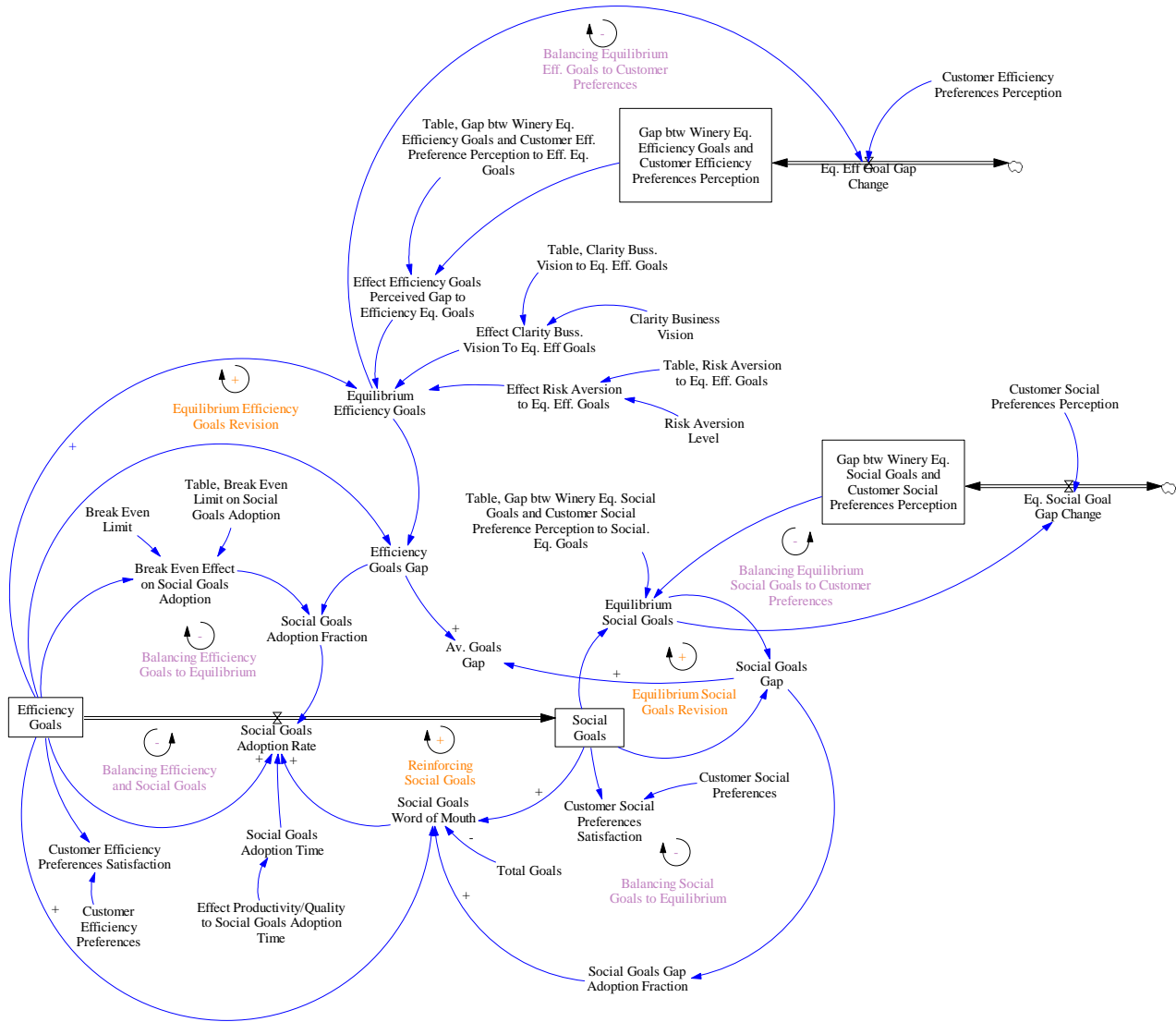


Figure 3.3.6: Efficiency and Social Goals Adjustment

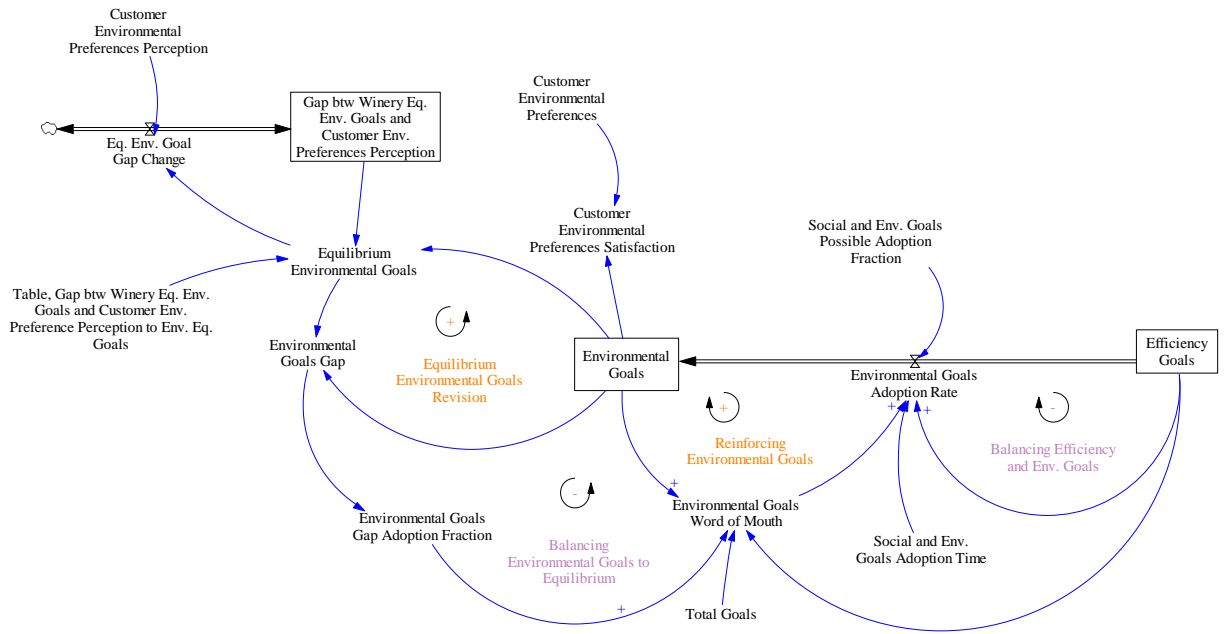


Figure 3.3.7: Environmental Goals Adjustment

The main wineries goals belong to the “economic goals” category because these goals allow wineries to accumulate profits and reinvest them in further improving the firm. One of the main aspects that allow wineries to accumulate profits is their level of efficiency. Higher efficiency reduces costs and higher margins can be gained or new customers can be gained by reducing prices and still making profit. The process by which winery managers identify the equilibrium goals and allows the firm to move towards them is labeled “hill-climbing” (Sterman 2000). The rationale behind decisions based on hill-climbing processes is that the agent finds the optimum point by sensing whether there is too much or too little of their specific equilibrium components and then adjusts the resources in the right direction. It is much like reassessing one’s climbing path every few steps given the new environment in order to make sure that you are going in the right direction to get to the top of the hill as quickly as possible. The generic structure behind the hill-climbing decision process nodes is:

$$\text{Stock} = \int \text{Change in State of System} dt \quad (1)$$

$$\text{Change in State of System} = (S^* - S)/SAT \quad (2)$$

$$S^* = S * \text{Effect of } X_1 \text{ on } S^* * \text{Effect of } X_2 \text{ on } S^* * \dots * \text{Effect of } X_n \text{ on } S^* \quad (3)$$

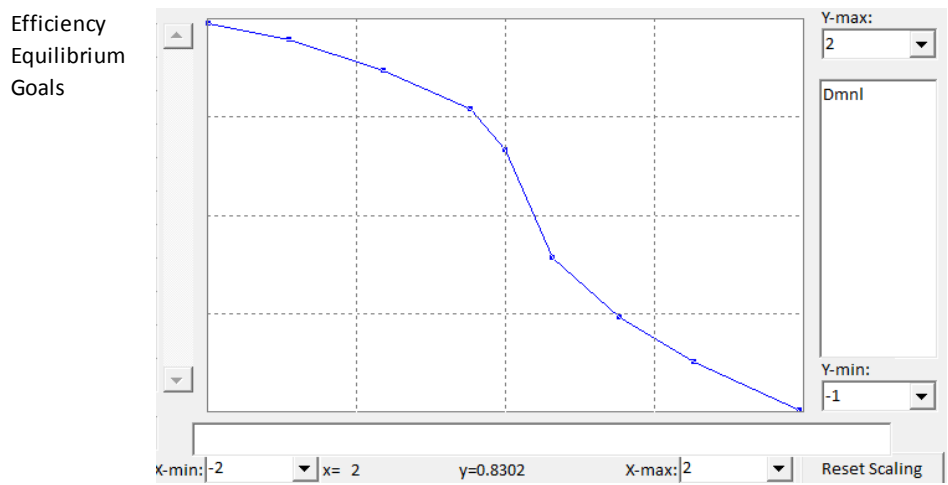
$$\text{Effect of } X_i \text{ on } S^* = f(X_i/X_i^*) \quad (4)$$

SAT is the average stock adjustment time. The effects of external pressure are formulated as multiplicative or as additive and are normalized to their reference values via a lookup function (elucidated in the interviews and presented below). The rationale behind using the multiplicative formulation is that there are external factors that play a key role in determining the behavior of other external factors under extreme conditions (for example, if the winery does not break-even it cannot expand its goals to include social goals). Hence, the adjustment process of winery equilibrium efficiency goals is modeled using a multiplicative format. These effects are modeled in an additive format when there is just one effect affecting the desired level or when the effects do not reach zero levels. This is the case of the adjustment process of the equilibrium social goals and environmental goals, since they are only affected by the gap between customers' preferences perception and the winery equilibrium social and environmental goals.

In this adjustment process from equilibrium level to actual level we can see that two loops guide the process. The first loop is negative and closes any gap between the equilibrium state of the system  $S^*$  and the actual state  $S$ . The second loop comes from the goal itself, and connects with the equilibrium goal that effects again the state of the system, creating a positive goal revision loop (Sterman 2000).

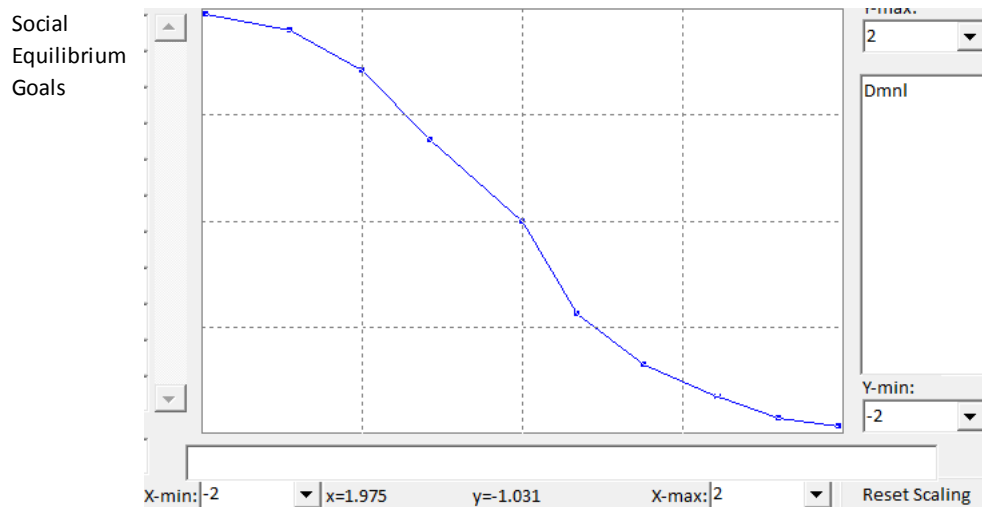
Changes in the equilibrium goals of wineries are driven by the perception of winery managers about customer preferences and the discrepancy between these perceived preferences and their equilibrium goals. The larger the discrepancy, the faster the winery adjusts its equilibrium goals (see figure 3.3.6, 3.3.8 and 3.3.9 for the specific structure). Literature has also identified two other factors that affect the definition of equilibrium efficiency goals: (a) the level of business vision clarity (Barrett 1994; Baum, Locke et al. 1998), and (b) the level of the managers' risk aversion (Amihud and Lev 1981;

March and Shapira 1987). The lower the clarity of the managers' business vision the more difficult it is to define equilibrium efficiency goals that satisfy customers (Roepke, Agarwal et al. 2000). The level of business vision clarity, based on the data collected for this study, ranges from zero to one. A Likert scale of seven points is used to quantify most of the intangible data. This seven point scale is then converted to a zero to one scale or to the scale needed in the model. In a similar way, the more risk averse managers are, the lower the general equilibrium efficiency goals are established since they dare to invest less (Gollier and Brunak 2001). See figures 3.3.11 and 3.3.12 for their specific structure. The specific equation that defines the equilibrium efficiency goal can be found in appendix four.



Gap between Equilibrium Efficiency Goals and Customer Preferences Perception

Figure 3.1.8: Gap between Equilibrium Efficiency Goals and Customer Preferences Perception to Efficiency Equilibrium Goals



Gap between Equilibrium Social Goals and Customer Preferences Perception

Figure 3.3.9: Gap between Equilibrium Social Goals and Customer Preferences Perception to Social Equilibrium Goals

Figure 3.3.9 and figure 3.3.10 indicate how the wineries interviewed respond to the gap that they perceive between customers social and environmental preferences and their social and environmental equilibrium goals. As the y-axis indicates, wineries respond more to the social gaps than to the environmental gaps between customer preferences and their equilibrium goals. Customers value the social and environmental dimensions of wineries, especially the social goals since these have the most direct impact on their communities. However, U.S. wine customers are not willing to pay much more for organic wine or eco-labeled wine (Dimitri and Greene 2000; Fotopoulos, Krystallis et al. 2003; Marshall 2005) and unless there are stakeholder pressures to implement environmental management programs, small and medium wineries do not tend to implement them (Cordano 2010). The empirical research conducted indicates that one of the main reasons why wineries expand their social goals is because they see a win-win situation with the community or group that they partner with. The winery helps raise funds for and awareness of certain social causes and more people get to visit the winery and/or to know the winery and their products. This partnership increases the word-of-mouth effect and the winery wins new customers. Conversely, when the winery expands its environmental goals normally

there is no such win-win outcome, and the word-of-mouth effect is smaller. This is mainly because the environmental goals mainly affect the winery and its property. Unless the winery's environmental goals reach the community boundaries, the word-of-mouth is not as effective and there are fewer incentives to expand the goals in that direction unless the winery manager is personally very committed to environmental concerns.

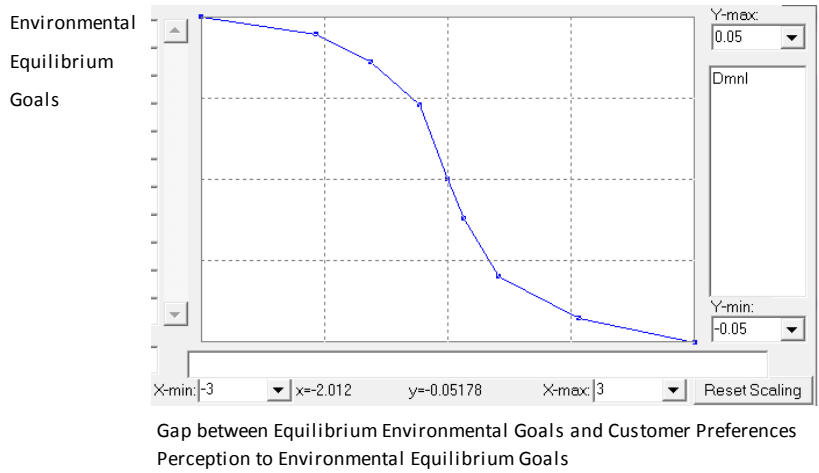


Figure 3.3.10: Gap between Equilibrium Environmental Goals and Customer Preferences Perception to Environmental Equilibrium Goals

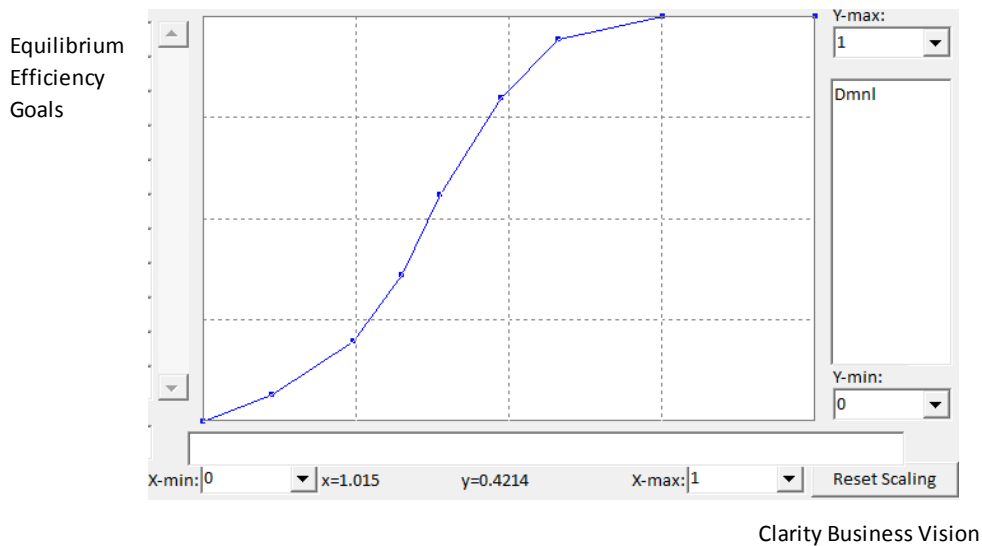


Figure 3.3.11: Clarity of Business Vision to Equilibrium Efficiency Goals



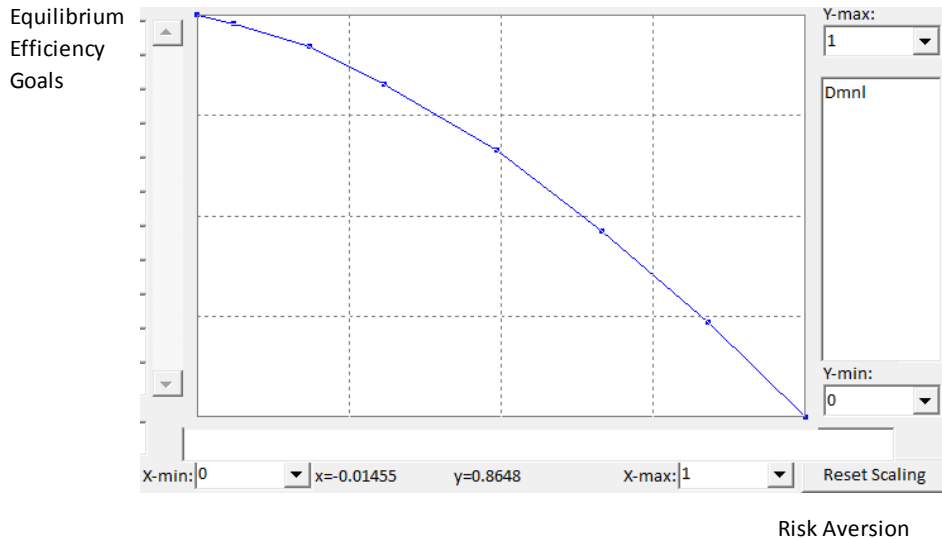
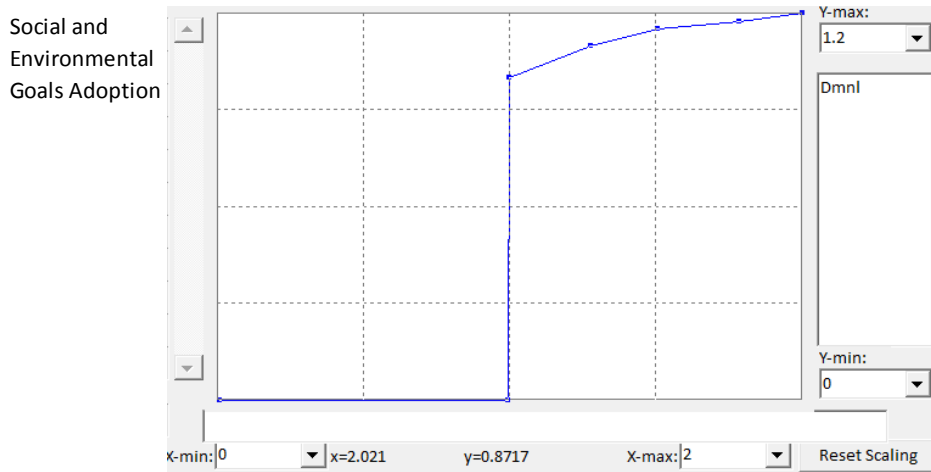


Figure 3.3.12: Risk Aversion to Equilibrium Efficiency Goals

The change in the level of equilibrium efficiency goals affects the actual level of efficiency goals via the hill-climbing process. The hill-climbing algorithm is based on two feedback loops: a positive goals revision with updated information loop, and a negative goals adjustment to the new information. However, for winery managers, their social goals adjustment process depends on the level of profits (how far from breaking even is the winery). If the winery does not break even then all the attention goes to achieve their efficiency goals. Once the winery is able to accumulate profits then it can allocate part of the profits to its social and environmental goals (Porter 2011). The simulation model focuses on the transition from efficiency goals to social goals, since the empirical research indicates that this is what winery managers' care about the most. Environmental goals are not an important target for now. Figure 3.3.13 illustrates the break even constraint that determines whether or not resources are allocated to align the winery social goals. Besides having the financial resources to satisfy social goals what motivates winery owners to expand towards the triple bottom line is the impact that other wineries and firms that have already taken this step report (Savitz 2006; Porter 2011), and the word-of-mouth effect that they expect from these new goals. Hence, the word-of-mouth mechanism plays a role in expanding wineries' goals towards social goals. This mechanism can be seen in the above figure 3.3.6.



Break Even Limit

Figure 3.3.13: Break Even Limit to Social and Environmental Goals Adoption

Adjusting from current goals to its equilibrium goals takes time. The adjustment time depends on the average productivity and work quality in the winery.

The level of productivity and work quality in firms depends on several intangible factors. Based on the behavioral foundations presented in chapter two and complementary research we identify five variables that drive entrepreneurship and leadership effectiveness levels and the final productivity and work quality in a winery. The level of knowledge is one of the key intangible variables that drives productivity and work quality (Drucker 1999). Recent research suggests that personal knowledge, group generated knowledge and systemic knowledge are as important as winery related knowledge for enhancing entrepreneurship and leadership effectiveness and final productivity and work quality (Senge 1991; Scharmer and Kaeufer 2013). The knowledge acquisition and depletion process is presented in figure 3.3.14. People identify a level of knowledge that they would like to achieve based on the well-being gap that they are experiencing (Kahneman, Diener et al. 2003) and based on the winery needs that are not being satisfied (referred to as the gap between the winery's equilibrium goals and its actual, current goals) (Haas and Hansen 2007). The main idea is that people's equilibrium knowledge is defined based on personal intrinsic needs and situational or environmental needs. As a result, the larger the

well-being gap, the more knowledge one is driven to gather in order to address his or her situation (Myers 1993), see figure 3.3.15. Well-being is measured on a scale that ranges from zero to one based on the data collected during face-to-face interviews. In a similar manner, the larger the gap between the equilibrium and actual goals the more knowledge wineries are prompted to acquire (Locke and Latham 2002), see figure 3.3.16. Goals are defined on a scale from zero to one; hence, the average goals gap also ranges from zero to one.

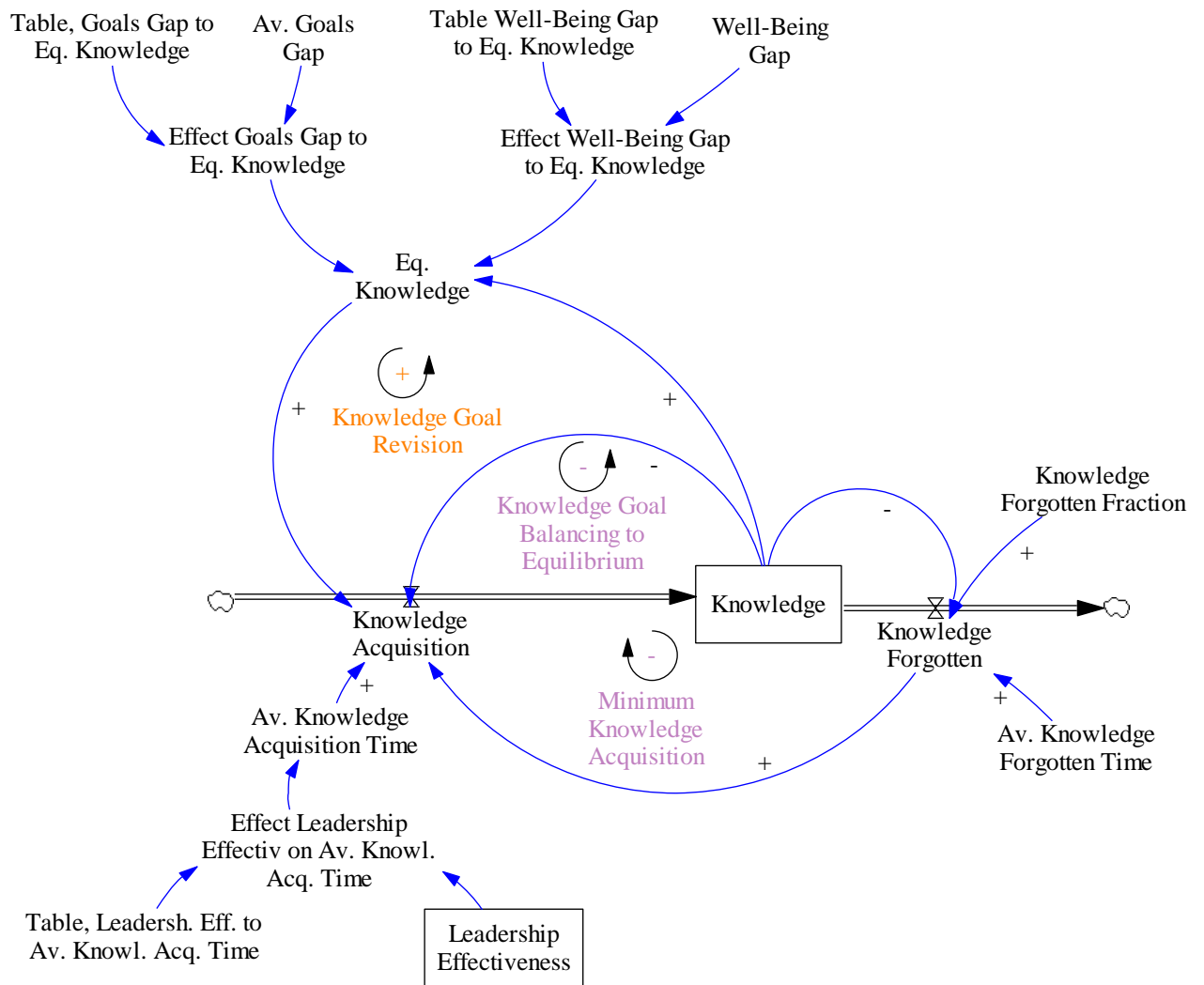


Figure 3.3.14: Knowledge Acquisition and Depletion Process

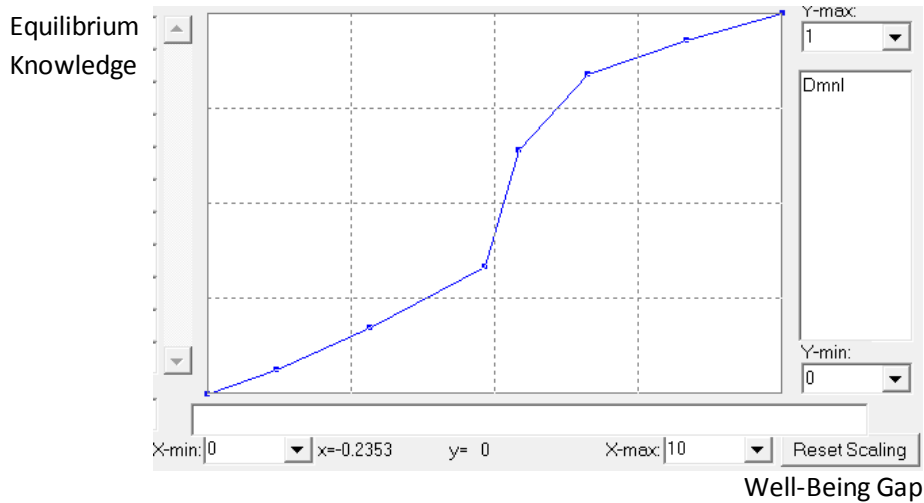


Figure 3.3.25: Well-Being Gap to Equilibrium Knowledge

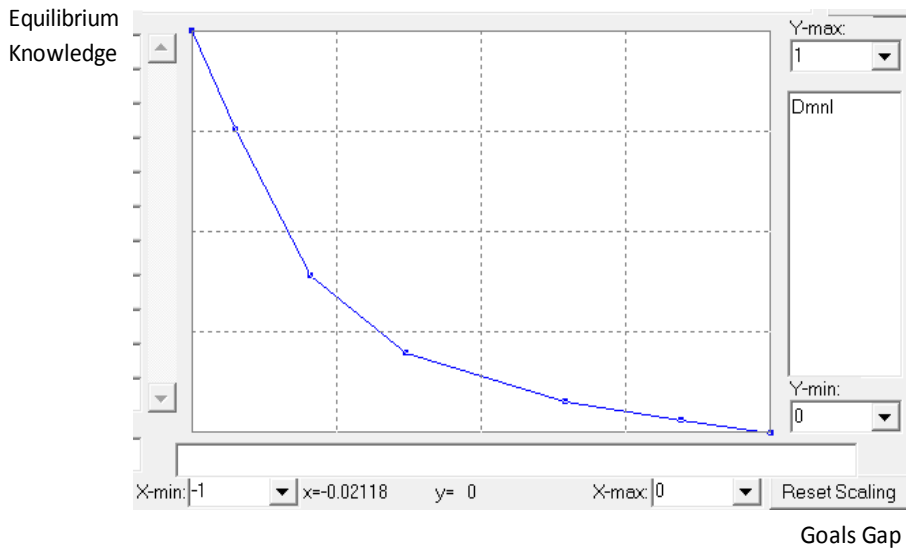


Figure 3.3.36: Goals Gap to Equilibrium Knowledge

The process of defining and moving towards equilibrium knowledge goals follows the hill-climbing algorithm described above. Many researchers have identified the hill-climbing behavior when studying processes related to knowledge acquisition (Anderson 1987; Fisher 1987). Hence, people experience a positive feedback loop and revise their equilibrium knowledge goals based on the new information that they receive, and at the same time start the balancing process to adjust their current situation to the equilibrium level. Adjusting the current situation to the equilibrium knowledge goal takes time. The model incorporates the effect of leadership effectiveness on knowledge acquisition. The

higher the level of leadership effectiveness the less the time it takes people to acquire knowledge (Lowe 1996; Senge 1999; Bass and Riggio 2005). Figure 3.3.17 illustrates the effect of leadership effectiveness on the average time to acquire knowledge. Time units are years, and leadership effectiveness is measured in a scale from zero to ten based on the face-to-face interview data. The process of knowledge forgotten is based on the current level of knowledge and the model assumes that a constant fraction of knowledge is forgotten every year.

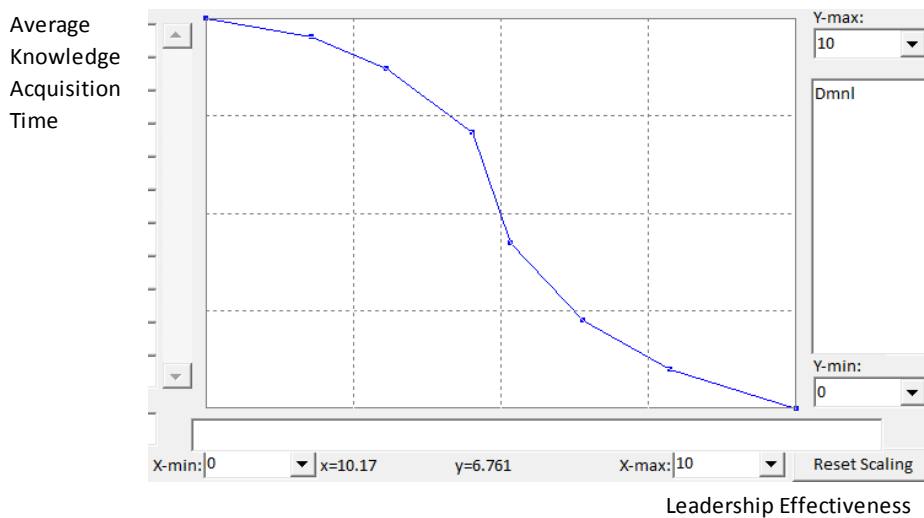


Figure 3.3.47: Leadership Effectiveness to Average Knowledge Acquisition Time

The level of knowledge has an impact on the level of awareness as well as on the ability to recognize opportunities. The more knowledge one has, the higher the equilibrium awareness level since one is more conscious of more topics (Duval and Wicklund 1972; Dourish and Bellotti 1992). Hence, the process of updating one's awareness level also follows a hill-climbing algorithm, where the equilibrium awareness level is updated based on the new information gathered and the actual awareness level moves towards the equilibrium level (Endsley 1995). The time that it takes to adjust from the actual awareness level to the equilibrium level depends on how people relate to uncertainty (Johanson and Vahlne 1977). The less comfortable someone is with uncertainty, the longer it takes to reach the equilibrium awareness level. Figure 3.3.19 illustrates that relationship. Knowledge positively contributes

to the ability to identify opportunities; the more knowledge one has the more able the person is to identify new opportunities (Brockhaus and Horwitz 1986; Holcomb 2009). Figure 3.3.20 illustrates this relationship. Risk aversion has also been identified as a key determinant for people’s ability to recognize opportunities (Stewart and Roth 2001). The more risk averse somebody is, the more difficult it is for that person to identify opportunities, everything else equal (Krueger and Dickson 1994). The last factor considered that affects the level of opportunity recognition is one’s awareness level (Ardichvili, Cardozo et al. 2003). The more aware the person is about his or her surroundings, relationships and so on, the more able he or she is to recognize new opportunities (Baron and Ensley 2006). Figure 3.3.20 indicates this relationship.

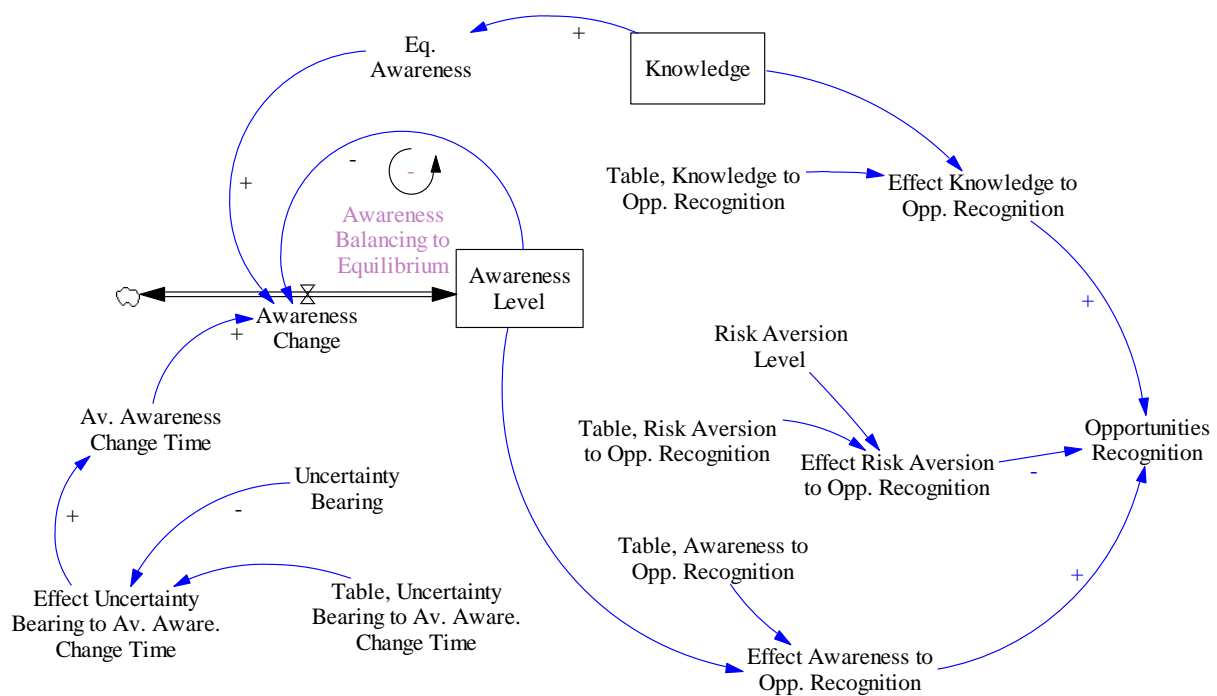


Figure 3.3.58: Awareness and Opportunity Recognition Processes

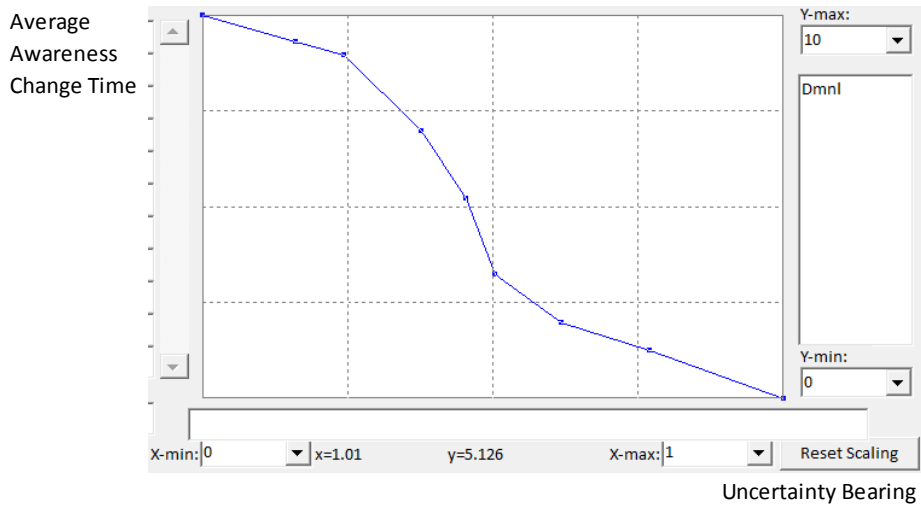


Figure 3.3.19: Uncertainty Bearing to Average Awareness Change Time

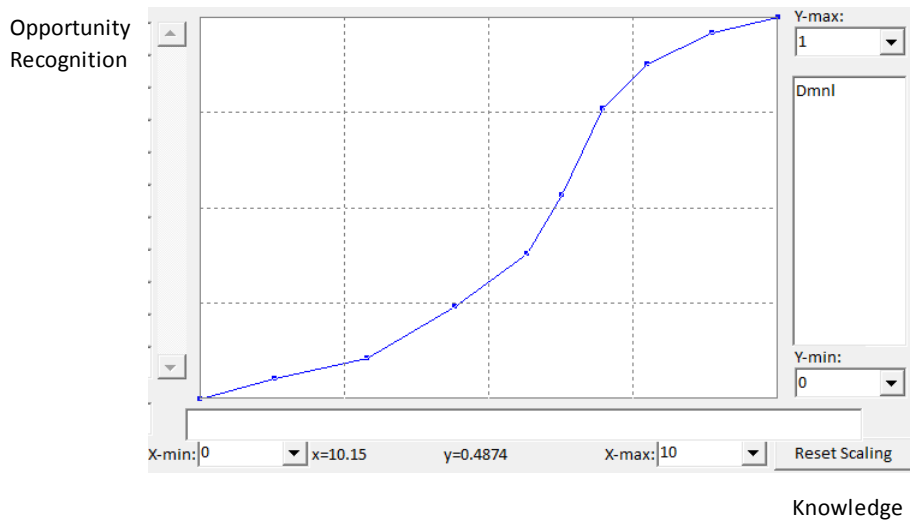


Figure 3.3.6: Knowledge to Opportunity Recognition

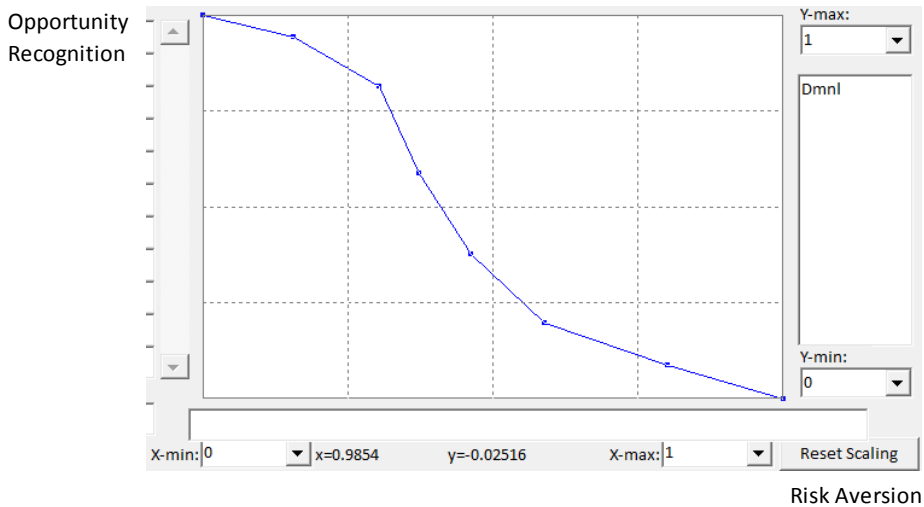


Figure 3.3.23.7: Risk Aversion to Opportunity Recognition

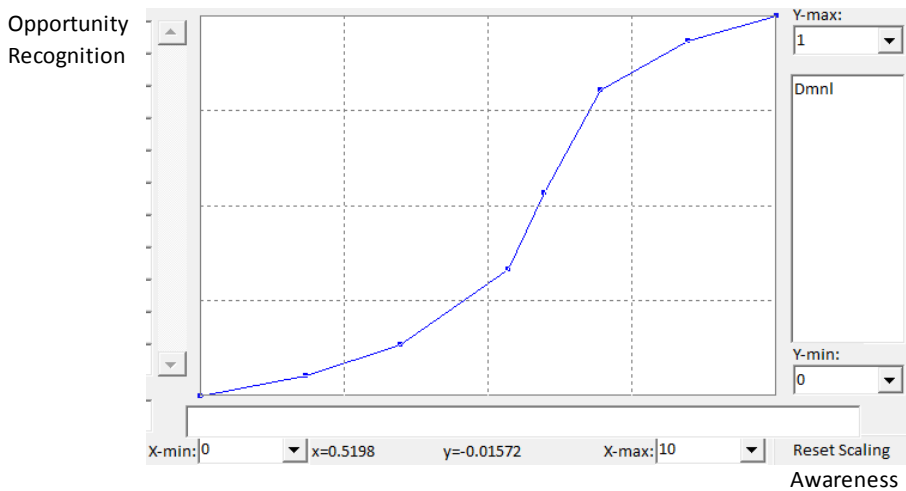


Figure 3.3.22: Awareness to Opportunity Recognition

Research indicates that the level of social norms internalization is critical in determining the level of well-being at the individual level and at the societal level (Bowles 2011; Wilson 2012). The process of social norms internalization is driven by the general adjustment to a goal balancing mechanism (Wilson 1999; Sterman 2000). The main difference between the hill-climbing and the goal gap balancing rationales is that in the latter the equilibrium level it is not being updated in response to changes in external factors. Hence, in the case of social norms internalization there is a constant equilibrium level, the level where the social norm of “not lying” for instance, is fully internalized and the



person does not lie at all no matter the circumstances (Gintis 2011). This equilibrium point has a value of one in the model given the social norms internalization scale that goes from zero to one. The generic adjustment to goal balancing equations is:

$$R_i = (S^* - S)/AT \quad (5)$$

$R_i$  stands for inflow rate and the adjustment time ( $AT$ ) is the average time required to close the gap. The average time required to internalize social norms depends on one's awareness level and on one's environment, relationships and institutions (Gintis 2003). The model accounts for the impact that one's awareness level and leadership ability has on the time that it takes to internalize social norms. The higher the awareness level and the higher the leadership ability, the less time it takes to internalize social norms. See figures 3.3.22 and 3.3.23.

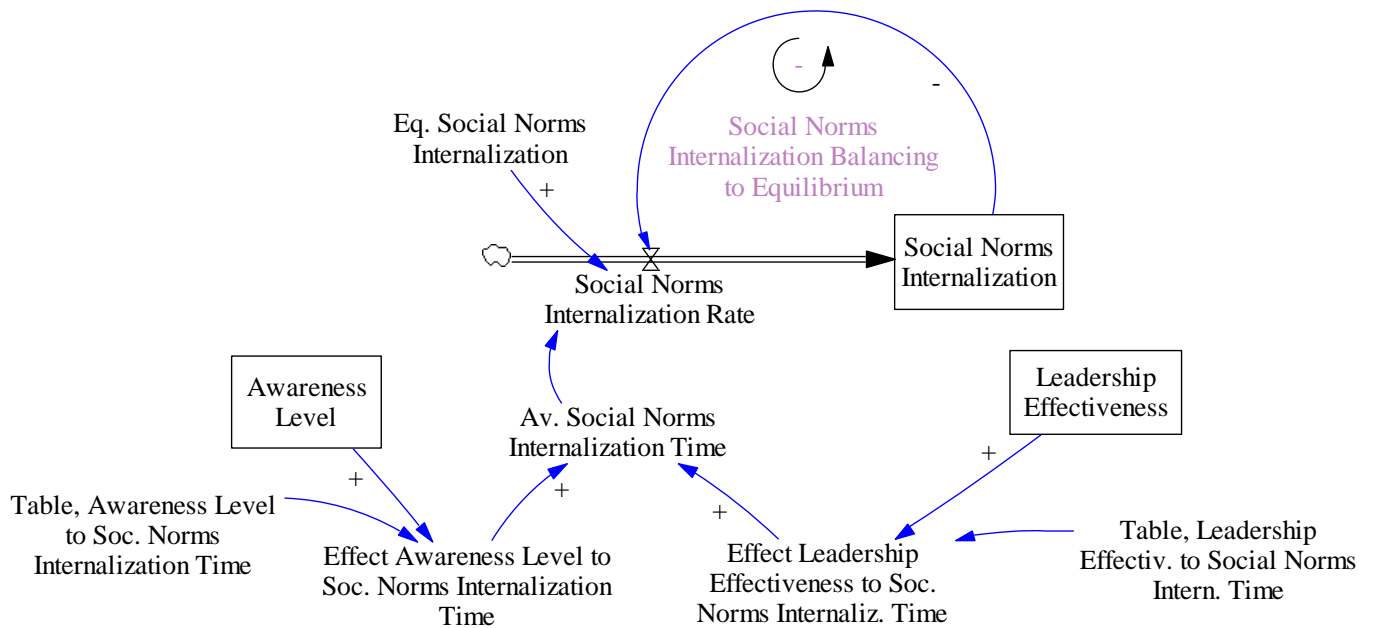


Figure 3.3.23: Social Norms Internalization Process

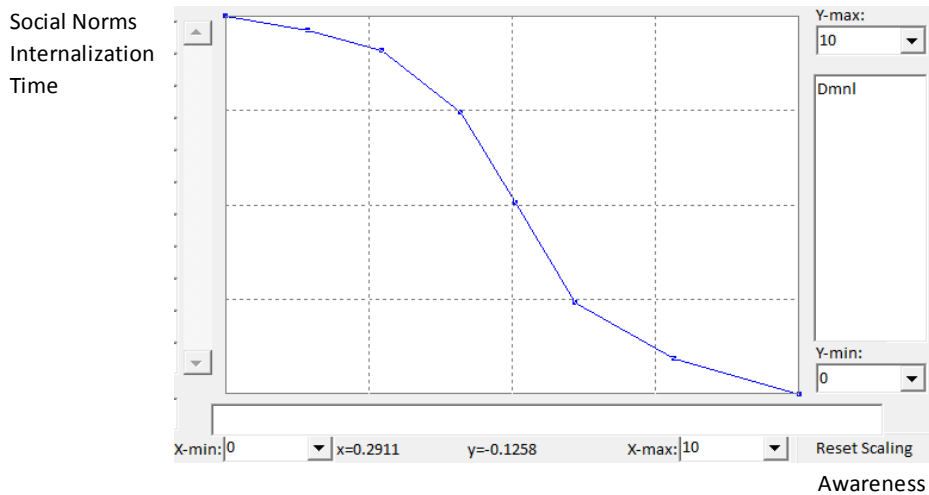


Figure 3.3.24: Awareness to Social Norms Internalization Time

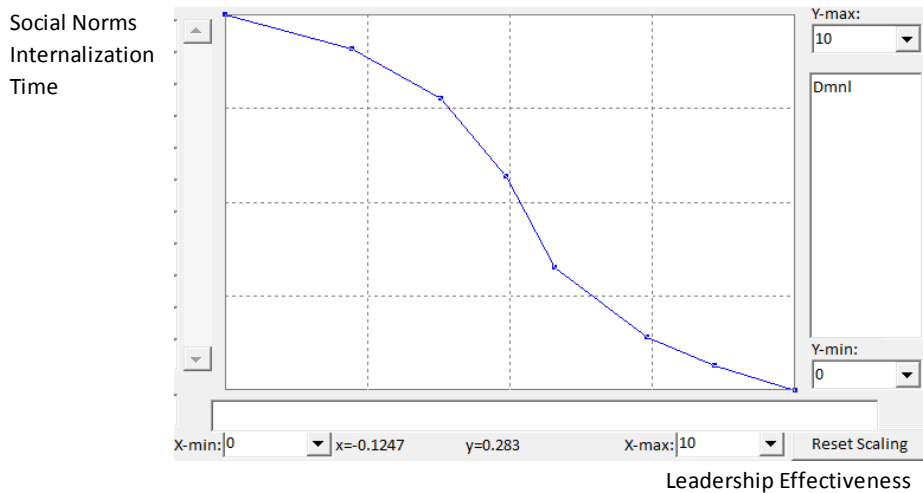


Figure 3.3.25: Leadership Effectiveness to Social Norms Internalization Time

One's level of well-being clearly affects the level of entrepreneurship and leadership effectiveness and the winery's productivity and work quality (Tomer 1987). Research suggests that the equilibrium well-being level can be defined based on two different approaches depending on the current well-being level that the person is experiencing. For instance, when somebody is depressed or not feeling very well, the equilibrium well-being level that they try to achieve is set at a lower bar than it would be if the person were at their normal state (Sterman 2000). This behavior is labeled as "goal erosion". On the other hand, when the person experiences at least his or her average well-being level,

then the hill-climbing process of setting the equilibrium well-being goal and moving towards it takes place. People specify an equilibrium well-being level that they would like to enjoy based on the information and capabilities that they have and they move towards that goal (Kahneman, Diener et al. 2003). The model acknowledges both types of equilibrium well-being goal setting and applies one or the other based on the current well-being level.

There are several factors that affect the definition of one's equilibrium well-being level. The model considers four main factors in the definition of one's equilibrium level of well-being based on the literature presented in chapter 2. One's knowledge level is positively related with one's equilibrium well-being. The more one knows, the higher the standards that define the equilibrium well-being. For instance, the more one knows about the importance of healthy habits in one's life, the higher is the definition of one's equilibrium well-being (Andrews and Withey 1976). However, there is a minimum well-being bar that everybody wants to achieve even if the person has no knowledge at all. Figure 3.3.25 illustrates this relationship. One's awareness level also effects the definition of equilibrium well-being positively. By the same token, the higher the level of social norms internalization, the higher the equilibrium well-being level envisioned, since one's standards are more strongly felt and lived (Gintis 2009). Furthermore, if the social norms that the winery represents are similar to the social norms that are being internalized by the employees, then the equilibrium well-being is enhanced (Bowles 2011).

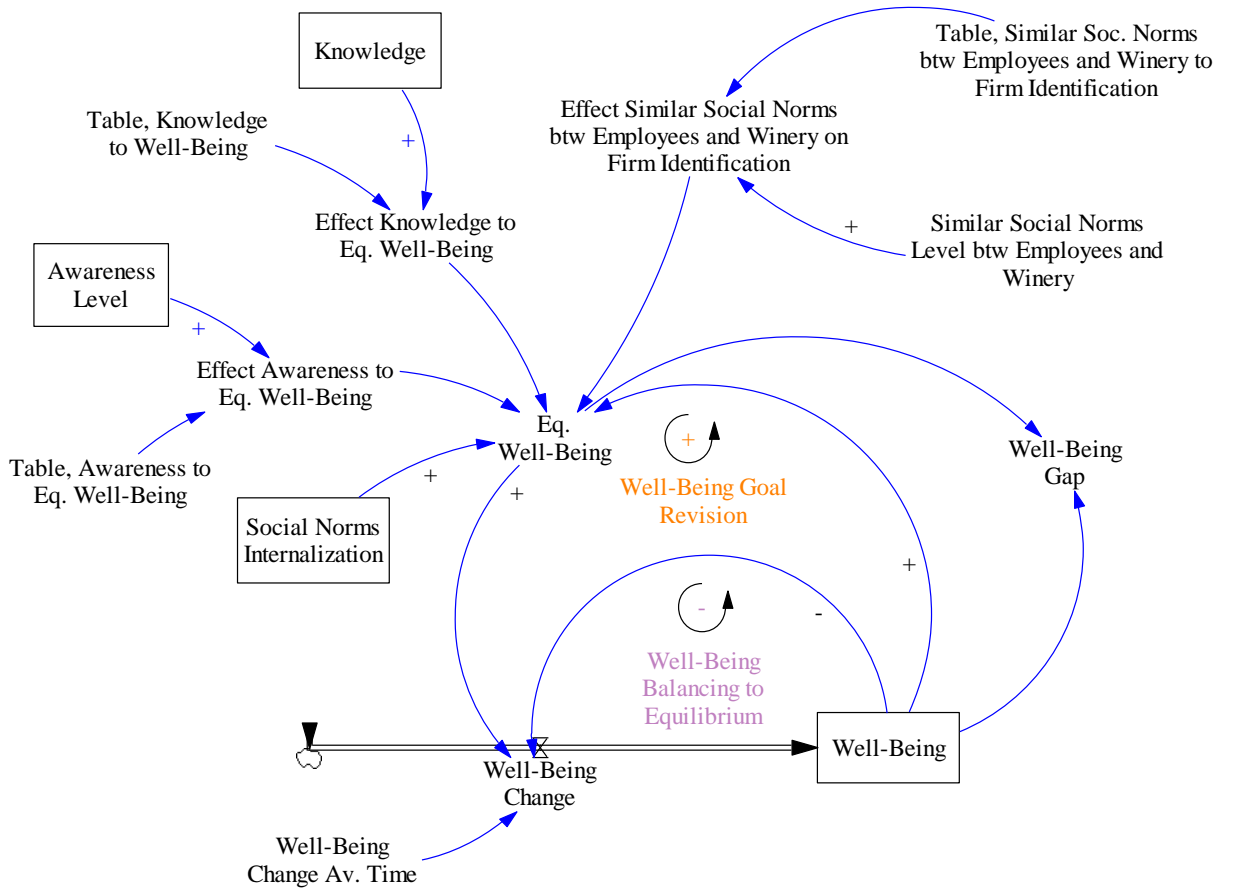


Figure 3.3.86: Well-Being Adjustment Process

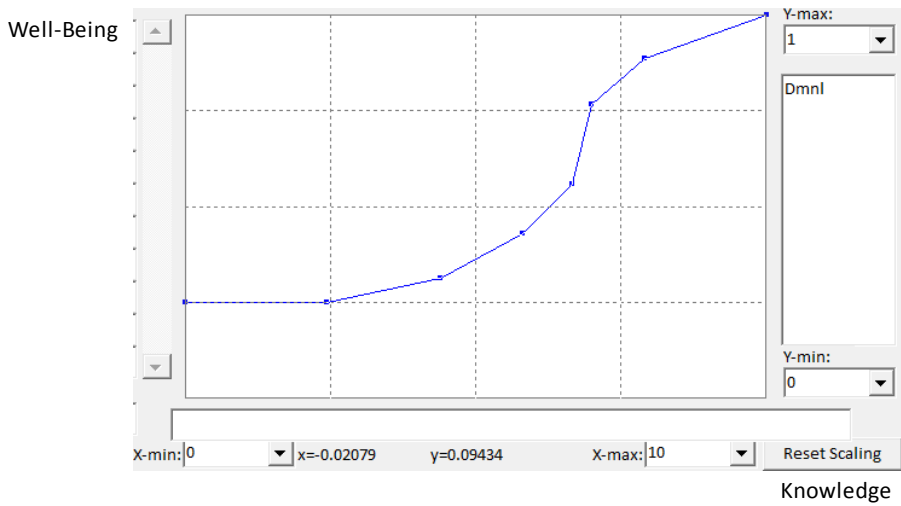


Figure 3.3.27: Knowledge to Well-Being

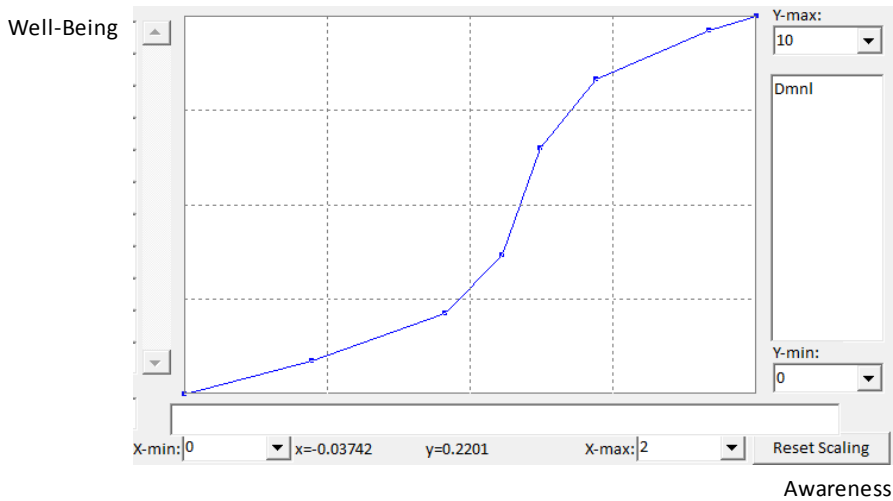


Figure 3.3.98: Awareness to Well-Being

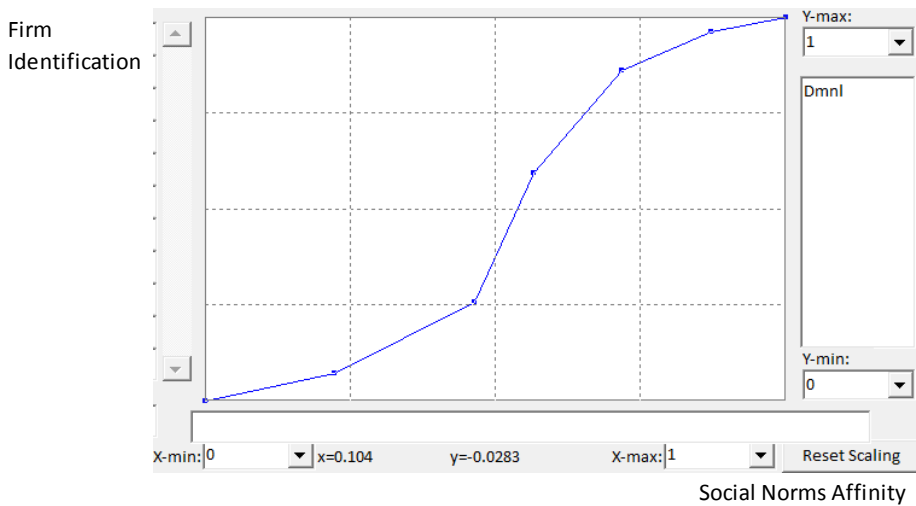


Figure 3.3.109: Social Norms Affinity to Firm Identification

Entrepreneurship and leadership effectiveness depend on several factors. Here we focus on the intangible factors elucidated from the behavioral foundations presented in chapter two and complementary literature. The processes that determine the effectiveness of entrepreneurship and leadership are based on the well-being, knowledge, awareness, and opportunity recognition ability that people possess (Bass and Bass 2009; Freytag and Thurik 2010; Grégoire 2011). People have an equilibrium level of entrepreneurship and leadership effectiveness (completing tasks in the more effective possible way), and adjust the current situation towards that goal over time. This process is

labeled as the adjustment to a goal balancing mechanism (Sterman 2000). What makes people move faster toward the equilibrium entrepreneurship and leadership effectiveness levels are their knowledge, awareness and well-being levels (Holcomb 2009; Northouse 2012); and in the case of entrepreneurship processes the level of opportunity recognition also plays a major role in reducing the time to close the goal gap (Mitchell 2002). As Scharmer and Kaufer indicate (2013), the level of these variables play a key role in determining the effectiveness of listening, communicating, organizing and coordinating, paramount factors of entrepreneurship and leadership effectiveness. Entrepreneurship and leadership effectiveness is lost when people leave the firm. A constant fraction is applied to the current level of entrepreneurship and leadership effectiveness and a yearly outflow is computed in the model.

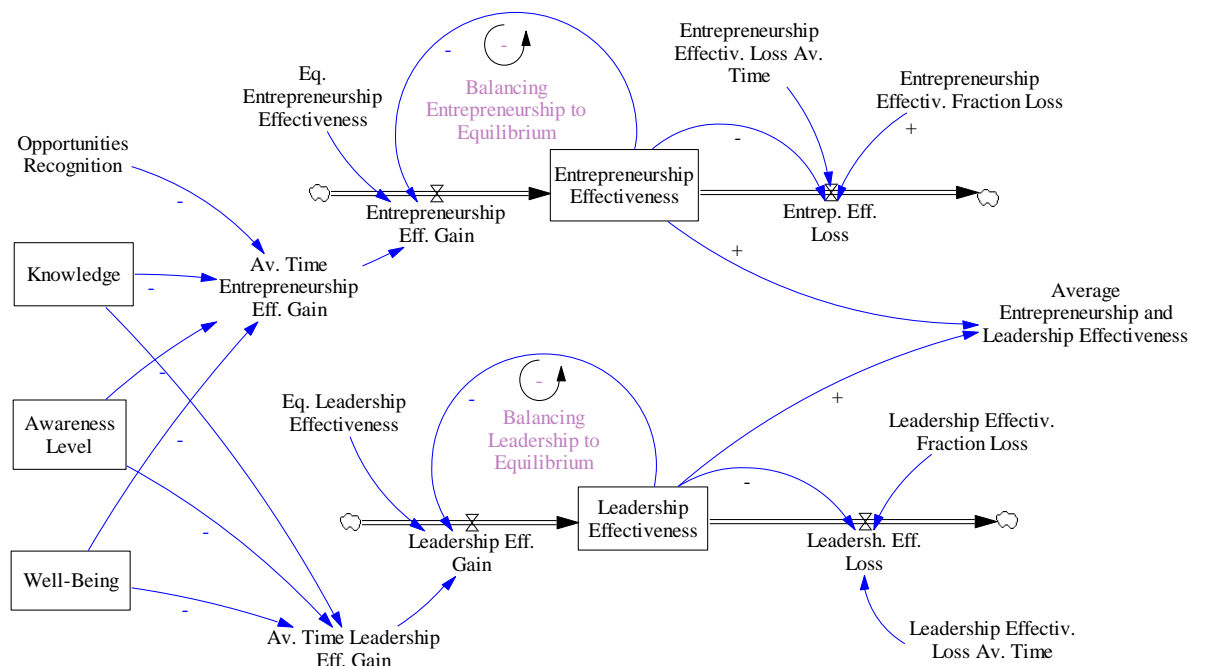


Figure 3.3.30: Entrepreneurship and Leadership Effectiveness

Winery productivity and work quality levels depend on the level of entrepreneurship and leadership effectiveness. Winery managers define an equilibrium level of productivity and work quality (e.g.: standard times to perform certain tasks, or standards to follow when welcoming guests and so on)

and introduce strategies for its achievement (Teece, Pisano et al. 1997). The higher the level of entrepreneurship and leadership effectiveness the less time it takes to move towards the equilibrium productivity and work quality level (Augier 2008). Figure 3.3.29 illustrates that process. Finally, the higher the productivity and quality, the lower time it takes wineries to adjust their current goals towards their equilibrium goals. Figure 3.3.30 illustrates that process.

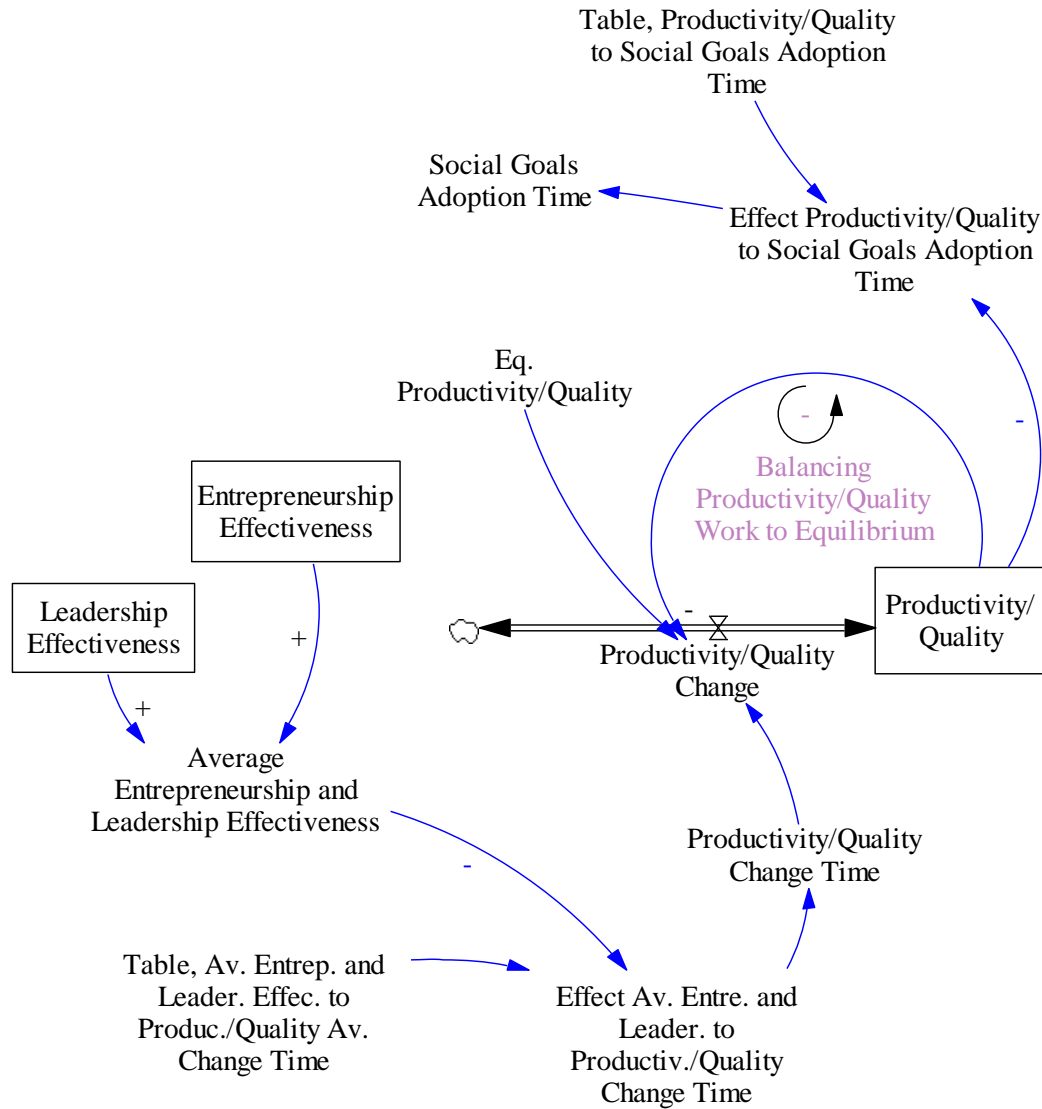
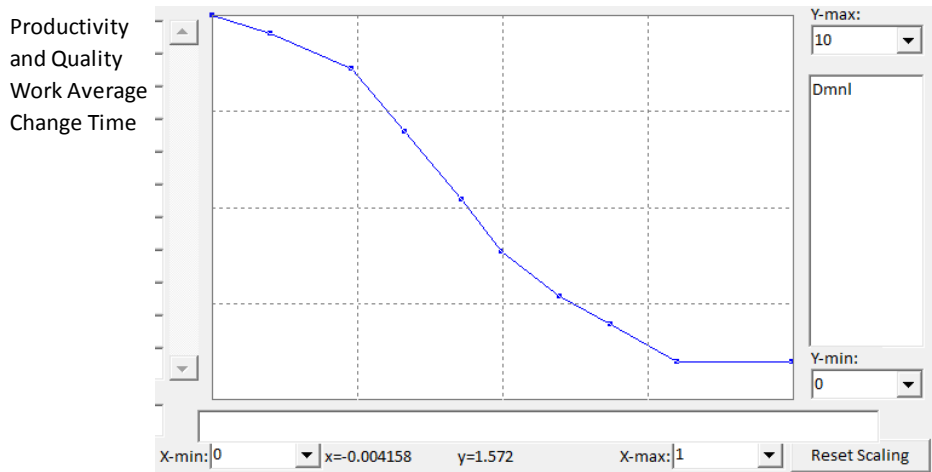
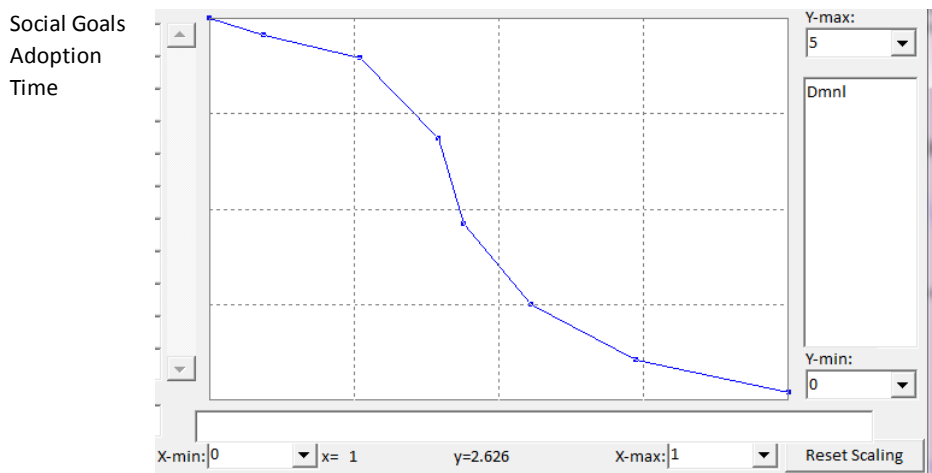


Figure 3.3.31: Productivity and Work Quality Process and Social Goals Adoption Time



Average Entrepreneurship and Leadership Effectiveness

Figure 3.3.32: Average Entrepreneurship and Leadership Effectiveness to Productivity and Quality Work Average Change Time



Productivity and Work Quality

Figure 3.3.33: Productivity and Work Quality to Social Goals Adoption Time

The present model is an initial step for enhancing the understanding of the transition towards triple bottom line goals in small wineries and for elucidating the relative impact of intangible variables on entrepreneurship and leadership effectiveness so that the equilibrium goals can be achieved. The model can be enhanced in several directions depending on the questions that are aimed to answer. For instance, since winery managers and entrepreneurs think in “dollars”, and interesting extension of the present model is to estimate the economic counterpart of winery employees’ productivity and output quality so that its level can be introduced in the economic indicators used to evaluate the outcomes of



several strategies. Once a monetary value is given to employees' productivity and work quality then the monetary counterpart of knowledge, awareness, well-being and opportunity recognition abilities can be estimated and strategies aimed to increase these levels can be evaluated.

In that direction, the present model could be tailored for each specific winery by introducing the specific perception and learning structures identified in the causal loop diagrams presented in the next section. Hence, the specific relationships between scale variables and variables with monetary units could be better estimated.

Finally, another model improvement that can bring interesting insights is to estimate the specific benefits that wineries' relationships with other institutions bring to the winery, since they are not accounted in the model.

### **3.4 Data**

This section presents the sources of information used for the empirical research. The section describes the face-to-face interviews and the online surveys used to gather the data together with the methodology applied in their construction. Finally, this section presents a thorough description of each of the nine wineries studied.

#### **3.4.1 Sources of Information**

The aim of the present research is twofold. The first aim is to solve specific problems that wineries are facing – action research. At the end, all wineries want to satisfy more customers and sell more, and the problems reported ultimately aim to achieve that goal. In that direction, our underlying theme of assessing the determinants of entrepreneurship and leadership effectiveness is evaluated when tackling this action research aim. The second aim is to contribute to our fundamental knowledge and theory of entrepreneurship and leadership effectiveness processes– basic research.

In order to address these action research and theoretical aims the data gathered is both, quantitative and qualitative in nature and comes from four sources: (a) documentation, (b) observation, (c) interviews, and (d) surveys. The combination of multiple data sources allows the researcher to validate the conclusions of certain research topics from different perspectives and to take a more holistic perspective on the area of study. This is paramount when conducting case studies, where research has to be context sensitive and holistic in order to understand the underlying structure being studied (Patton 1990).

In order to invite wineries to be part of the present research, emails were sent to all wineries in Missouri that had websites – sixty out of hundred and twelve. The rationale behind choosing Missouri wineries is that the Missouri wine market has experienced an above average level of market competition given the high level of growth in new wineries during the last decade. In order to compare wineries' ability to enhance their competitive advantage given different distribution systems, two additional wineries that are not part of the three-tier-system, but which also experienced an increase of market competition were invited to participate in the study. These two wineries were chosen based on their willingness to participate in the study, one winery is located in Virginia and the other winery is located in Maine.

The email sent to wineries explained the aim of the study, what winery managers were expected to do as key elements of the research, the confidentiality of the information shared during the research, and what the wineries would get out of participating in the study. Basically, the email indicated that the research was about the different strategies that wineries have been adopting in order to succeed given the increasing market competition. The email explained that the specific areas of research were the wineries' ability to learn, their ability to connect with customers and build lasting relationships with them, and their ability to manage their employees. The email indicated that there would be a face-to-

face interview as part of the study and a possible second contact either in person, by email or online in order to complete the final parts of the study. Finally, the email indicated that a final report about the wine sector and the research findings would be sent to the participating wineries, and that wineries' data would be kept confidential if so desired. Research on whether interviewees should be compensated indicates that alternatives to cash instill a deeper sense of reciprocity (Patton 2005). Given the present research aimed at illuminating some of the areas where wineries are struggling, a necessary condition for its success was to share the findings with winery managers.

Seven Missouri wineries expressed an interest in participating in the study and the face-to-face interviews took place during the months of March, April and May of 2013. Out of the nine participating wineries some belong to the category of small wineries (less than 10,000 cases per year), some belong to the medium wineries category (between 10,000 cases and 99,999 cases per year), and some belong to the big wineries category (equal or more than 100,000 cases per year) (Dillon 1992).

### **3.4.2 Face-to-face Interviews and Methodology**

Two methodologies were combined in order to gather the first set of data. Given the case study nature of the present research it was paramount to implement the method of qualitative interviewing as well as the observation method applied during fieldwork.

Given the nature of the face-to-face interviews conducted, mainly with winery managers and owners, a combination of the *general interview guide* approach and the *standardized open-ended interview* approach were implemented (Patton 1990). The general interview guide approach involves outlining a set of issues that are to be explored with the interviewee before the interview begins. The guide serves as a basic checklist during the interview to make sure that all relevant topics are covered. Under this approach as Patton mentions, "the interviewee remains free to build a conversation within a

particular subject area, to word questions spontaneously, and to establish a conversational style but with the focus on a particular subject that has been predetermined” (1990). The standardized open-ended interview approach consists of a set of questions carefully worded and arranged. This approach is used when it is important to minimize variation in the questions posed to interviewees.

The rationale behind combining the general interview guide approach and the standardized open-ended interview approach is that the first allows the flexibility to explore specific areas that come into the conversation while having a clear direction about the key points that need to be elucidated. Having this flexibility is crucial for achieving the process feedback, the connection between interviewer and interviewee that allows sincere responses and a deeper understanding of the case studied (Patton 2005). The combination of these approaches also helps the development of probes and follow-up questions that allow the triangulation of observations that ensures the accuracy of the answers gathered. Also, having some questions carefully worded and being able to posit them at the appropriate time allows the comparison among case studies. This is necessary because as research has indicated (Creswell 2012), how a question is worded and asked affects how the interviewee responds. Finally, this approach to data collection allows the sequence of questions to move from less-controversial questions related to their background, present behaviors, activities and experiences, to more opinions and feelings about present and past situations, and to finally attitudes towards the future. This sequence is recommended when conducting qualitative interviewing (Patton 1990).

The observational methods applied were both as participant and onlooker, since in some occasions I walked with the winery manager to each part of the winery and I was invited to try some technologies or take part of some production processes, and in some other occasions I just observed while waiting. In every case the winery managers knew that I was there and that I was collecting data for the present research (the overt observational method). Researchers have posited some concerns about

the validity of observational data since applying an overt methodology has an impact on what is being observed, since people may behave differently when they know that are being observed. However, researchers have also claimed the ethical issues involved when conducting covert observations, naming them “the debate over secrecy” (Patton 2005).

Observational research allows the researcher to capture information that winery managers are not aware of given their daily routines and greater familiarity with their business. It is important to acknowledge that the data gathered from overt observation may not fully reflect the standard winery behavior since people were aware that they were being observed. Furthermore, the observational data reported are affected by the perspective of the observer that at the same time is being affected by its environment. The duration of the interview and observational processes was between 2 hours and 5 hours, the time required to answer the interview questions and make the necessary observations. Researchers evaluate the quality of observational reports by the extent to which the report permits the reader to enter into and understand the situation described (Patton 1990).

All the conversations took place during at each winery and are recorded. This is crucial when conducting qualitative research since what matters the most is how interviewees phrase their responses and how they convey them (Patton 2005). Recording all the conversations allows the researcher to not worry about capturing the specific words expressed by the winery manager and to be able to take notes about the specific points that need to be emphasized. Hence, in the this type of research the mechanics of gathering data require complete recording of all the conversations with each winery manager, specific notes taken during the face-to-face interviews and field observations, as well as the acquisition of certain documents that were requested from winery managers (mainly financial documents).

The questionnaire items used in the face-to-face interview are either open ended questions or questions requiring answers in the form of a Likert scale of seven points (Likert 1932). One

point represents a 'low degree' and seven points represents a 'high degree'. The information gathered during the face-to-face interview covers the following topics: (a) background information; (b) winery goals – specificity, alignment, diversification; (c) winery performance – production, sales, costs and revenues; (d) winery inputs – grapes source, employees types; (e) winery specific assets; (f) winery's strategic means – imitability level, relevance level; (g) winery's values – fairness, truth, altruism; (h) employee and manager characteristics – well-being level, winery identification level, ; (i) employee management – learning enhancement, knowledge level, relationships quality and uniqueness; rewards system; (j) relationships with suppliers and distributors – quality and uniqueness; (k) organizational structure – fit, adaptation level; (l) intangible resources management – relevance level, imitability level, (m) main external challenges, (n) main internal challenges, (o) main external opportunities, and (p) main internal opportunities. Finally, the specific learning processes that the research focuses on are: (a) winery related knowledge; (b) personal mastery knowledge; (c) group knowledge; and (d) systemic knowledge. The specific questions considered in the face-to-face interview can be found together with the consent form are reported in appendix 2.

The method used to analyze the qualitative data gathered is based on the purpose of analysis, on the thick winery descriptions developed and employs a combination of first deductive analysis and then inductive analysis.

After gathering the first set of winery information (face-to-face interview recordings, complementary documents and observational notes) it was coded and introduced into an excel document. The questions from the face-to-face interview that are based on a 7 point Likert scale were converted into a scale of 10 or 100 points, depending on the type of question and its purpose in the simulation model. The main topics and relevant information seek from the open ended questions was coded based on the ranges observed from all the answers and relevant sentences and paragraphs are

written down and used as a complementary proof for certain perceptions and approaches. The coding process from the open ended questions was conducted by the present author. Further validation could be done by having another researcher code the open ended questions. The main tables gathered from the face-to-face interviews and online survey are presented in section 4.10 (Empirical Research Aggregated Results).

Once the data are organized and allocated certain codes, inductive analysis is used in order to identify patterns, to label themes and to develop category systems, insights and new understandings. System thinking theory and the system dynamics approach is used in order to elucidate generic structures from each winery and the resulting patterns.

The questionnaire can be improved by introducing additional questions similar to those above, to ensure the consistency of the answers. This strategy is sometimes introduced when researchers want to estimate the level of answers deviation related to key questions. In the present study the interviewer double checked interviewees' explanations and reasoning by posing extra questions not included in the questionnaire when necessary. However, it would be beneficial to develop the extra validation questions before the interview takes place. Finally, a second researcher that also coded the open ended questions would enhance the validity of the results presented in the aggregated results tables.

### **3.4.3 Survey Questions and Methodology**

After analyzing the data from the face-to-face interviews several additional issues related to the strategies that wineries are applying, and several questions related to the traits of winery managers and personnel, were identified as critical in order to properly identify the leverage points that would enhance wineries' sustained competitive advantage. Winery managers agreed to cooperate and to provide any extra information needed for the study. As a result, an online survey was developed and

sent via email to each winery so that the study could be completed. The information from this survey was analyzed following the same steps presented for the face-to-face interview.

These additional questions related to the wineries' strategies related to: (a) their desired production and sales, (b) their desired relationships among personnel, (c) their desired relationships with customers, and (d) their desired relationships with government officials. In particular, the questions were designed to identify the limiting factors that are blocking the success of each strategy, together with their evolution over time, and the main processes that have alleviated these limiting factors and affected their evolution over time. The specific questions related to managers and personnel traits were designed to determine: (a) the leadership level, (b) the leadership type, (c) the level of risk aversion, and (d) the level of uncertainty borne. Some questions were open-ended and some involved a five point Likert scale. The online survey questionnaire can be found in appendix three.

### **3.4.4 Wineries Descriptions**

#### **3.4.4.1 Winery A**

##### *3.4.4.1.1 Winery Background*

##### 3.4.4.1.1.1 Reason for Existence

Brian, with Norwegian roots is the founder and owner of "A" winery. Brian's grandfather started the family tradition of making wine for the family from the fruits that became too ripe to sell. Brian's father followed the tradition and Brian learnt all the wine-making processes and pearls of wisdom from his family. After having worked as a technician in Minnesota for several years he found himself at the end of his employee stage when the employer sold his ownership in the firm. Brian decided to pursue his own business and turned the family hobby to a profession. Brian's business experience comes from his previous jobs as technician and technician manager in a medium size firm. Besides this experience he



learnt how to properly manage all the winery related paperwork, accounting requirements and business strategies by himself.

When considering where to start the business, Brian was living in Minnesota and decided that South West Missouri would be a good location to establish the winery since the weather and land are good for growing fruits. After exploring several options and knowing that location is a key component for a business success, in January 2003 Brian bought land with an existing pole barn three miles north of the Interstate 44 and a quarter mile west of H highway.

#### 3.4.4.1.1.2 Structure

##### 3.4.4.1.1.2.1 Vision and Goal

Winery A started in December of 2001 with the intention to be a small – medium-sized family winery that supplies the southwestern part of Missouri and its periphery. Winery A goal was to keep increasing its sales and be able to increase its size with the revenue generated from the growing sales.

Today their vision is not clear. Brian is considering retiring in a few years and it is not clear if any of his sons will continue with the family business. Brian is the only wine-maker and manager in the business and he does not see himself partnering with another wine-maker outside the family. His only paid employee, Erik, who is in charge of marketing and retail sales, has a different vision of how to make Winery A sustainable but he does not see himself working there unless Brian or another wine-maker takes care of the production process.

##### 3.4.4.1.1.2.2 Mission and Values

Winery A's mission is to produce the best hand crafted southwest wine from fruits such as red and black raspberries and cherries. Winery A values quality wine, produced with no artificial additives. Winery A also values satisfying the palates of people who enjoy sweet wine and people who enjoys dry wine. Hence, it is the only winery that offers wine from the same fruit in both versions, sweet and dry.

Winery A also values family, meeting personally with its customers and facilitating a good experience for visitors by offering live music and several games that can be played in the winery's back yard. Finally, another important Winery A value is that it functions under the lemma of "pay as you go", hence it does not have outside loans (excepting the house payments), and acquired some equipment from wineries that were closing.

#### 3.4.4.1.1.2.3 Employees and Departments

Winery A is owned and managed by Brian. Brian wears all the winery hats except the marketing and retail distribution which was delegated to Erick in 2010. Brian's wife works elsewhere, and helps in the tasting room and with setting up the winery yard when events take place. Brian's sons, Nathan and Damon, help maintain the website and computers. Winery A enjoys several volunteers that help in the tasting room and with setting up events. Another characteristic of Winery A is that it organizes "bottling-night parties" with members of the wine-club and hence gets all the bottling done and gives some bottles to the volunteers that helped in the process.

Winery A owns 10 acres where it started growing cherry trees and red and black raspberry trees in spring 2003. In January 2004 Winery A received the federal winery Basic Permit and subsequently all the Missouri and County licenses and the first batches for sale were ready in December 2004. The winery opened for retail business on Memorial Day of 2005. The tasting room was opened in March 2007, after some improvements were made to the barn. Winery A tried several marketing strategies. Initially Brian was in charge but once his other duties took all his time he delegated the marketing and retailing tasks to Erick, previously one of his volunteers. As a result, Winery A, like most of the other wineries, has all the departments of a vertically integrated firm. It produces part of its inputs, it processes them, it makes them marketable and it distributes them in the market.

#### 3.4.4.1.1.2.4 Employee Management

Brian organizes his time and salary as he considers appropriate. For now, Winery A owes Brian his salary as he has not been getting a monthly payment from Winery A income. Winery A pays Erick a monthly payment for his marketing and retailing tasks. Finally, Winery A benefits from several volunteers who help in the tasting room, in setting up some events and in the bottling process. All these volunteers get bottles of wine as compensation. The relationship between Brian and Erick seems good and sincere. Brian trusts him and he has demonstrated himself to be a good employee who cares about Winery A and its sustained prosperity. The volunteers that I met seemed happy to be helping set up the yard for the concert and enjoyed the relationship with Brian and his wife.

#### 3.4.4.1.1.2.5 Production Process and Technology Used

Winery A grows its own fruit and it also buys some fruit from other growers in the area (from within 3 county radius). The contracts with the other fruit growers are verbal. The source of fruit used has been shifting towards a higher proportion purchased. Currently around 20 percent of the fruit used in wine production is self-grown and 80 percent is contracted. Brian sees that collecting the fruit is very time consuming and that the machinery to collect grapes or fruit as something that may damage the input quality. As a result, Brian is opting to expand the share of fruit that is being bought from neighboring fruit growers. However, Brian recently bought a tractor and some land by the barn for further winery expansion.

Their production process is unique in the sense that it produces wine batches twice a year. Brian has his own chemistry tools where he measures the combinations for his wines. All the tanks are stainless steel and their maximum height is 6 feet so that he can easily clean them himself. The bottling system is old and allows them to manually bottle just four bottles per minute. All the labels are manually attached.

Sales are manually registered in a book as they take place or at the end of the day. The cash register is not linked to the computer where all the accounting takes place. Hence, it is time consuming to enter the sales into the accounting software and also leads higher accounting mistakes since some information is lost on the way.

#### 3.4.4.1.1.2.6 Supply Channels, Distribution Environment

Winery A has not followed the traditional winery expansion process (tasting area, retail and/or local restaurants, and beyond the local area), since it first started selling in retail format (Memorial Day of 2005) but did not open its tasting room until almost two years later.

Its tasting room is small compared to the average small winery tasting room. It is approximately 500 square feet. However, Winery A has a big open area at the rear with around twelve tables and sitting options where people can enjoy the nice weather and the live music when available. As a result, the weather plays a big role in on-site sales.

Wine distribution channels in Missouri work on the three-tier system of alcohol distribution. As a result, in order to get their wine to the main retailers they have to hire the services of the main alcohol wholesale companies and lose a significant part of their on-site sales margin. In Missouri there are no small or local wine distributors that fit small and medium winery's needs. As a result, Winery A distributes its own wine to restaurants and retail stores nearby that want their product. Also, Winery A partners with Vino Shipper to distribute their wine beyond their local region and to other states.

Winery A has targeted restaurants in the area that sell local food and that appreciate local wine as a mean to reach new customers. Another selling strategy has been to work with local retailers that allow Erick to offer wine tasting at their stores so that a more direct and full experience can be offered to new customers. Finally, "A"'s black raspberry desert wine is used as an ingredient in dark chocolate truffles at a local patisserie.

#### 3.4.4.1.1.2.7 Marketing Strategies

Winery A has tried several marketing strategies. They rent a sign on the nearby main road in order to attract travelers. The sign cost \$100/ month and sales did not increase during the first six months that the sign was there. Winery A also tried marketing on the local radio station for one year. Sales seemed not to increase based on this marketing strategy. Brian was invited onto a local TV show to talk about the winery and the uniqueness of its wine. Winery A participates in national wine contests and uses its prizes in its marketing. Their winery website is quite simple and not very appealing to visitors. However, it is friendly and it conveys all the basic information that people normally seek.

#### 3.4.4.1.1.2.8 Demand and its Cycles

Winery A is experiencing a cycle in its demand patterns. Since 2005 sales have increased each year at a modest rate but in 2011 sales dropped. The main demand decrease has taken place on-site. Fewer people visited winery and those that did visit bought less wine. Brian's response has been to reduce production in order to avoid accumulating substantial inventories. Erick envisions expanding the tasting room either by moving it to what is currently Brian's house or by building a new section onto the current tasting area. Brian does not have a clear vision in that regard yet. Having more tasting room area may reduce demand cycles since more people would be able to enjoy the wine during colder seasons. Brian would also like to expand sales in local restaurants nearby. Not much energy has gone in that direction yet.

#### *3.4.4.1.2 Main Perceived Challenges by the Owner*

The main external perceived challenges by Brian are: a) the distribution channels, how to reach more people outside the winery and still gain a decent margin; and b) how to attract people to the winery during less than ideal weather. The main internal challenge perceived by Brian is how to effectively increase sales.

#### *3.4.4.1.3 Main Opportunities Perceived by the Owner*

The main external opportunities perceived by Brian are: a) the growth in demand for local products and b) the increase in people's willingness to try wine more. The main internal opportunities identified by Brian are: a) his capacity to create new very good wines, and b) land availability.

### **3.3.4.2 Winery B**

#### *3.4.4.2.1 Winery B Background*

##### *3.4.4.2.1.1 Reason for Existence*

Charlie is the founder and owner of winery B, winery that started in 2010. He owns approximately hundred acres and has been raising cattle all his life. Charlie knows the history of Gasconade County and had a vision that the land could return to vineyards and start producing wine again. He saw that this would bring more possibilities to his children.

##### *3.4.4.2.1.2 Winery Structure*

###### *3.4.4.2.1.2.1 Winery Vision and Goal*

His vision is to grow the winery while conserving its elegance and luxurious atmosphere. The growing vision is to diversify outside the wine sector in order to satisfy people needs for gatherings and celebrations providing also restaurant, entertainment and accommodation services.

His goal is to keep expanding facilities and sales and reaching new customers.

###### *3.4.4.2.1.2.2 Winery Mission and Values*

Winery B mission is directed towards bringing well-being and economic sustainability for the family and towards building a stronger community by satisfying neighbors' need for gatherings and celebrations and promoting the services of good business around the county and nearby towns.

Winery B is guided by family values, promoting welcoming, friendship, and care for their guests, together with elegance and quality service.

#### 3.4.4.2.1.2.3 Employees and Departments

Winery B has seven permanent employees and several seasonal employees that work during the weekends. Charlie is the owner and supervises all parts of the winery, bed and breakfast and restaurant. Gus is Charlie's son, he is the wine maker and he is also in charge of the events. Sam is also Charlie's son; he is in charge of the events and helps in developing the winery expansion. Karen is Charlie's wife; she is in charge of the restaurant kitchen, and helps with communications and accounting. Laura is the accountant. Peter is the grape grower and Michele is the part time sales representative. Several servers come during the weekends to help with the restaurant and events.

Winery B is a vertically integrated firm; it produces part of the grapes used in the winery as well as part of the meat served at the restaurant. Winery B also processes all the grapes for their various wines, bottles them and distributes the wine in the nearby counties. The marketing is contracted from a local firm.

Since 2010 the barn has been developed in order to become the winery lab where all the wines are developed and tested as well as the winery inventory where all the tanks, barrels and cases are stored. The barn also houses the office where accounting and networking takes place, as well as the restaurant and events area.

In 2012 an exterior patio was developed where ceremonies and concerts can take place.

#### 3.4.4.2.1.2.4 Employee Management

Winery B is a family business. The relationship among Charles and his sons is healthy and it allows the winery to move forward at a fast pace. Charles and Gus have different opinions about how to develop certain parts of the winery or how to handle certain issues but they acknowledge that the conversations that come from these different views are beneficial for the better management of the winery.

Laura, the accountant is a neighbor of the winery who has been a friend of the family for a while. Michele the sales representative is motivated about winery B wines and has demonstrated a great ability to expand wine sales beyond the nearby regions. Winery B relationships with employees outside the family seem healthy.

#### 3.4.4.2.1.2.5 Production Process and Technology Used

Winery B winery is a vertically integrated firm. Winery B grows part of its grapes and buys the rest on the spot market mainly. Gus sees that even though they have extended the vineyards, it is easier for them to buy the grapes that they need on the spot market or via contracts. One of the main reasons for this preference is that winery B does not have machinery yet to collect grapes and for now it is time consuming and more costly than buying the grapes. Gus sees an increasing trend of provisioning the grapes from the outside for the next few years.

Gus has been developing winery B wine collection with the guidance of a neighbor wine maker friend of the family. Now Gus feels confident to experiment himself. If he needs any guidance he knows that he can contact his neighbor for help. Winery B has enough capacity to store all the wine produced and it has some spare capacity in case they need more tanks or barrels. They mainly use “stainless steel tanks” for white wine and “oak barrels” for red wine. The tanks are medium size. Winery B does not have an elaborated bottling system and Gus and his friend gather when needed and work on the bottling and labeling process that requires some hand work.

#### 3.4.4.2.1.2.6 Supply Channels, Distribution Environment

Winery B main sales are made on-site during the week from long distance drivers and from locals that come to enjoy some wine and/or some food. On Fridays and Saturdays several events take place, especially during the high season. On Sunday winery B offers a “chicken” lunch that attracts many neighbors to their facility. On-site sales are not yet recorded in a system that is directly connected to the



winery accounting process. Hence, sales are recorded in the cash register and at the end of the day this information is transferred to the accounting department.

Michele is the sales representative outside the winery B family land. As of today, winery B wine is being sold in forty eight locations around central Missouri, mainly liquor stores, stores and supermarkets, and a few local restaurants. The distribution to these locations is done by the family and by Michele since winery B does not see that it would be profitable to partner with a big wholesaler for now.

#### 3.4.4.2.1.2.7 Marketing Strategies

Winery B mainly relies on an online marketing strategy via their website and Facebook. Winery B has been part of a radio show since its beginning. Some people have got to know them because of their participation in this radio show. Charlie used to work for local and state governments for fifteen years. He has a lot of connections with politicians and business people and the word has been spread through these networks. Charlie has got involved also in developing a wine trail in this part of Missouri. He believes that having a wine trail would bring new guests as well. Winery B does not have a wine club yet, for now they do not consider this necessary.

Winery B winery website is visually appealing but it is not functioning properly. Many of the sections and links do not work and the visitor gets stuck on the same page instead of being directed to new information that he or she is looking for.

Furthermore, winery B has a different website than the winery B bed and breakfast. This is not very friendly for possible future guests that do not know that the two businesses are run by the same family and can be enjoyed together.

The winery has participated in several contests around the country in order to get its wine recognized and to network with other people in the sector.

#### 3.4.4.2.1.2.8 Demand and its Cycles

Winery B wine sales have been growing since 2010 when they opened. So far the winery has not experienced any yearlong cycles. However, winery B has noticed the fluctuations during winter season and summer season and that is why they are trying to promote other events and gatherings that are also needed and feasible during low wine tasting seasons as well as during week days.

#### 3.4.4.2.1.2.9 Inventories

Winery B is expanding its sales at a higher pace than its supply. Hence, inventories have been running out early each season and they instructed Michele not to keep expanding sales in order to have some wine in situ.

New inventory space is needed in order to keep up with increasing demand.

#### 3.4.4.2.2 *Main Perceived Challenges by the Owner*

The main external perceived challenges by the winery are: a) distribution, especially beyond the closer regions; and b) the weather, in terms of grape growing and sales seasonality. The main internal challenges identified by the winery are: a) proper accounting and b) to keep sales up.

#### 3.4.4.2.3 *Main Opportunities Perceived by the Owner*

The main external opportunities identified by the winery are the increase in consumer preferences for local products and the increase of people's preferences for social needs. The main internal opportunities identified by the winery are their community vision, their networks with community people and politicians and their beautiful land space.

### **3.3.4.3 Winery C**

#### 3.4.4.3.1 *Winery C Background*

#### 3.4.4.3.1.1 Reason for Existence

Brian and Sharon were in a transitional moment in their lives. They were pondering what to do. Brian is an entrepreneur that had run several businesses before and Sharon dreamed of growing grapes. They explored several locations in the East Coast because its increasing market and they decided that the land where winery C is located now was a good one given its close proximity to the Washington DC market (1h) and its easy access from Hwy 66. As a result, in 2008 winery C was established.

Brian Roeder is originally from California and he is in his early 50s. Sharon is originally from the east coast and she is in her late 40s.

#### 3.4.4.3.1.2 Winery Structure

##### 3.4.4.3.1.2.1 Vision and Goal

Their vision has been to go beyond selling wine by also creating a place for community gathering. Winery C is achieving this goal by creating a bigger setting tasting room area as well as a smaller setting where wine tasting is paired with art exhibitions and people can gather. To that end winery C welcomes parents with children, people with dogs, groups' fresh off the trail, bikers, foreign dignitaries, and Washington's elite with a warm handshake and a smile.

The winery goal is to grow up to 10,000 cases per year. They may see some diversification of business but their target is to develop a sustainable winery by producing 10,000 cases per year.

##### 3.4.4.3.1.2.2 Mission and Values

Winery C mission is to create a sustainable winery that produces around 10,000 cases per year while developing a community atmosphere in the winery and contributing to the development of the nearby communities.

Winery C values are characterized by welcoming to all, friendship, openness, community building, flexibility in the face of new circumstances and enjoyment of life.

#### 3.4.4.3.1.2.3 Employees and Departments

Winery C has thirteen fixed employees and several seasonal employees that work during the weekends and peaks during the high seasons. Brian is the president and CEO, he supervises all the aspects of the winery, especially the ones related with wine selling, marketing and accounting. Jorge is the general manager and helps Brian develop the key strategies that enhance winery C sustainable competitive advantage. Rick is the wine maker (along with Sharon) and grape grower. Elisabeth is the operations and special projects manager. Adale is the weddings and events director. Victoria is the human resources director and Sherrie is the clubs and membership director. Andy is the web master and Erik is the marketing and public relations director. John is the gallery director and two other women are in charge of accounting and delivering. Finally, winery C has two fixed people in the tasting room and several seasonal tasting room workers for the peaks periods.

Winery C is a vertically integrated firm. It grows its own grapes; it produces its own wine, bottles it and sells it on-site and around the region.

#### 3.4.4.3.1.2.4 Employee Management

Winery has experienced several approaches and strategies for employee management since 2008 because the winery has experienced a substantial increase in fixed and seasonal personnel. At the moment Jorge is coordinating and supervising employee training, effectiveness and well-being since Brian's other hats were requiring substantial time and he was not able to take proper care of this aspect of the business.

Brian's employee management approach has been to take care of them and to make them feel part of the family. He acknowledges that part of this process sometimes requires being clear and letting

people know when their behaviors and actions are not aligned with the winery's values and principles. Dramatic situations are not welcomed and Brian has had to develop emotional intelligence skills in order to enhance the proper development of his employees and the winery as a whole.

Jorge started working at winery C in 2012 when Brian needed help in supervising and strategizing. Since Brian is not at the tasting room area all the time, Jorge has developed new relationships with the other employees by working most of the time from the winery tasting room. Jorge's relationships with employees are allowing the top managers to have a more complete perspective on how the other employees feel and what difficulties they face when performing their tasks. It seems that some relevant information was not reaching Brian's attention until Jorge joined the winery.

#### 3.4.4.3.1.2.5 Production Process and Technology Used

Winery C is a vertically integrated firm. It produces part of the grapes used in wine production, it produces the wine and it bottles it and it manages its distribution. Winery C has machinery that allows them to collect the grapes in a less time consuming fashion. The winery has good crushing and processing technology that eases the production process. All the wine is stored in large stainless steel tanks and then is transferred to oak barrels. The production capacity allows winery C to reach the production of 10,000 cases of wine per year. The bottling and labeling process occurs on-site via a quite manual process where Rick and Sharon spend few hours of their time. All the finished cases are stored in an inventory room that is reaching its full capacity not allowing an easy management and access to the required bottles.

#### 3.4.4.3.1.2.6 Supply Channels, Distribution Environment

Winery C sales are mainly on-site. However, winery C also sells around the region and in all states where wine can be legally shipped. The winery uses UPS services for shipping its wine since it

does not consider it beneficial to partner with a wine wholesaler or to collaborate with the government (Virginia Winery Distribution Firm). Basically, it is not in the winery's interest to sell its wine in liquor stores or retail stores. Virginia is one of the eighteen states that do not work under the three-tier system. All beer and wine with less than or equal to fourteen percent alcohol are sold at supermarkets and convenience stores. All liquor stores are run by the state. Hence, Winery Coffers an online store through its website where people can place their order. Also, the winery distributes wine to their club members seasonally and when they place special orders.

#### 3.4.4.3.1.2.7 Marketing Strategies

Winery Chas linked its community and welcoming values with their love for dogs and the love and friendliness that dogs represent. Hence, winery C uses Brian and Sharon's four pooches as the winery mascot that appears at the main entrance as well as on their website menus tabs, the pups on the labels and the paw prints on the menu.

Another relevant marketing strategy for winery C has been to make sure that every weekend there is something going on at the winery. Hence, the winery brings local musicians, creates food/wine tasting events and hosts charitable events among other things. Winery C keeps its website, Facebook , twitter, up to date in order to let everybody know about upcoming events. When Brian sends e-mails to the winery distribution list his approach is to share the experience that Winery C offers, the dream that it portrays and how winery gladly welcomes each of them.

Their website uses the latest technology and design. It is very appealing to the visitor since it is dynamic, with lots of videos, pictures, and useful information written in an engaging manner that gets one's attention. However, the website has a blog section in it that it hasn't been used since 2011. This is inconsistent with the whole web strategy.

Winery C has never tried newspaper and local print marketing since they believe that the marketing approach that attracts more people is the online marketing together with the word of mouth diffusion channel.

Winery C has participated in several competitions around the country in order to get its wine recognized and to network with other people in the sector.

#### 3.4.4.3.1.2.8 Demand and its Cycles

Winery C experienced an increasing demand growth during the first two years. In 2011 sales went down and the winery suffered from insufficient cash flow. In 2012 new strategies came into place and the winery started to increase its sales again.

Winery C also experiences the yearly seasonality and during the lower months tries to engage visitors providing interesting events and new experiences.

#### 3.4.4.3.2 Main Perceived Challenges by the Owner

The main external challenges identified by the winery are the distribution channels that make it difficult to reach all customers inside and outside the state. The grape provision difficulty is another big challenge since it is not profitable to grow grapes in Virginia. Finally, the new wineries closer to Washington DC may take part of their market.

The main internal challenges identified by the winery are winery capitalization (proper funds acquisition), winery financial management (investments and cash flow management), effective employee management so that each person's best skill can be exploited in the winery, and inventory management (need for right space and technology).

#### 3.4.4.3.3 Main Opportunities Perceived by the Owner

The winery identified its main external opportunities as the growing demand for wine in the area. The main internal opportunity identified by the winery is the potential for the new accounting system and its consolidation.

#### **3.4.4.4. Winery D**

##### *3.4.4.4.1 Winery D Background*

###### 3.4.4.4.1.1 Reason for Existence

Bettina was in a moment of life change after having worked as an investor for 21 years. A friend of hers suggested the idea of a winery and after some research and exploration she opened winery D in 2008.

###### 3.4.4.4.1.2 Winery Structure

###### 3.4.4.4.1.2.1 Vision and Goal

The winery's vision is to be the first choice in people's minds when it comes to spending time, enjoying good wine and combining good wine with food and art.

Their goal is to expand up to 10,000 cases or more per year, to narrow the wine selection offered and to expand the services that are provided through the winery. Bettina is considering the possibility of opening another winery in southern Maine as well.

###### 3.4.4.4.1.2.2 Mission and Values

Winery D mission is to provide memorable experiences to its visitors and to enhance community development and enjoyment of the arts.

Winery D values are nicely synthesized in its motto: Live your life. Be who you are. Drink good wine along the way.

###### 3.4.4.4.1.2.3 Employees and Departments



Winery D has 13 fixed employees and several seasonal ones. Bettina is the owner and operator. Aaron is the winemaker and Christina and Jeremy are winery assistants. Josh is in charge of the vineyard and the property. Tim is the vineyard assistant. Devon is in charge of events. Janice is in charge of merchandizing, and Michelle is merchandizing assistant. McKenzie is the wholesale partnerships representative. Abby is in charge of the numbers and special projects. Cathie is in charge of shipments and is the tasting room specialist; and Daniela is in charge of the social media and guest communications.

Winery D is a vertically integrated winery, it produces a small part of the grapes used in wine production on its five-and-a-half- acre vineyard, it produces all its wine, it sells it on-site, it self-distributes the wine throughout the state of Maine and it partners with VinoShipper for out of state online placed orders.

#### 3.4.4.4.1.2.4 Employee Management

Winery D has a very genuine approach to employees' management. Bettina is an open friendly person with whom people easily connect. Employees respect her for her business knowledge as well as for her generosity, her approachability, her enthusiasm and her skills for making people excel and give their best in their positions. As many employees have mentioned, they enjoy working with her and being part of winery D. They see lots of potential at both personal and winery levels.

One of winery D strategies is to gather all the personnel at the beginning of each year for a big meeting. The intention of this annual meeting is that every department can share with the rest their current situation, strengths, weaknesses and their vision for the coming year. By doing so each department develops a view of the whole winery and together they develop a shared view that aligns the departments' visions to the unified one so that they all work towards the same goals.

#### 3.4.4.4.1.2.5 Production Process and Technology Used

Winery D grows part of the grapes used in their wine production. The vineyard has been using a variety of technologies in order to get the most of its land. Since the vineyard is in the middle of heavy forestation and Maine experiences wet and humid summers with a very short growing season winery D grows cold-weather hybrids. In order to keep the animals away from the grapes winery D has moved from side-netting to full-drape netting and has stopped using bird-scare technology. In 2012 winery D started to hunt wild turkeys and in 2013 it also started trapping and removing raccoons.

In order to remove weeds, anthracnose, rose chafers and Japanese beetles the winery has sprayed round-up in the spring before bud break so that initial sod clumps were cultivable. The winery also used Makaze pesticide to keep the bugs away. In 2012 the winery also used an organic spray for the rose chafers together with Makaze for the Japanese beetles.

Winery D has enough space to reach its target of 10,000 cases per year. Since it is their target to increase production, new equipment will have to be bought, both for production and storage and more space will have to be available for the growing inventory. There is a small barn on the winery that is not being used for any relevant purpose that could be remodeled in order to satisfy part of these coming needs.

#### 3.4.4.4.1.2.6 Supply Channels, Distribution Environment

Winery D wine is sold at the winery and can be found in ninety-nine locations in Maine (some fine wine stores and restaurants). Winery D has to accommodate the wine shipment conditions of its state. Maine wine distribution does not work under the three-tier-system and the government contracts private business to do this task. Since September 2009, Maine wineries with a direct shipper licensee may ship up to 12 cases to a recipient address in Maine during a calendar year (Department of Public Safety Liquor Licensing and Inspection Division in Maine).

Winery D also ships its wine in the state of Maine and to the other states where wine shipping is allowed. The winery offers outside state shipment from orders that are placed at the winery as well as from orders that are placed online via the VinoShipper Firm (according to Vino Shipper wine delivery destinations).

#### 3.4.4.4.1.2.7 Marketing Strategies

Winery D has a very active and successful marketing department. Bettina has developed very successful relationships with other Maine business people and politicians that have helped to spread the word.

One of winery D's main marketing strategies is its state of the art beautiful and practical website. The website provides all the relevant information in a very well organized manner and it is delivered in a clear and elegant way that appeals to visitors. Furthermore, the website has lovely pictures and backgrounds that allow one to get a better idea of the winery atmosphere. Some videos would further enhance winery D's website.

Winery D's art appreciation and promotion via on-site exhibitions is bringing into the winery new guests and wine lovers that get to know about it via the state of the art winery website, via one of the online social media tools used by the winery (Facebook, twitter, or/and pinterest), or via flyers that the winery distributes in strategic locations.

Its unique shop with fine products to complement wine as well as charming wine-related items and cuisine information attract another group of wine lovers to the winery. Last but not least, the winery's beautiful atmosphere and views calls the attention to many via the wine labels that portray this feeling in their painteresque format.

#### 3.4.4.4.1.2.8 Demand and its Cycles

“D”’s demand has increased substantially since 2008. The winery experiences the seasonality cycle and hence the winery tasting room area is open from April through December and from January through March by appointment.

#### 3.4.4.4.1.2.9 Inventories

Winery D has sufficient space for its current production and demand. However, given the increase in production envisioned it would have to expand its inventory capacity. Given the increase in demand and the slower paced increase in supplies, inventories have fallen short on some occasions.

#### 3.4.4.4.2 *Main Perceived Challenges by the Owner*

The main external challenges identified by the winery are the bugs and animals that affect grape growing, the distribution of their wine to other states and especially the access to more effective online wine distribution companies. The main internal challenges identified by the winery are how to sell to other southern neighboring states and how to keep a more accurate accounting system so that no cases are lost during the year.

#### 3.4.4.4.3 *Main Opportunities Perceived by the Owner*

The main external opportunities identified by the winery are the growing demand for wine in Maine and the growing and potential demand in Maine states south of Main. The main internal opportunities identified by the winery are its young crew of committed people with a long term vision, and the possibility of opening a new winery in the south of Maine.

### **3.4.4.5 Winery E**

#### 3.4.4.5.1 *Winery E Background*

##### 3.4.4.5.1.1 Reason for Winery Existence

The reason for Winery E existence is the materialization of Martin's hobby. When Martin, the founder and owner of winery E retired he decided to make his hobby a reality under a business format so that later on it could become the source of income and passion of his grandchildren. Martin knew about the cave and he envisioned linking the winery to this unique place. When he retired the opportunity to buy the cave land came up in 1995 and Martin started the business in 2001.

#### 3.4.4.5.1.2 Winery Structure

##### 3.4.4.5.1.2.1 Vision and Goal

Winery E's vision is not clear. They see that they want to grow but they do not know how and by how much.

Winery E's goal is that the winery becomes profitable for Martin's grandchildren.

##### 3.4.4.5.1.2.2 Mission and Values

Winery E does not have a well-defined mission. The winery's mission seems to be to provide prosperity to the family. The winery transmits the values of family caring, tradition, appreciation for natural well-crafted products, respect for nature, and support for charitable events.

##### 3.4.4.5.1.2.3 Employees and Departments

Winery E is owned by Martin and Mary Jo. Martin is in charge and supervises all the winery departments but he is especially in charge of the vineyard, the wine production process and accounting. Winery E has employed Mark since 2009 when the winery management surpassed Martin's capacity and he needed help with grape pruning and inventory management. Martin's daughter, Laura is also employed by the firm but she doesn't receive a market salary yet, making her situation difficult to manage. Laura is in charge of the sales part of "E", working and supervising the tasting room area, the website, the wine club and the events. The tasting room area also employs a full time person, during the

whole season and extra servers during peaks. During summer winery E also hires a person that drives a van down and up the cave for guests that do not feel like walking. Finally, Mary Jo, Martin's wife, helps make biscotti and other special Italian foods to be sold at the winery. Mary Jo does not receive any monetary compensation for that.

#### 3.4.4.5.1.2.4 Employee Management

Winery E is operated under a family business structure and environment. This situation means that Martin work without receiving any monetary compensation from the winery and that Laura is underpaid for the time being. Even though Laura is Martin's daughter and believes in the project, she is also a mom and has other responsibilities. Being underpaid does not seem to be beneficial for the, family and the winery. Martin and Laura's relationship is very good and communication flows easily between them and they work quite effectively together.

Laura seems to have a good relationship with the fixed tasting room employee, and Martin seems to have a good relationship with Mark, the vineyard and inventory helper.

#### 3.4.4.5.1.2.5 Production Process and Technology Used

Winery E is a vertically integrated firm; it produces all the grapes that are used in the wine production. The technology used in the vineyard is allowing effective management. The winery has several stainless steel tanks that allow the production of around 9,000 cases of wine per year. Winery E has state of the art bottling machine that allows it to bottle ten bottles per minute. The machine also puts the labels on each bottle automatically. Winery E has sufficient space dedicated to the lab and management as well as wine production and storage according to the current maximum level of wine production (around 9,000 cases per year).

In general Winery E is adequately equipped for producing 9,000 cases of good wine effectively.

#### 3.4.4.5.1.2.6 Supply Channels, Distribution Environment

Winery E sells most of its wine on-site, and the remainder is through retail stores and few from the online store in the winery E website. Winery E partners with a regional wholesaler in order to distribute its wines to retail stores since Missouri functions under the three-tier system. Winery E sells its wine thirty percent discounted to the wholesaler.

Winery E would like to sell its wine to local restaurants and local stores that promote local food and quality products but since it has the contract with the wholesaler it is not allowed to do so by itself or via another distributor.

#### 3.4.4.5.1.2.7 Marketing Strategies

Winery E has focused more on the production side of the business than on the demand side. As a result, "E"'s marketing strategies have not achieved the desired results. The winery's main marketing strategies rely on the promotion of its website, being part of the wine trail in the area and being part of the Missouri Wine and Grape Board (MWGB) so that further insights about the market and the promotion of the winery can be gained.

#### 3.4.4.5.1.3 Winery Unfolding During the Last Years

Winery E has been dedicating its initial twelve years to developing the vineyard and its production capacity, bottling capacity and inventory capacity. Winery E invested in the expansion of its tasting area in 2009 as a strategy to increase its sales. However, the marketing and sales parts of the winery together with the winery identity and mission as well as its staff have not received sufficient investment. The winery has experienced profits every year and part has been reinvested in the vineyard or production process. Now the winery sees the need to redirect its identity side and its sales side as well as the proper management of its employees.

#### 3.4.4.5.2 Main Perceived Challenges by the Owner

The main external challenges identified by the winery are its wine distribution, and market competition, especially the competition with the other wineries that are part of their wine trail. Winery E's managers feel that since the winery is the first one in the trail and since more wineries have joined the trail, people now have insufficient time to visit them all and they rush their visits, especially in the first winery, their winery.

The main internal challenge identified by the winery is that they do not have a clear strategy for achieving the sales volume that they would like.

#### *3.4.4.5.3 Main Opportunities Perceived by the Owner*

The main external opportunity identified by the winery is that there is a growing demand for local food and local products in their area, a growing market to satisfy.

The three main internal opportunities identified by the winery are having a real cave in the property, having a unique Italian flavor in the family that is carried in the products that they offer, and the quality of their products.

#### **3.4.4.6 Winery F**

##### *3.4.4.6.1 Winery F Background*

###### 3.4.4.6.1.1 Reason for Existence

Chuck is the founder and one of the owners of winery F. Chuck has a passion for wine and had a vision for his family's land and shared it with the rest of the family members. He saw a beautiful, high class winery at the top of the hill and the vineyards at the entrance to the property. One of Chuck's sons had been working in sales for many years, another one worked in international finance, and together with other business-minded friends of the family they put together the business plan and found the financial backing to make it happen. In July 2008 Winery F, owned by the family and fifteen investors, opened for business.



#### 3.4.4.6.1.2 Winery Structure

##### 3.4.4.6.1.2.1 Vision and Goal

Winery F's vision is to keep growing its sales, both on-site and outside the winery by providing high quality products, scenes and personalized experiences.

Winery F's specific current goals are to get the maximum use out of its facility and space so that it can satisfy the needs of various customers at the same time; and to promote and provide more services for businesses meetings and workshops.

##### 3.4.4.6.1.2.2 Mission and Values

Winery F's mission is to provide an excellent experience to its customers by offering high quality products and atmosphere. Winery F is also committed to advancing its partnership with local farmers and growers since it embodies its vision of strong farms, thriving local food economies, and healthy communities where farming is valued as central to their heritage, and their future.

Winery F main values are quality, elegance and continuous adaptation.

##### 3.4.4.6.1.2.3 Employees and Departments

Winery F is a vertically integrated winery. It produces part of the grapes used to produce part of its wine, and it bottles and stores its wine on the property. Another big part of winery F wines comes from California directly bottled. The winery also has a restaurant and a deck where live bands perform.

Winery F employs nine fixed employees and ten to fifteen extra servers to cover all shifts in peak seasons. Chuck is the winery CEO and managing partner. Tom is the winemaker and vineyard manager. Mandi is the chief operating officer and Corey is the executive chef. Biron is the marketing manager. Lynee and Bonnie are the house managers. Christie is the events manager (weddings, meetings and

parties, on-site farmer's market, and tours) and Trevor is in charge of social media, the website, music and bar.

The main issue with having the seasonal servers is that not that many people live close to the winery. However, most of the servers return for employment each season.

#### 3.4.4.6.1.2.4 Employee Management

Winery F has grown substantially since its beginning and most of the energy has been directed toward ensuring the wine supply and the comfort and service of its on-site guests. As a result, each employee has been focused on the tasks that he or she is in charge of, and the overall winery's vision and cohesion among departments and activities has not been achieved. When winery F's managers realized this they started holding monthly meetings in order to communicate the current situations facing the winery to all employees and to enhance their shared vision for the winery. Nonetheless, employee's management can be further enhanced by providing self-managing and dialogue tools to its employees to reduce their stress and to enhance the relationships among its employees and its guests.

#### 3.4.4.6.1.2.5 Production Process and Technology Used

Winery F vineyards occupies five acres. The cultivation technology used is effective for its size. The main issues faced have been the peak weather temperatures that have ruined twenty percent of the yearly harvest and the increase of thirsty animals during hot summers.

The technology used for producing, bottling and storing the wine seems to be effective for the amount of wine produced. The winery does not have any expectation of increasing the amount of wine produced on-site.

The technology used in the tasting room for registering sales works well and the accounting records are properly kept. In the same way the kitchen is functioning properly and it seems that there are no constraints in that area of the winery.

#### 3.4.4.6.1.2.6 Supply Channels, Distribution Environment

Winery F main sales are produced on-site. However, the winery also sells online and self-distributes it in the neighboring regions (however the website does not include a page to place an order). The winery also self-distributes the wine to its club members quarterly via UPS. The winery is not working yet with any distributor since they don't find it beneficial given the three-tier-system in Missouri. However, winery F sees the opportunity to sell its wine to other states and regions in Missouri. Winery F wines can be found in eleven select restaurants and two retail stores in the St. Louis area.

#### 3.4.4.6.1.2.7 Marketing Strategies

The winery has had a marketing person since its beginning. Marketing strategies are a balance between traditional and new sources. Winery F sees the website design and its friendliness as key marketing strategies. It also focuses on their e-mail list, and on social media as well as printed ads in magazines, radio ads and a billboard. The two social media channels used by the winery are Facebook and Twitter. These are used only moderately.

Winery F's website is visually appealing but does not use recent web features. The information is presented in a friendly way and one can gain a general idea of "F"'s flavor and what to expect at the winery. However, the marketplace features of the website not operative. The gift shop tab indicates that the visitor can find wonderful items on the marketplace but there is no place to browse these items. Also, the design of the upcoming events part of the home page is not compatible with the elegance of the rest of the website and it diminishes the website's beauty.

Winery F transmits its values in the mottos used in its website in order to connect with visitor. These are:

Enjoy our lush vineyards and scenic lake

Relax in our spectacular tasting room

Daily dining and special food offerings

Nights come alive year-round at Chandler

Magical weddings are our specialty

#### 3.4.4.6.1.2.8 Demand and its Cycles

Winery F's sales have increased between 23 percent and 30 percent every year since its opening. The winery experiences the yearly seasonal cycles and tries to offer activities that are enjoyable during the slower seasons. The same strategy is used in order to offset the weekly cycle.

#### 3.4.4.6.1.2.9 Inventories

Winery F has sufficient inventory of its own wine and it ships the California-produced wine two to three times a year in order to keep an effective inventory.

#### 3.4.4.6.1.3 Winery Unfolding During the Last Years

Winery F has been very successful during its first five years. It has built a good reputation that has helped its market expansion. Supply and demand seem to be properly balanced and strategies for further profitability are being considered. One issue that has not yet been considered and that could contribute to a higher quality atmosphere and better relationships is the application of employee management and dialogue techniques to enhance all the winery relationships.

#### *3.4.4.6.2 Main Perceived Challenges by the Marketing Manager*

The main internal challenges identified by the winery are its ability to remain open to the public while having a wedding or event going on at the same time, that is how to achieve better utilization of their facilities while satisfying customers' needs.

#### *3.4.4.6.3 Main Opportunities Perceived by the Marketing Manager*

The main external opportunities identified by the winery are a possible private label for a grocery chain and/or country clubs. The winery is considering providing around 5,000 cases to private labels and restaurants. Another external opportunity is the winery's location. It is the first winery on the way south from St. Louis and it is the only winery for the local people in the region. Finally, the winery sees its good relationships with local politicians as another good external opportunity.

The internal opportunities identified are promoting more corporate events. Another internal opportunity lies in expanding the deck so that more people can enjoy the outdoors. Similarly, winery F sees the opportunity for remodeling the house as another tasting room. New activities like "bocce ball court" and leagues are another option. Finally, the winery is considering the promotion of the historical heritage of winery as well as the family history as a way to engage some guests interested in these aspects.

### **3.4.4.7 Winery G**

#### *3.4.4.7.1 Winery G Background*

##### 3.4.4.7.1.1 Reason for Existence

Jim learnt about the wine making process by helping an Italian friend of his a long time ago and started making very small batches of wine in 1962. In October of 1998 Jim and Jan bought the house where the winery is currently located because they liked it. They didn't have any intention of having a winery then. At the end of 1998 Jan suggested the idea of starting a B&B since the house has many rooms and she enjoys cooking. On St Patrick's Day of 1999 the B&B was opened. That same year Jim decided to expand his small home wine production to a business and planted the first grapevines. In 2003 the first wine was produced.

##### 3.4.4.7.1.2 Winery Structure

###### 3.4.4.7.1.2.1 Vision and Goal

Winery G's vision is to develop a value added farm that can be passed on to the family.

The goal since its beginning has been to produce 2,000 cases (5,000 gallons) per year. Currently this goal has become more specific. Their current goal is to distribute between 1,000 and 1,500 cases per year and to sell between 500 and 1,000 cases per year on-site.

#### 3.4.4.7.1.2.2 Winery Mission and Values

Winery G's mission is to provide quality wine without sulfates and a friendly cozy environment where people feel at home and can enjoy homemade food and nice views.

Winery G's values are quality healthy products and building friendly relationships that make the experience truly unique.

#### 3.4.4.7.1.2.3 Employees and Departments

Jim is the wine-maker and vineyard manager and Jan is in charge of the B&B and restaurant. One of their children is in charge of their Facebook page but it has not been used since April 2012.

Winery G produces part of its grapes and handles the wine production process, bottling and inventory on the property.

The winery used to provide complete catering for weddings. However, during the last two years it has stopped offering these services because they require too much work and they do not generate that much or any profit. Currently Winery Ghosts between 20 and 25 weddings a year. Since the financial crisis winery G has reduced their charge for weddings from 787 to 500 dollars.

#### 3.4.4.7.1.2.4 Employee Management

Jim and Jan enjoy a healthy relationship that allows them to run the businesses effectively. Both are paid by the firm and can live from it and invest back into the business.

#### 3.4.4.7.1.2.5 Production Process and Technology Used

Winery G's vineyard was planted in 1999 and has 4 acres of wine grapes. It grows 8 varieties that produce 80 barrels of naturally occurring wine without sulfates (since sulfates are thought to be what create people's headache after drinking wine). The winery also buys 30 tons of grapes from others. All the wine stays in the barrel for at least 2 years. Only French Oak barrels are used to store the wine. The winery equipment is adequate for the volume that it produces. Since winery G does not intend to increase its production the current technology should suffice the winery needs.

Winery G uses the Quicken accounting software to keep its records. Since the winery does not have a cash register connected to its accounting records all the transactions have to be entered manually. Jim finds this process is very time consuming. One of the strategies to reduce the time spent in this task has been to price all the wine at the same price.

#### 3.4.4.7.1.2.6 Supply Channels, Distribution Environment

Winery G has been selling its wine mainly on-site but has recently started distributing wine via a distributor firm that gets thirty percent discount on the price. The winery also distributes a small part of its wine via its online store, this wine is being distributed by a small wholesaler and it reaches customers in most states. Winery G is facing some problems with the wine distribution through its wholesaler because of the three-tier-system that Missouri uses. The winery would like to distribute its wine to local restaurants and food stores that appreciate quality healthy wine but given the contract restrictions with its distributor it cannot reach these other markets.

#### 3.4.4.7.1.2.7 Marketing Strategies

Winery G has tried several marketing strategies but it has found none of them entirely successful and beneficial. One of the main reasons for the lack of success of these marketing strategies is the lack of a clear business vision and identity—values to transmit that would connect with people.

Another important aspect is that the winery name is not directly related to a winery and the winery does not have a logo.

The strategy to promote the winery and B&B via social media, particularly via Facebook was successful while the page was kept up to date and while they provided feedback to its guest's comments. Since April 2012 winery G Facebook page has been inactive and this reduces the appeal to possible new guests.

Winery G website is somewhat user friendly. It presents most of the information that a visitor may be looking for but its structure is not particularly user-friendly. Inside some tabs there are other tabs that one is not aware of right away. Hence, the visitor can miss some information if he or she does not click on the appropriate tabs. Also placing information on the online store directly on the home page is overly aggressive as a marketing strategy. Information, pictures and/or videos about the owners and the family environment would help in presenting the winery.

Having a quantity discount has proved to be a useful marketing strategy. However, selling all the wines at the same price of \$26 per bottle does not seem a successful marketing strategy since it reduces the value of the higher quality wines and it gives the impression that quality distinctions are not appreciated by the winery. Similarly, the winery has not updated the wine prices since 2000. This strategy is also not beneficial in creating a sense of professionalism and appreciation for the products offered. Finally, the lack of space dedicated to wine tasting means that guests who have enjoyed the experience are less likely to come back with a bigger group since there is not sufficient space for larger groups.

#### 3.4.4.7.1.2.8 Demand and its Cycles

Winery G's wine sales have increased together with the level of wine production. In the first year production were 1,000 gallons, the second year 2,500 gallons and currently the winery produces at



its desired capacity of 5,000 gallons. The strategy of selling more outside the winery is designed to reduce the fluctuations in wine demand. In the last two years the winery has noticed that people are not planning ahead and variability in trips and sales has increased.

The restaurant is currently open by reservation only and it does not draw that many people. The B&B is helping to offset the wine demand cycles and many repeat their visit.

#### 3.4.4.7.1.4 Recent trends

Winery G has been having a decent trajectory during the last decade. However, the firm is reaching a turning point and new strategies must be implemented in order to offset sales fluctuations and ensure its sustainability.

I edited to this point.

#### 3.4.4.7.2 Main Perceived Challenges by the Owner

The main external perceived challenges by the owner are demand fluctuations (even though that this challenge is also an internal one, since the winery affects the level of its demand. However, Jim sees it more as something “external” that he has not that much control over). Another challenge identified is the constraint that the contract with the distributor creates since Jim cannot sell its wine directly to restaurants.

The internal challenge identified by the winery is its location; the winery is far from a frequently visited zone.

Jim was not aware of all the other internal challenges identified in the marketing section.

#### 3.4.4.7.3 Main Opportunities Perceived by the Owner

The main external opportunities identified by the winery are the demand increase for local foods and the demand increase for healthy, natural products.

The main internal opportunities identified by the winery are the possibility to put a spa in one of the B&B bedrooms that is currently sharing the bathroom with another one.

### **3.4.4.8 Winery H**

#### *3.4.4.8.1 Winery H Background*

##### 3.4.4.8.1.1 Reason for Existence

In 1970, these entrepreneurs believed that Missouri had a great potential for bringing back its pre-prohibition era wine legacy. As a result they moved to this region where Italian settlers planted vineyards during the 1800s, and started winery H, producing 3,400 cases in its first year. Today winery H celebrates more than forty years as a family owned and operated winery. Since 1995 the winery has been managed by individual H, who holds a MBA and several years of work at a financial consulting group, as well as several years of for the State of Missouri.

##### 3.4.4.8.1.2 Winery Structure

###### 3.4.4.8.1.2.1 Vision and Goal

The initial vision of winery H was to make good wine and to have a good time. When Winery H took over the winery management in 1995 he saw the great potential for growth and the winery vision shifted towards expansion around the US and beyond.

One of the current goals for Winery H is to expand its sales volume in retail outlets.

###### 3.4.4.8.1.2.2 Mission and Values

Winery H's mission has evolved as it has grown from a traditional small family business to a large family firm. However, the underlying winery mission is to produce good quality wine from a variety of fruits while being financially self-sufficient.

Winery H's values have been expanding as the firm has grown. Currently, the winery is developing its triple bottom line strategy so that it also contributes to the well-being of Missouri children and the improvement of the environment. The main values that winery H transmits are effectiveness, growth, flexibility, innovation, customer care and willingness to contribute to the creation of a better world.

#### 3.4.4.8.1.2.3 Employees and Departments

Winery H employs more than one-hundred people between its central building and its own retail/tasting room stores. The winery is vertically integrated and all the steps, from grape growing to bottling and on-site selling, are managed by the firm. The winery hires seasonal sales people during pick times.

#### 3.4.4.8.1.2.4 Employee Management

Winery H has noticed that its trajectory has been mainly production oriented from its beginning until 2010 when sales fell. From 2010 to 2012 the winery has focused mainly in its marketing, branding, developing its values and transmitting these to the whole firm. Now, Winery H's management is noticing that the next step is to redirect the winery's attention to its employees and see how to develop the effective relationships with them so that they fully connect with the winery, grow personally, and bring their best to the winery. Hence, they are reconsidering their employee training procedures and mentoring programs, to identify and develop the effective communication skills and channels, as well as providing more effective incentives.

#### 3.4.4.8.1.2.5 Production Process and Technology Used

During its first twenty five years Winery H grew from an annual production of 2,800 gallons to 25,000 gallons. Between 1995 and 2000 Winery H's production increased ten-fold. As a result, the

winery grew its vineyard acreage, enlarged the cellar, added a twist-cap bottling line, expanded the warehouse, and increased its distribution network. All these changes made winery H one of the most modern and best-equipped wineries in the state. In 2013, winery H will produce more than 200,000 cases (approximately 500,000 gallons) of wine.

Winery H uses state of the art technology in most of its production process line. The winery is currently gathering data from its vineyards in order to improve management. One of the current targets is to better estimate its cash flow so that all margins can be managed. The idea is to develop a new financial view in accordance with Porter's work so that some money can be saved and invested in places where it is most needed.

In 2013 Winery H introduced its mini-bottles of 187ml and plastic material in order to satisfy other needs related with outdoors activities, picnics and canoe trips. The winery has also introduced a new technology in order to distinguish some of its wines by the red wax fancy cork cover.

#### 3.4.4.8.1.2.6 Supply Channels, Distribution Environment

Winery H has expanded its supply channels first in Missouri and then in other states. Given Missouri's three-tier wine distribution system, winery H partners with a wholesaler in order to get its wine into retail stores in Missouri as well as in the nineteen other states that allow the sale of wine from outside states.

Winery H also has its own tasting room areas in other places around Missouri as well as in the main facility where the wine is produced. Finally, people can order wine through their website as long as they live in one of the nineteen states where the winery currently sells.

The winery website has a store locator option where the visitor can type his or her zip code and the nearest local retailers will appear in a Google map together with the local retailers address and phone.

#### 3.4.4.8.1.2.7 Marketing Strategies

Winery H logo is a schoolhouse that honors the Italian settlers who first developed vineyards in Missouri. The original schoolhouse built to educate their children still stands today adjacent to the winery's vineyards.

In 2010 winery H experienced a drop in sales and they decided to hire a marketing firm in order to better understand the market and its clients and to see how to effectively communicate its values through its image. It was a crucial point for the winery since its attention shifted from a production orientation to a marketing orientation. Winery H first decided to update its main product lines, the ideas behind each line, the values that winery H represents, what brand would fit each line according to their personality and to convey these ideas to the marketing firm so that they could help it to materialized. During this process the winery researched its competitors, especially those selling fruit wine in other states. The winery also analyzed the sales patterns from the wine sold through the wholesaler and made projections by state and regions.

Winery H website was improved in 2012 and currently is more user-friendly. The winery started a blog on its website in January 2012 that keeps the visitors informed about all the recent winery news and suggests recipes and ideas on how to complement its wines. The blog also includes pictures from the winery in Flickr so that people can have a more visual idea of the place. Winery H uses several social media tools such as Facebook, Twitter, Pinterest and YouTube in order to engage with its customers and reflect another side of the firm.

An indirect way for winery H to expand its network and reach new guests has been the social program started in 2008 dedicated to reducing childhood hunger by raising money for the Buddy Pack program. This 2013, winery H expanded this activity and invited its customers to be part of the first annual campaign to raise money for palliating childhood hunger in all Missouri. In 2013 the campaign

has raised more than \$14,000 in support for child feeding programs throughout the state of Missouri. This money has been divided among the six food banks in Missouri.

Finally, winery H is expanding its triple bottom line business consciousness and in 2013 it initiated two strategies in order to enhance the cleanup of the Missouri river and to reduce its environmental impact. The first environmentally friendly strategy has been collaboration between Winery H and the Missouri River Relief organization. Each bottle of wine sold during the months of August and September at participating Missouri retail stores will contribute to Missouri River Relief's work.

The second strategy has been to introduce new eco-friendly pouches for its two popular Friendship School line of wines. These new lines of products, besides making it easier to enjoy winery H wine in outdoor settings, also gets the attention of environmentally concerned customers. As the manager mentioned "Sustainability is an important part of what we do at winery H. These eco-friendly pouches help us make the point that less really is more. Reduced packaging takes less energy to produce, fewer materials to manufacture, and takes up less space during transportation."

#### 3.4.4.8.1.2.8 Demand and its Cycles

Winery H grew from an annual production of 2,800 gallons to 25,000 gallons between 1970 and 1995. Sales took place mainly in the tasting room area and surrounding towns. Between 1995 and 2000 winery H production multiplied increased ten-fold and reached 100,000 cases as the winery accessed new markets. Demand kept growing until in 2010 and had reached almost 500,000 cases at which time demand went down. Winery H noticed that markets got thinner and the response was to reinvest in marketing. Today sales are approximately 500,000 from nineteen states.

#### *3.4.4.8.2 Main Perceived Challenges by the Owner*

The main external challenges identified by the winery are the power of key retailers under the three-tier-system. Winery H has been working with politicians in order to modify the regulation but the market power imbalance is still substantial.

The main internal challenges identified by the winery are: a) personnel management, b) how to allocate capital wisely, c) identifying how to properly invest in wholesales so that sales in the other eighteen states increase, d) identifying how to increase their vineyard's productivity using new data collected from the vineyards, and e) identifying how to develop more flexible production with higher margins.

The winery has always been internally financed. If winery H wants to expand more substantially they may need to find external investors.

#### *3.4.4.8.3 Main Opportunities Perceived by the Owner*

The main external opportunities identified by the winery are to develop information for the whole value chain and hence to be able to establish the profitable collaborations across the chain.

The main internal opportunities identified by the winery are the well qualified people in the team that can enhance the effectiveness of the firm at many levels.

#### **3.4.4.9 Winery I**

##### *3.4.4.9.1 Winery I Background*

###### *3.4.4.9.1.1 Reason for Winery Existence*

Gene had produced wine as a hobby at home for four years, until one day some of his friends told him that he should open a business. In April 2011 the licensing process was done and winery I opened its doors. Gene likes to produce dry wines and to experiment and is happy with the new adventure. He keeps his teaching job at a nearby institute but Susan, his wife, quit her teaching job in order to work full time at the tasting room.

### 3.4.4.9.1.2 Winery Structure

#### 3.4.4.9.1.2.1 Vision and Goal

Winery I managers' vision is to expand the winery profitability and success for a few more years so that they can produce approximately \$100,000 (a production increase of 20 to 25 percent) and then sell it and retire.

The winery's current goal is to get the right equipment for producing different batch sizes and to expand its deck.

#### 3.4.4.9.1.2.2 Mission and Values

Winery I's mission is to provide a beautiful space where people can relax and enjoy fine wine and nice people.

Winery I's main values are hospitality, quality and scenic beauty.

#### 3.4.4.9.1.2.3 Employees and Departments

The winery employs three people. Gene, the wine-maker; Susan, who is in charge of the tasting room, the website and Facebook; and Ben who works at the tasting room and is in charge of the events.

#### 3.4.4.9.1.2.4 Production Process and Technology Used

The winery produces some of the grapes used in the production process. The grapes are grown on the property where Gene and Susan live and cannot be seen from the winery. The rest of the grapes are either bought on the spot market or acquired from grape growers via informal contracts. Winery I knows that grape growers have to first satisfy the needs of the big wineries and hence rely more on the spot market.

The winery produces around 1,500 to 2,000 gallons per year of mainly red wine. Gene does not like to produce sweet wine and they buy it from large wineries. The winery uses stainless steel tanks for



the white wines and barrels for the red wines. Winery I's equipment is not yet the adequate one for its production and more space in the production area is needed as well in order to expand the production to the desired level.

Winery I partners with another winery in order to crush the grapes and bottle the wine when they have to bottle large amounts. Fermentation always takes place at their location.

Winery I property was under a lease for the first two years but one and a half years into the contract the winery was able to buy the property. The winery's annual expenses are high, around \$70,000 and they do not know how much they need to sell in order to break even. Their target is to reach a sales volume of \$100,000.

#### 3.4.4.9.1.2.5 Supply Channels, Distribution Environment

The winery sells most of its wine on-site during normal operating hours or during the private events hosted there. The winery also takes part of several events in the community and surroundings in order to be part of the community and to let more people know about the winery.

Given the three-tier-system in Missouri and the small production level the winery does not work with any wholesaler to distribute its wine and it does not self-distribute its wine either.

The winery is open only until 6pm to keep the status out of "night bar".

#### 3.4.4.9.1.2.6 Marketing Strategies

The winery participates in local and regional events and wine competitions. It also organizes events at the winery in order to promote its wines. The winery brings live music to the deck so that people can get a wider flavor of Missouri culture. Gene has also participated in radio shows and shared his wine understanding and stories. The winery is also part of the wine trail in that region and the winery is promoted by this channel as well as by the other wineries nearby and the main Missouri wine related websites ([visit.missouri.com](http://visit.missouri.com) and [missouriwine.org](http://missouriwine.org)). The winery finds the new marketing channels

related with the Internet much more effective than the typical newspaper ads, prints, or radio commercials.

Their website conveys all the information that the visitor may be looking for in terms of wines offered but it does not explain the history of the winery and its owners and hence it lacks the emotional component that makes him or her decide to visit the winery. Furthermore, the website is not very visual. A picture in the home page or a video would increase the visitor's desire to continue exploring the site. It would be especially effective, if pictures or videos showed the beauty of winery tasting room and deck as well as the friendliness of their owners and staff. The website has a gallery tab that shows the tasting room and deck but the human side of the winery is missing. The names of the owners or the name of the person to contact are not included and this is very important in order to create a personal connection with the website visitor. Finally, the website has the winery Facebook icon so that people can get a more personal feeling of the winery via Facebook. The Facebook page is active and all the activities and news are hosted there. It seems that this tool is working very well for winery I. Currently, the News tab on their website has just one news item from 2011. This tab could be combined with the Calendar tab since all the upcoming events are visible at the website home page.

#### 3.4.4.9.1.2.7 Demand and its Cycles

Winery I has two years of operation. So far sales have been increasing and the main cycles experienced have been the typical annual and weekly cycles. The winery is participating and promoting events in the winery and the city in order to offset these cycles.

#### 3.4.4.9.2 Main Perceived Challenges by the Owner

The winery's main internal challenges are: a) to identify and acquire the right equipment size; and b) to expand their marketing and customer base to the neighboring regions, they would like to connect with the Columbia and St. Louis markets.

#### *3.4.4.9.3 Main Opportunities Perceived by the Owner*

The main external challenge identified by the winery is that they are 30 minutes away from the closest Walmart yet people who come to visit the winery are reluctant to buy their snacks or souvenirs because they cost more than at Walmart.

## CHAPTER 4 : ANALYSIS AND RESULTS

This chapter presents the empirical results from the study of each winery. For each winery, first a market study is presented that contextualizes the winery environment. Then the main perceived challenges by the winery managers are presented. The reference modes<sup>6</sup> for each challenge identified are drawn and the dynamic hypotheses related to each reference mode are posited. The next step in the analysis is the development of the causal loop diagrams related to each dynamic hypothesis and their discussion. Additional insights related to each winery's specific challenges that are not addressed in the causal loop diagrams are suggested as well. The simulation model is then used to evaluate the effect of the initial level of key intangible variables on the alignment between winery goals and customer preferences of small wineries. Finally, given the nature of the main challenges that the nine wineries have identified and the nature of the existing challenges that the nine wineries are not completely aware of but that have been identified by the researchers, the empirical research is able to contribute to the validation or rejection of some of the propositions presented above.

### 4.1 Winery A

#### 4.1.1 Winery A's Main Perceived Challenges

Winery A has been experiencing a reduction in its sales during the last two years 2011 and 2012. The main perceived challenges are:

- 1) to increase its sales without having to partner with a wholesaler.

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<sup>6</sup> As Khan, McLucas and Linard posit: "Reference modes are the patterns of dynamic behavior produced by feedback structures linking variables considered key to a specific problem" Khan, N., A. McLucas, et al. (2004). Development of a Reference Mode for Characterisation of Salinity Problem in the Murray Darling Basin 22nd International System Dynamics Society Conference, Oxford, England, UK.

2) to increase its on-site sales specially when the weather is not sunny.

#### 4.1.2 Winery A's Reference Modes

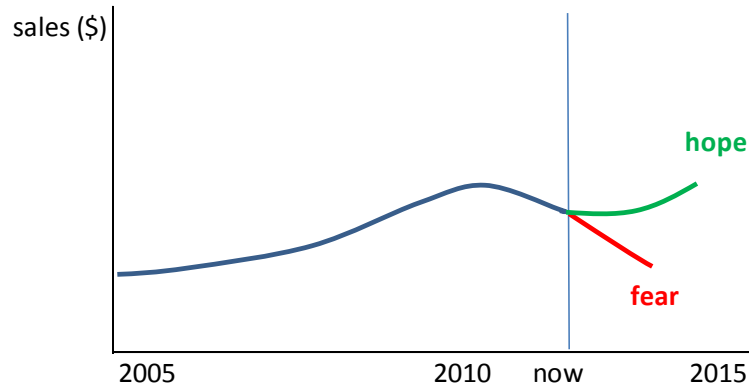


Figure 4.1.1: Winery A Sales Reference Mode

Figure 4.1.1 indicates the sales trajectory experienced by the winery A since its beginning. In 2011 sales dropped and in 2012 they fell again. The winery planted three plum trees in 2011 and bought a tractor in 2010 in order to work its fruit trees. The winery did not take any strategies to push the demand either on-site or outside the winery. For now, one of the winery's preferences is to be debt free and to "pay as you go". Currently, the managers are concerned that its sales volume may continue decreasing as it has during the last two years. A limiting factor is that they do not have a clear vision of the business for the coming years since Brian may retire and it is not clear that a son will want to continue the business. On the other hand, Brian does not see himself partnering with anybody outside the family.

Figure 4.1.2 indicates the trajectory of wine produced by the winery. In 2011 the winery produced at its maximum capacity. In 2012 after experiencing a decrease in sales the manager decided to reduce production until a clear sign of demand increase was evident. For a complete winery description see section 3.3.4.1.

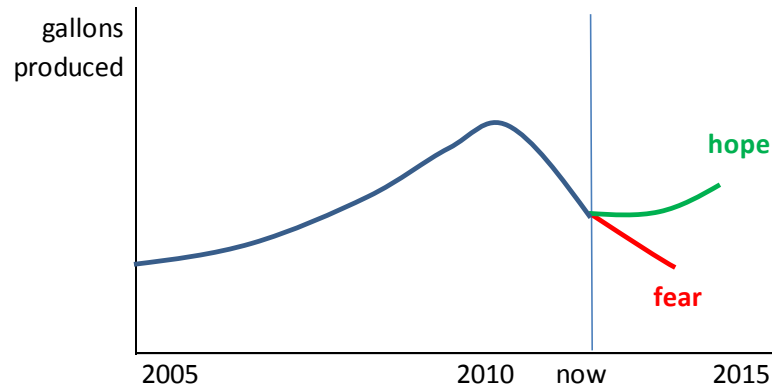


Figure 4.1.4.2: Winery A Gallons Produced Reference Mode

### 4.1.3 Winery A's Dynamic Hypotheses

Winery A's dynamic hypotheses are:

H1: The lack of a business vision is enhancing the reduction in sales.

H2: The tendency to focus more on the production side than on the demand side of the winery is exacerbating its sales reduction.

H3: The lack of adequate investment is exacerbating the declining winery profits.

### 4.1.4 Winery A's Causal Loop Diagrams and Discussion

The three dynamic hypotheses are represented in the causal loop diagrams below.

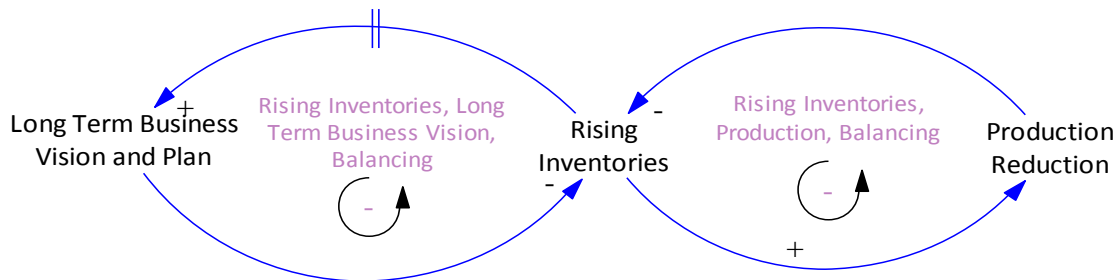


Figure 4.1.4.3: Winery A's Dynamic Hypothesis 1 Causal Loop Diagram

Figure 4.1.3 indicates what it is called a “shifting the burden” behavior in system dynamics language (Senge 1991). The winery response in the face of rising inventories is to reduce production and match demand (the negative balancing feedback loop on the right) instead of considering other more structural responses that foment the winery long term vision and plan in order to address the

problem (the negative balancing feedback loop with a delay on the left). Since structural strategies take a longer time (represented by the short double lines crossing the arrow that goes from Rising Inventories to Long Term Business Vision and Plan) a common behavior experienced in the face of challenges is “to shift the burden” to “simpler solutions”.

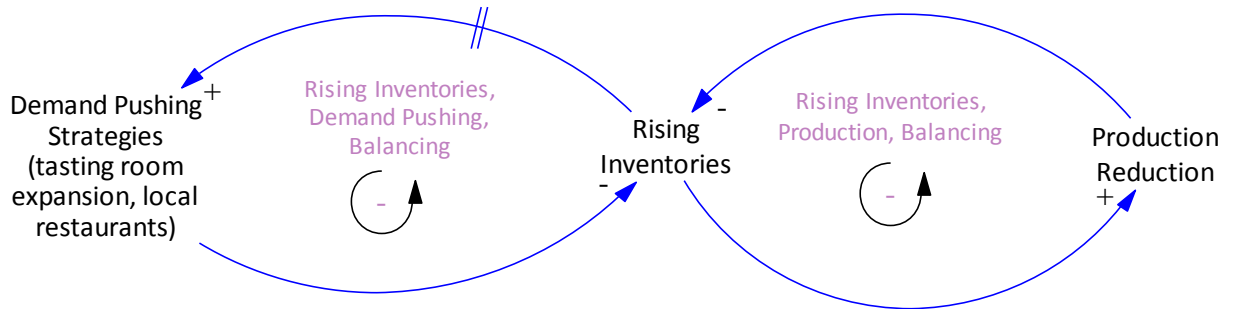


Figure 4.1.4.4: Winery A's Dynamic Hypothesis 2 Causal Loop Diagram

Figure 4.1.4 above indicates another shifting the burden behavior. In this case, winery A focuses on reducing its production given the sales decrease (symptomatic solution, negative, balancing feedback loop on the right) instead of seeking more structural strategies that would bring sales up like expanding the tasting room area (currently less than 20 square feet), and expanding the network of local restaurants that sell “A” wine (fundamental solution, negative balancing feedback loop with a delay on the left).

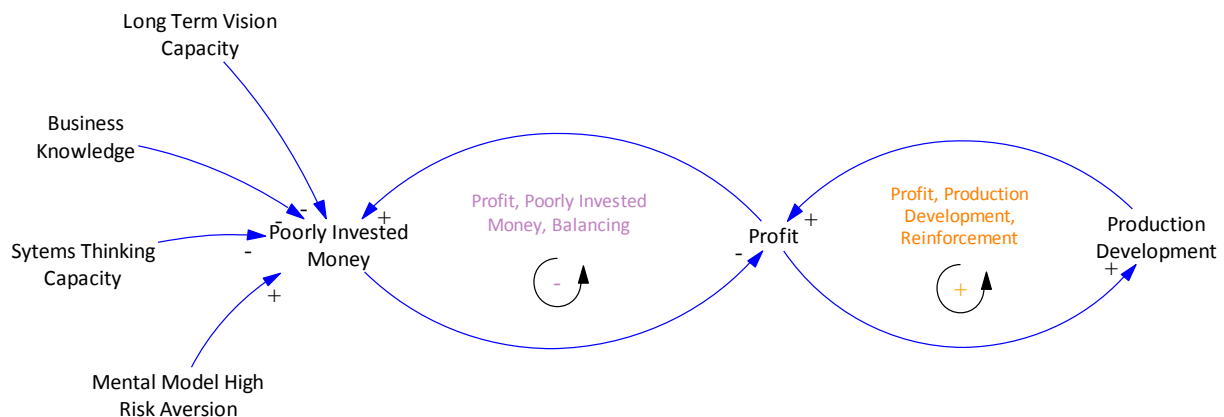


Figure 4.1.4.5: Winery A's Dynamic Hypothesis 3 Causal Loop Diagram

Figure 4.1.5 represents winery A's dynamic hypotheses three where a "misunderstanding the success process" situation occurs. The response to the declining profits has been the acquisition of a new tractor, new trees and new land, thus developing more the supply side of the firm (positive reinforcing feedback loop on the right) instead of developing its fundamental vision, mission and balancing the demand side with the bigger supply (negative balancing feedback loop on the left). The main "misunderstanding the success process" identified, that is limiting winery A's ability to generate adequate investments towards the development of a solid business plan and a balanced supply and demand are: a) the long term vision capacity, b) business knowledge, c) systems thinking reasoning capacity, and d) the level of risk aversion.

#### ***4.1.5 Complementary Insights***

A complementary strategy that winery A could introduce in order to increase its sales and reduce its variability in sales is to increase its sales in other local restaurants. Many restaurants support local producers and are open to introducing local wine onto their menus.

Finally, as White (2010) indicates, it is often cheaper for wineries in a mature market to buy grapes (or juice) or fruit than to grow it. Furthermore, research indicates that it is better to sell wine from a tasting room sooner, rather than later, if you can source grapes, juice, (or other fruit). Winery A has been facing the limitations of a small tasting room since the tasting area was opened. However, they have chosen to make other investments, such as more trees, land and a tractor, instead of expanding their tasting room. Here we identify a tool that provides financial indicators as well as a detailed description of the costs and revenues of investing in a tractor. Having specific numbers about the expenses and returns from investing in a tractor will help Winery A assesses the effectiveness of that strategy given other investment alternatives such as expanding the tasting room.



The tractor investment assessment tool is developed by the Department of Agricultural Economics at Kansas State University and uses The Official Guide of the Equipment Industry (the Guide) as a source for the standard numbers. The tool can be found at: <http://www.agmanager.info>. Given an hypothetical scenario where winery A were about to invest \$30,000 either in a used tractor or in expanding the tasting room area that would increase its sales by at least 3 percent, numbers indicate that it is more profitable to invest in a tasting room and buy the fruit or rent a tractor for picking the winery fruit.

## **4.2 Winery B**

### ***4.2.1 Winery B's Main Perceived Challenges***

The main Perceived Challenges by winery B are:

- 1) To maintain its sales on-site and outside the winery, especially beyond the regions, and
- 2) To keep effective accounting records. The winery does not have its cashiers linked to the accounting software and main computer and some information has not been adequately documented. The uncertainty in the actual business numbers can bring further problems.

### ***4.2.2 Winery B's Reference Modes***

The figure below illustrates the winery's sales reference mode. Since its beginning in 2010 the winery has increased both, its on-site sales and its outside sales, especially during the last two years. However, the winery is concerned about the possibility of not maintaining this increasing pattern.

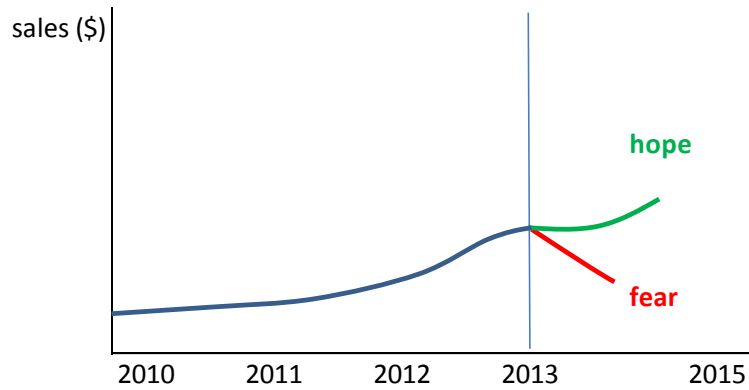


Figure 4.2.1: Winery B's Sales Reference Mode

Figure 4.2.2 below is winery B's reference mode related to the evolution of the winery's effective accounting system. The winery started improving the accuracy of its accounting records in 2012 but there is still room for improvement. The winery is concerned about not having a clear picture of its business situation in the near future.

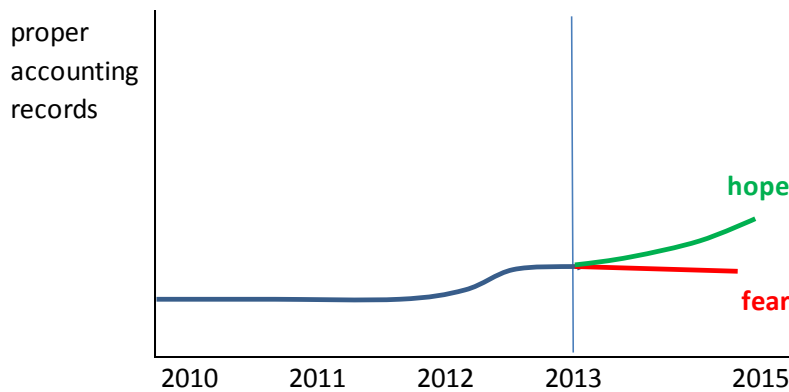


Figure 4.2.2: Winery B's Effective Accounting Records Reference Mode

#### 4.2.3 Winery B's Dynamic Hypotheses

Winery B's dynamic hypotheses are:

H1: The limit in production capacity is not allowing sales to expand at its potential pace outside the winery and it will limit the on-site sales.

H2: The need to increase sales is exacerbating the problem of inaccurate accounting which will eventually require attention to be diverted from sales to improving the accounting system.

#### 4.2.4 Winery B's Causal Loop Diagrams and Discussion

Figure 4.2.3 indicates an “underinvesting in growth” causal loop diagram for winery B. Winery B is focusing on increasing its on-site sales (positive –reinforcing feedback loop in the right) and is not considering the production capacity needs that are about to come with all this sales increase (negative –balancing feedback loop at the left). As sales keeps increasing, winery B will face the need to increase its inventory goals, otherwise it will experience inventory limits and sales will reduce.

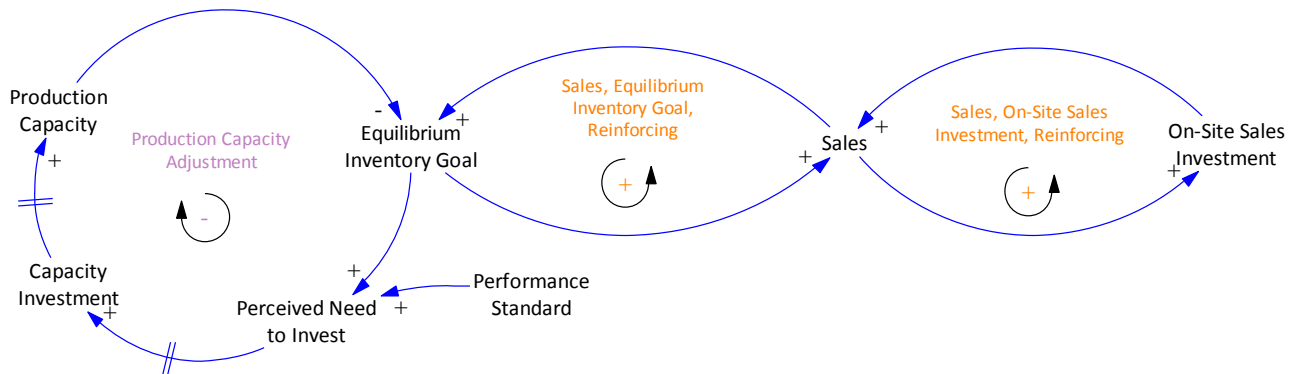


Figure 4.2.3: Winery B's Dynamic Hypothesis 1 Causal Loop Diagram

Figure 4.2.4 indicates a “misunderstanding the success process” causal loop diagram. The more winery B focuses on increasing its sales, the more resources it invests in developing the on-site sales capacity (positive –reinforcing, feedback loop on the right side) and the lesser resources it invests in accounting. As a result, accounting issues arise and the winery does not know exactly what it owns, what it owes and what has been sold. Eventually, the level of accounting inaccuracy will demand attention and some of the resources budgeted for increasing on-site sales capacity will have to be diverted towards addressing the accounting problem and the left reinforcing loop will dominate.

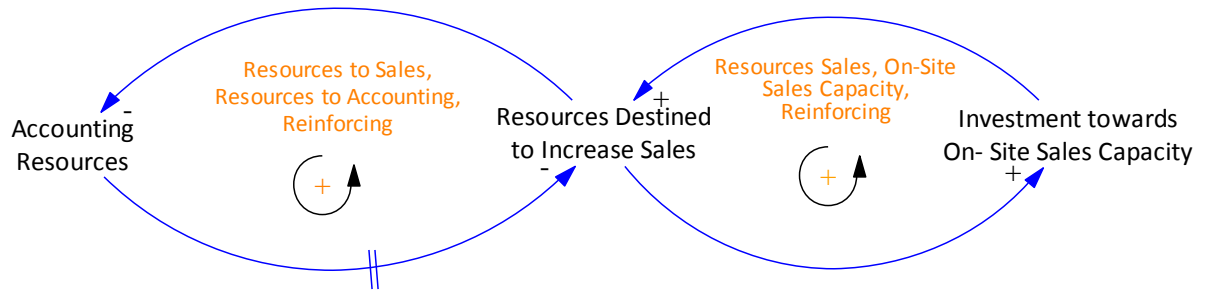


Figure 4.2.4: Winery B's Dynamic Hypothesis 2 Causal Loop Diagram

## 4.3 Winery C

### 4.3.1 Winery C's Main Perceived Challenges

The main Perceived Challenges by winery C are:

- 1) Increasing difficulty in grape provision since it is not profitable to grow grapes in Virginia and new wineries are opening. Hence, grape prices in Virginia are increasing and availability is decreasing.
- 2) A possible reduction of market share due to the opening of new wineries closer to Washington DC.
- 3) To properly manage the winery finances and be able to satisfy the short term needs as well as the long term needs.
- 4) To properly manage employees so that they can all reach their potential in the winery.
- 5) To properly manage the wine inventory space.

### 4.3.2 Winery C's Reference Modes

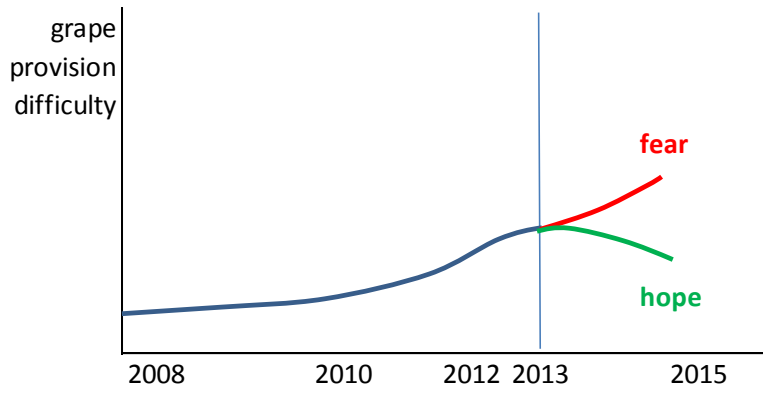


Figure 4.3.1: Winery C’s Grape Provision Difficulty Reference Mode

Figure 4.3.1 illustrates the increased difficulty acquiring grapes in Virginia given the reduction in supply and the increase in wineries during the last few years. Winery C fears that this increasing trend will continue in the near future.

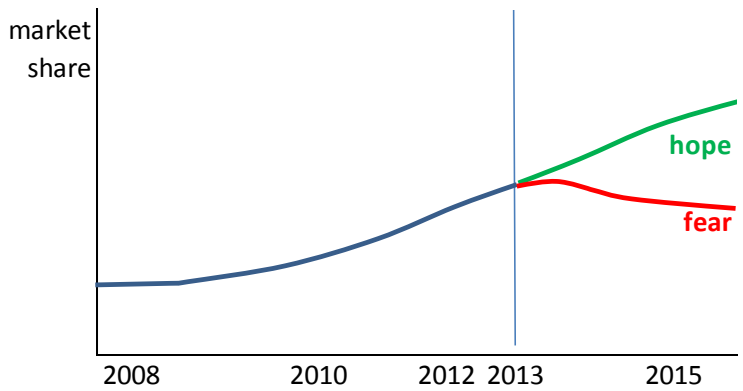


Figure 4.3.2: Winery C’s Market Share Reference Mode

Figure 4.3.2 illustrates winery C’s concern that the new wineries located closer to Washington DC may capture part of its market share in the coming years.

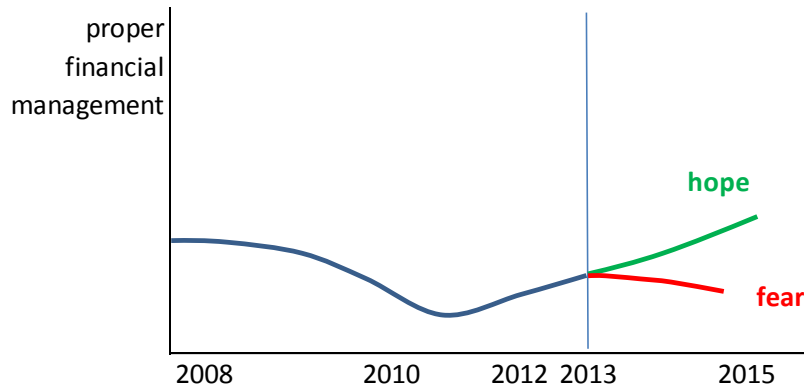


Figure 4.3.3: Winery C Effective Financial Management Reference Mode

Winery C hopes to be able to continue its upward trend regarding its financial management.

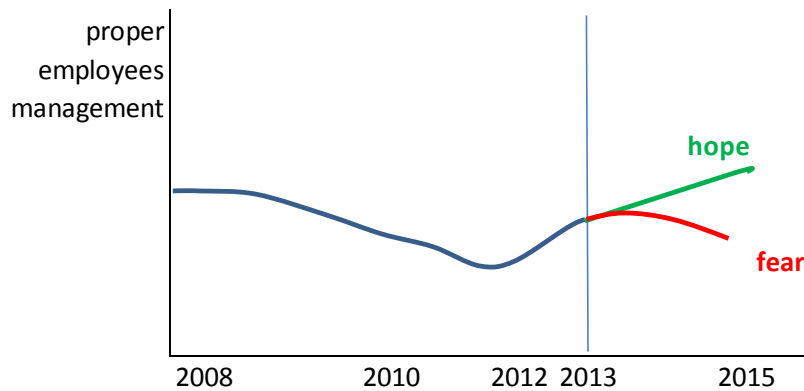


Figure 4.3.4: Winery C Proper Employees Management Reference Mode

As the winery has expanded its number of employees, the quality of relationships, guidance, training and mentorship routines have declined. Brian has taken care of some basic relationship issues but low quality of interaction among employees in different levels and roles has meant that employees were not being properly managed. In 2011 Jorge joined Winery C as the general manager and thanks to his people skills and position of responsibility it has been possible to bridge some of the existing gaps in order to achieve more effective employee management.

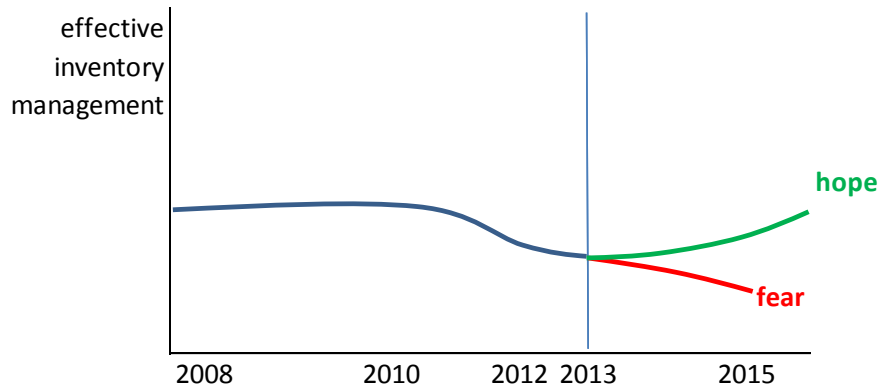


Figure 4.3.5: Winery C’s Effective Inventory Management Reference Mode

As Winery C’s sales increased the inventory capacity became inadequate and the ability to find the type of wine needed and to move it out of the inventory area became more difficult. The wine-maker fears that this pattern may continue.

#### **4.3.3 Winery C’s Dynamic Hypotheses**

Winery C’s dynamic hypotheses are:

H1: The decrease in access to Virginia grapes may reduce the amount of wine produced by Winery C.

H2: The increase in number of wineries closer to Washington DC may reduce Winery C’s market share.

H3: Cutting salaries will not address the ineffective financial practices that caused the winery to experience losses.

H4: Frequent contact based on empathic listening and dialogue between employees and managers increases winery productivity and output quality.

H5: The lack of an effective inventory space and effective inventory management increases Winery C’s operating costs.

#### 4.3.4 Winery C's Causal Loop Diagrams and Discussion

Figure 4.3.6 illustrates a “misunderstanding the success process” causal loop diagram where the decrease of grapes grown in Virginia due to their low profitability and the increase in demand of grapes given the increase in wineries may limit the growth of winery C's wine production (negative –balancing feedback loop on the left) unless the winery finds and ensures all the grapes that it needs for its goals and the positive– reinforcing feedback loop dominates winery C's wine production.

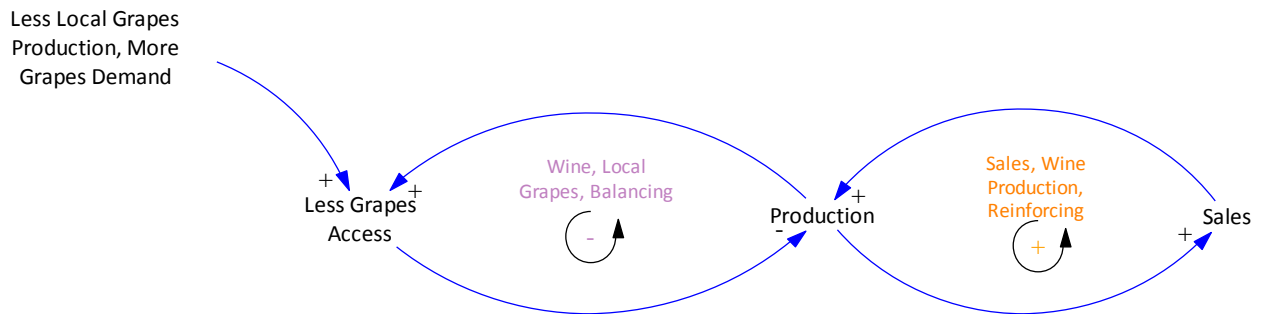


Figure 4.3.6: Winery C's Dynamic Hypothesis 1 Causal Loop Diagram

Figure 4.3.7 illustrates a “misunderstanding the success process” causal loop diagram where the new wineries located closer to Washington DC increase market competition and may reduce winery C's market (negative –balancing feedback loop on the left) share unless effective strategies are implemented that mitigate this new limit and the positive -reinforcing feedback loop dominates winery C's market share dynamics.

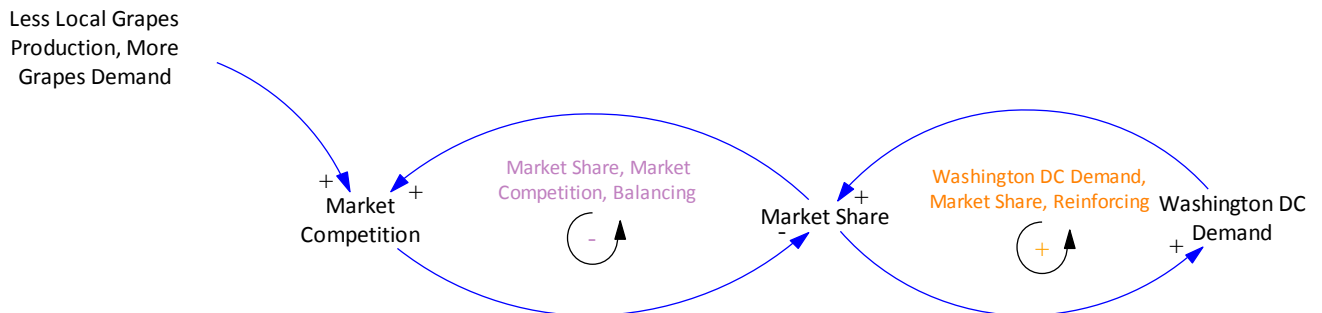


Figure 4.3.7: Winery C's Dynamic Hypothesis 2 Causal Loop Diagram



Figure 4.3.8 illustrates a “shifting the burden” scenario where winery C, when faced with a difficult financial situation, decided to cut salaries in order to bring the firm to a break-even situation. This strategy is represented by the negative —balancing feedback loop on the left, which indicates a symptomatic solution. A year after, winery C decided to professionalize the winery and hired a professional financial manager to handle the short run and long run winery decisions. The negative balancing feedback loop with a delay on the right reflects this fundamental solution.

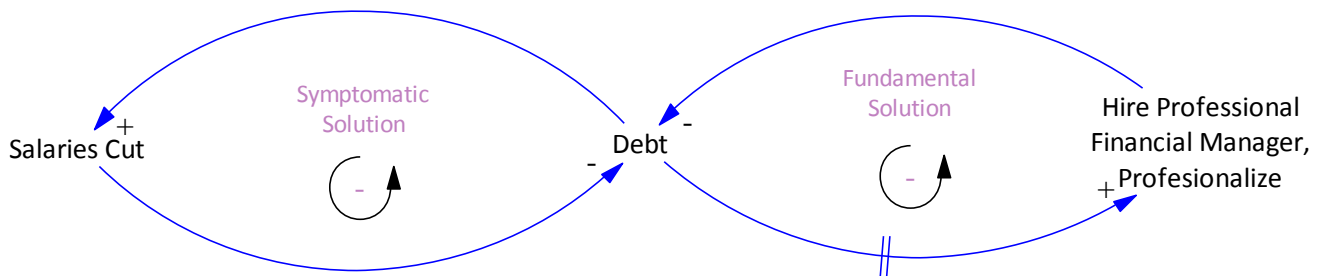


Figure 4.3.8: Winery C’s Dynamic Hypothesis 3 Causal Loop Diagram

Figure 4.3.9 indicates a “shifting the burden” scenario where Winery C’s managers, facing a low level of employee productivity first focused on reducing the emotion-based conflicts inside the winery (negative balancing feedback loop on the left). Later they hired a new manager which shed new light on the issue. In addition, by increasing the frequency of managers’ visits to the tasting room and by increasing dialogue between managers and employees, the productivity of employees rose (negative balancing feedback loop with a delay).

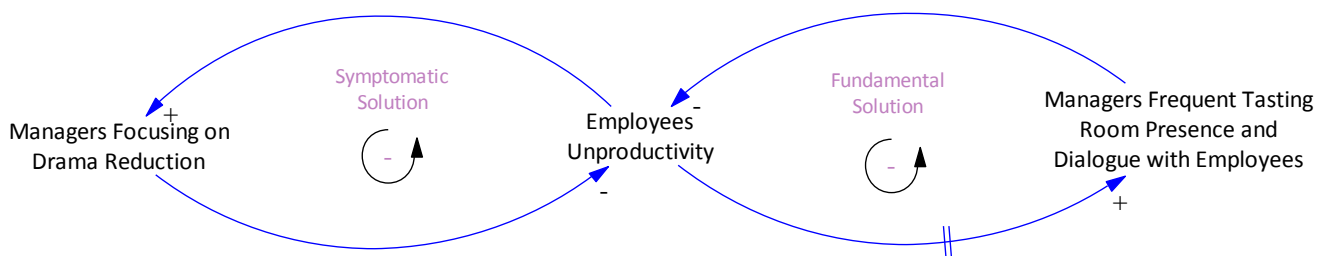


Figure 4.3.9: Winery C’s Dynamic Hypothesis 4 Causal Loop Diagram

Figure 4.3.10 illustrates a “misunderstanding the success process” scenario where the increase in demand requires more use of winery C’s inventory (positive –reinforcing feedback loop). More inventory use increases the winery’s operating costs because of the inefficient use of inventory space and its management (negative feedback loop).

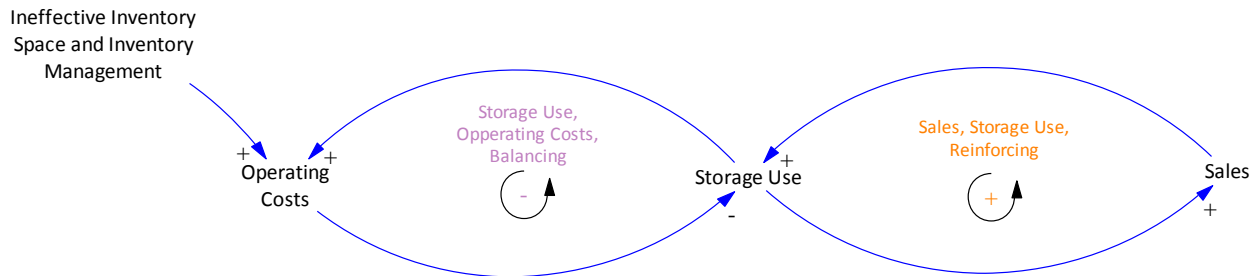


Figure 4.3.10: Winery C’s Dynamic Hypothesis 5 Causal Loop Diagram

#### 4.3.5 Complementary Insights

As White (2010) indicates, it is often cheaper for a winery in a mature market to buy grapes (or juice) or fruit than to grow them. However, grape production in the U.S. has decreased since 2007 from 163 million of tones to 117 million of tones in 2013 (NASS 2013) and wineries have increased since then. In the specific case of Virginia, a safe strategy is to keep growing your own grapes and keep developing close relationships with grape growers to ensure delivery and reasonable prices.

In terms of the increased market competition for winery C, one of the two new wineries could be potentially more harmful to Winery C since it targets a similar market and offers similar products. The second winery focuses more on wine tours and less on creating a beautiful landscape and atmosphere while tasting wine and discussing food. A strategy that would enhance Winery C’s competitive advantage is to strengthen its club membership events and to develop more high quality wines.

## 4.4 Winery D

### 4.4.1 Winery D's Main Perceived Challenges

Winery D perceives its main challenges as:

- 1) To identify effective means of preventing bugs and animals from damaging the grapes.
- 2) To identify the best strategies to expand its winery market into neighboring states.
- 3) To increase the winery's production capacity so that the winery production can satisfy the growing demand.

### 4.4.2 Winery D's Reference Modes

Figure 4.4.1 below illustrates Winery D's reference mode related to the first challenge. The effectiveness of the techniques used to keep bugs and animals out of the vineyards has increased over time. They hope that greater effectiveness can be achieved and eventually a minimal amount of grapes would be lost to pests.

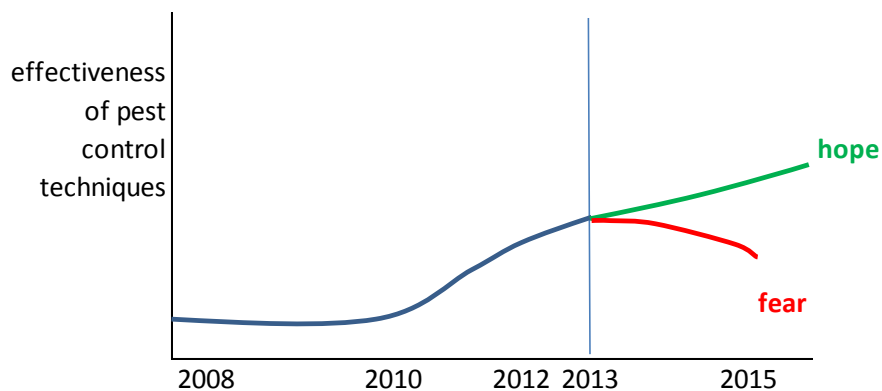


Figure 4.4.1: Winery D's Pest Control Techniques Effectiveness Reference Mode

Figure 4.4.2 below illustrates Winery D's allocation of resources expanding their market to southern states. Their managers have recently considered opening the winery markets to southern

states; however, no further resources have gone in that direction. Their intention is to dedicate some resources for that purpose in the near future.

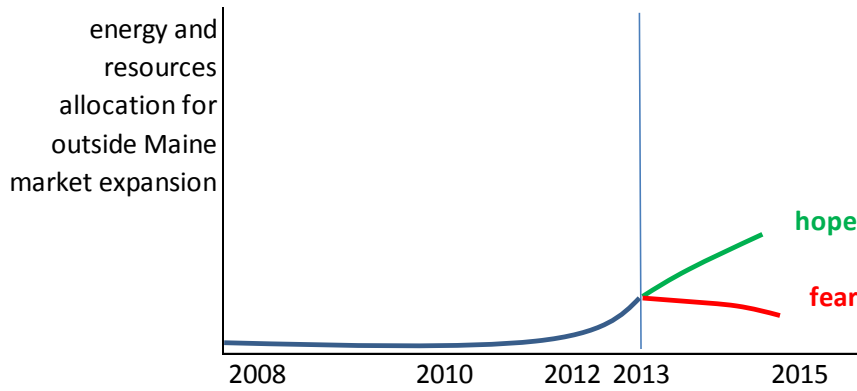


Figure 4.4.2: Winery D’s Allocation of Resources for Market Expansion Reference Mode

Figure 4.4.3 below illustrates the reference mode related to Winery D’s third challenge. The winery production capacity has increased substantially during the last few years. However, the demand has increased at a faster pace. There is fear that the winery production capacity will not grow fast enough to satisfy the demand.

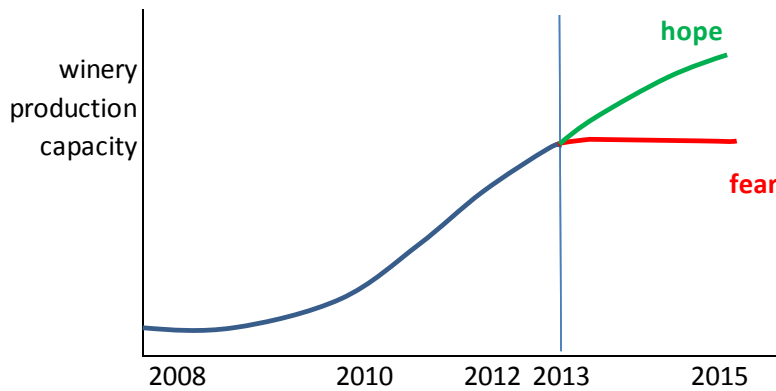


Figure 4.4.3: Winery D’s Production Capacity Utilization Reference Mode

**4.4.3 Winery D’s Dynamic Hypotheses**

Winery D’s dynamic hypotheses are:

H1: Further investment in pest control will raise the percentage of grapes harvested.

H2: Allocation of substantial energy and resources is necessary to successfully expand markets into southern states.

H3: An expansion of the winery production capacity is necessary to assure that supply keeps up with demand.

#### 4.4.4 Winery D's Causal Loop Diagrams and Discussion

Figure 4.4.4 illustrates the dynamic hypothesis one mechanism. More demand requires higher grapes yield (positive –reinforcing feedback loop). The larger the grape yield, the more grapes eaten or damaged by bugs and animals –as long as the pest control techniques are ineffective.

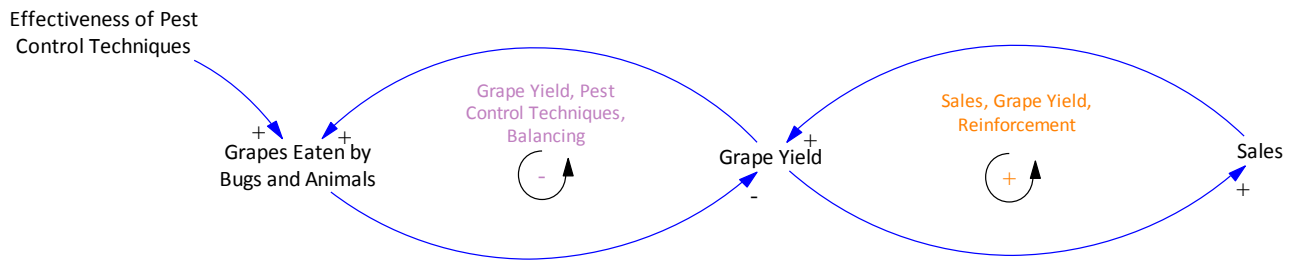


Figure 4.4.4: Winery D's Dynamic Hypothesis 1 Causal Loop Diagram

Figure 4.4.5 illustrates Winery D's second dynamic hypothesis. The winery is aware of the potential market outside Maine, however, limited resources have been allocated to marketing and the potential markets outside Maine have not been developed (negative balancing feedback loop).

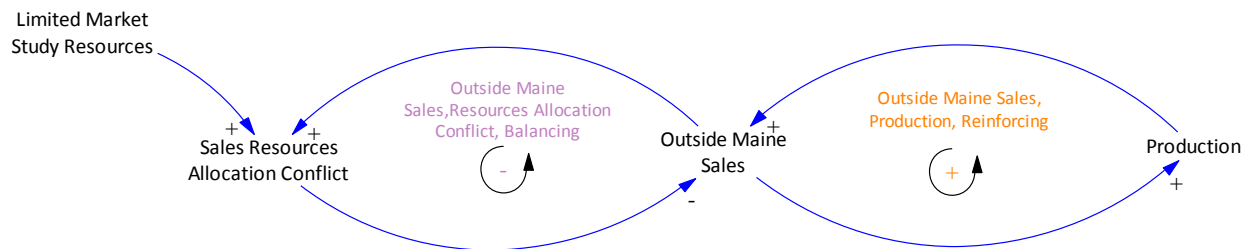


Figure 4.4.5: Winery D's Dynamic Hypothesis 2 Causal Loop Diagram

Figure 4.4.6 illustrates the causal loop diagram of Winery D's third dynamic hypothesis. Sales are growing at a faster pace than the winery inventories and supply. The winery production capacity is

reaching its maximum, limiting its ability to satisfy demand. Further investment is needed in order to offset this constraint (negative balancing feedback loop with delays).

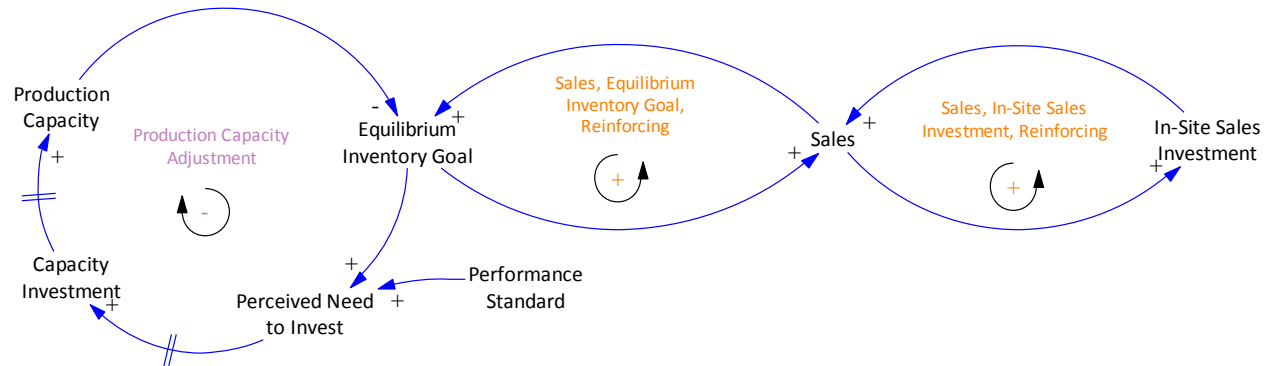


Figure 4.4.6: Winery D's Dynamic Hypothesis 3 Causal Loop Diagram

#### 4.4.5 Complementary Insights

Winery D is considering expanding its sales to other nearby states such as New Hampshire, Massachusetts and Connecticut. Given the average income of these states, the number of existing wineries, the average level of wine consumption and Winery D's brand and market niche, Massachusetts would be the most effective place to introduce a new winery or tasting room. The second best location would be Connecticut and New Hampshire would be last. New Hampshire and Connecticut residents consume less wine per person than residents of Massachusetts. Massachusetts consumers rank seventh in the nation in per capita wine consumption at 4.9 gallons per year, nearly double the national average of 2.54 gallons per year in 2010 (Massachusetts Department of Agricultural Resources 2011). The United States Census Bureau indicates that average per capita income of Massachusetts residents in 2011 was \$35,051 while in New Hampshire and Connecticut it was \$32,357 and \$37,627 respectively (United States Census Bureau 2012). One of the attractive aspects of the Massachusetts wine market is that out of 40 wineries in 2011, just 26 have tasting rooms open to visitors. Furthermore, not that many wineries are located close to Boston, leaving an opportunity to satisfy the demand in this market. Massachusetts wineries are small and 66 percent of their sales come from direct sales at the winery. Just four of

Massachusetts' wineries produced over 10,000 gallons, sixteen produced between 500 to 10,000 gallons and the remaining 20 wineries produced less than 500 gallons per year (Massachusetts Department of Agricultural Resources 2011). Massachusetts' population, especially Boston residents, has an interest in local products and art, and value the opportunity to leave the city and enjoy nature, good wine and food. Hence, given Winery D's experience in producing more than 20,000 gallons per year, and its love for hosting events with local producers and artists, the introduction of a new winery or tasting room close to Boston has a high probability of being successful.

In terms of Winery D's strategies for preventing pests from eating grapes, research indicates that hunting these animals is the most effective strategy since it eliminates the root cause of the problem. Putting the residual grapes skin or any other leftover food at an adequate distance from the farm would attract the animals there, diverting them from the winery. However, in the longer term pest populations would increase given the new food source. A full net approach seems to be the best pest control strategy available. Finally, deer control is mainly achieved when vineyards are enclosed with a fence that is at least 7.6 feet high.

Another concern expressed by D's vineyard managers is the identification of effective strategies to keep the beetle problem down. This issue has recently been brought under control but some improvements can be made. Here we provide two documents that could be useful in order to more effectively tackle the beetle problem. Maine Department of Agriculture, Conservation and Forestry provides information online about how to keep the beetle problem down in its report related to Maine's invasive threats to forests and trees (Main Forest Service 2012). A more specific report is *Managing the Japanese Beetle, a homeowner's handbook* (USDA 2011).

Winery D's vineyard managers also expressed an interest in improving their weed management. For now the use of Round-Up seems to be quite effective in keeping weeds under control. Maine natural

areas program presents information about invasive plants and how to prevent their spread (Main Forest Service 2012). Another resource that provides insights about more effective means of managing weeds are the publications related to natural landscapes of Maine from Maine Natural Areas Program (Main Natural Areas Program 2012).

## **4.5 Winery E**

### ***4.5.1 Winery E's Main Perceived Challenges***

Winery E's main challenges identified are:

- 1) The lack of a clear business plan to guide day to day decisions.
- 2) The lack of appropriate employee and manager remuneration.
- 3) The firm brand and logo do not fully represent the owners' values and the winery's mission.
- 4) The tendency to see problems instead of opportunities limits the winery's sales.
- 5) The winery's contract with the wholesaler limits its ability to develop more sales with local restaurants and retailers.

### ***4.5.2 Winery E's Reference Modes***

Figure 4.5.1 below illustrates the reference mode of the first challenge identified. The winery has never had a defined business plan and this situation has limited the development of successful strategies for achieving the winery's goal.



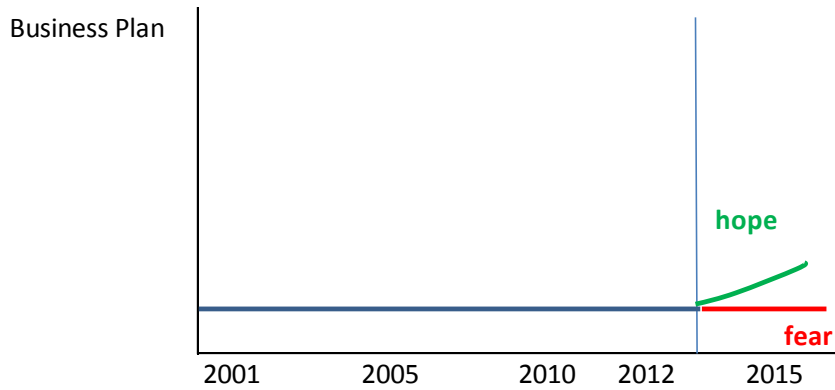


Figure 4.5.1: Winery E's Business Plan Reference Mode

Figure 4.5.2 below illustrates the evolution of Winery E's employee and manager remuneration. The winery improved its level of remuneration when it hired a permanent employee in the tasting room area and another to work in inventory and the vineyards. However, the two main managers are underpaid or not paid at all.

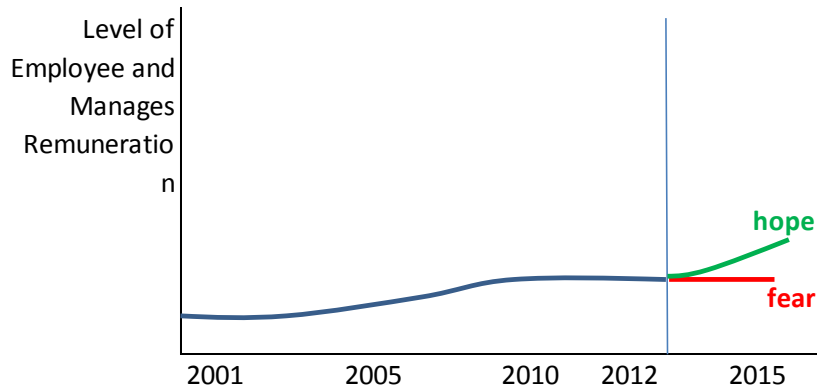


Figure 4.5.2: Winery E's Level of Employee and Manager Remuneration Reference Mode

Figure 4.5.3 below indicates the evolution of Winery E's brand and logo in accordance with the winery's values and mission. The winery hired a firm to improve its branding and marketing but the result was not satisfactory since the marketing firm did not really capture the essence of the winery.

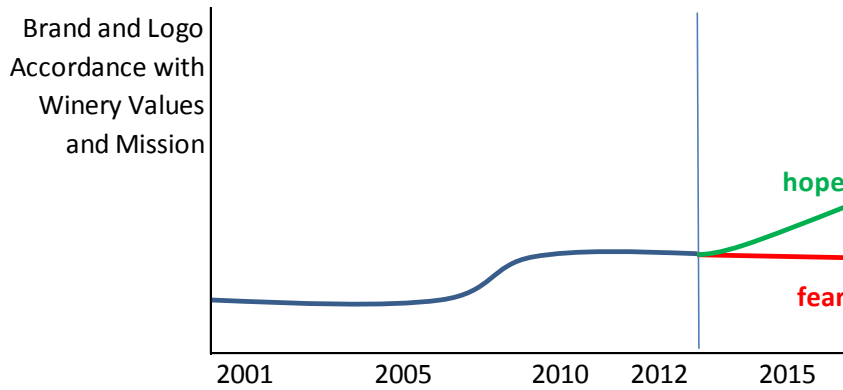


Figure 4.5.3: Winery E’s Brand Logo Accordance with Winery Values and Mission Reference Mode

Figure 4.5.4 below illustrates Winery E’s reference mode for its manager’s tendency to see problems instead of opportunities. Since the winery expanded its production and sales capacities more challenges arose and the tendency to see problems instead of opportunities increased. This challenge is identified by the researcher instead of the manager; hence the “fear” and “hope” possible patterns are from the researcher’s perspective.

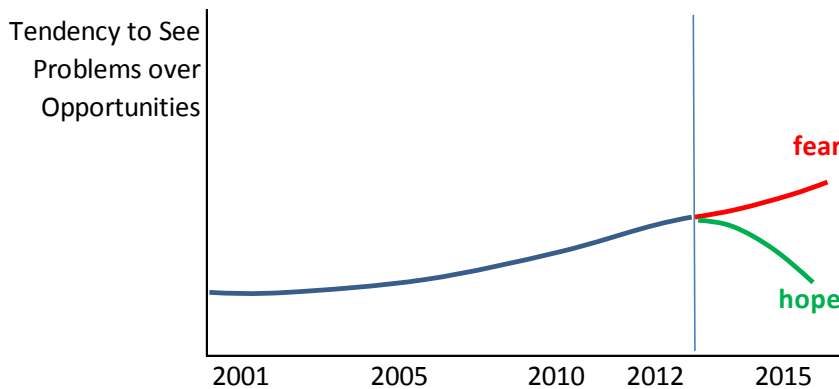


Figure 4.5.4: Winery E’s Tendency to See Problems instead of Opportunities Reference Mode

Figure 4.5.5 below illustrates winery E’s sales reference mode. The winery has seen a small but constant increase in sales year after year. However, the winery is concerned that given the market conditions it may experience a sales decrease.

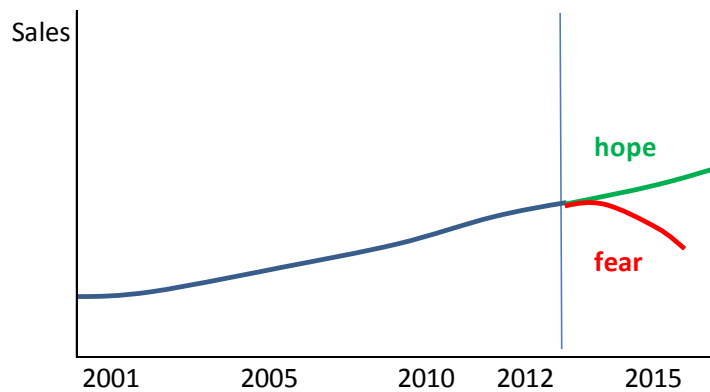


Figure 4.5.5: Winery E’s Sales Reference Mode

#### **4.5.3 Winery E’s Dynamic Hypotheses**

Winery E’s dynamic hypotheses are:

- H1: Lack of a clear business vision exacerbates the winery’s financial management problems.
- H2: Improper employee management leads to ineffective work.
- H3: Inadequate brand design and logo limit winery sales.
- H4: Pessimistic mental models reduce the winery’s ability to sell.
- H5: Manager’s short term vision limits the winery’s ability to increase sales by self-distributing.

#### **4.5.4 Winery E’s Causal Loop Diagram and Discussion**

Figure 4.5.6 below represents the causal loop diagram for winery E’s first dynamic hypothesis. It indicates a “shifting the burden” situation where the symptomatic solution in the face of rising inventories is to reduce or eliminate the pay of managers since they are family members (right negative -balancing feedback loop). A fundamental solution to rising inventories would require more time since the winery’s long term business vision and plan would need to be revised and reformulated (left

negative –balancing feedback loop with a delay).

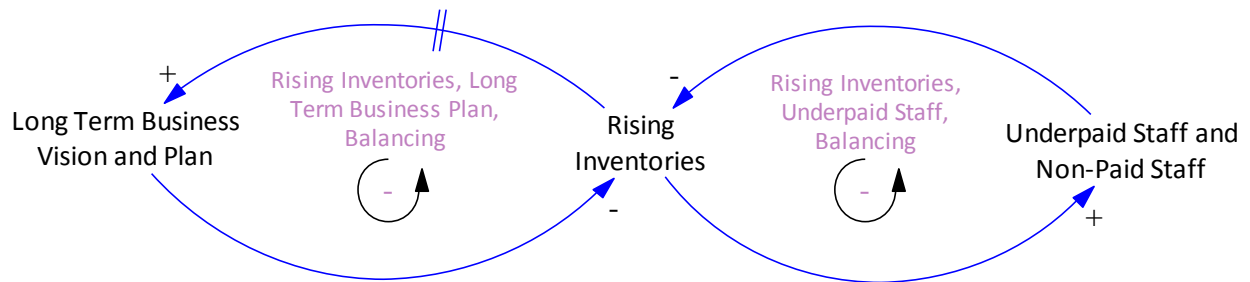


Figure 4.5.6: Winery E's Dynamic Hypothesis 1 Causal Loop Diagram

Figure 4.5.7 below represents winery E's second dynamic hypothesis causal loop diagram. It indicates a "misunderstanding success" scenario driven by Laura's inappropriate remuneration scheme. The winery, when trying to develop effective strategies, has focused its attention on the results that drive profits in the short run (positive –reinforcing feedback loop). However, these strategies are increasing Laura's work load up to a point that her ability to pursue and develop effective strategies decreases given her low rewards.

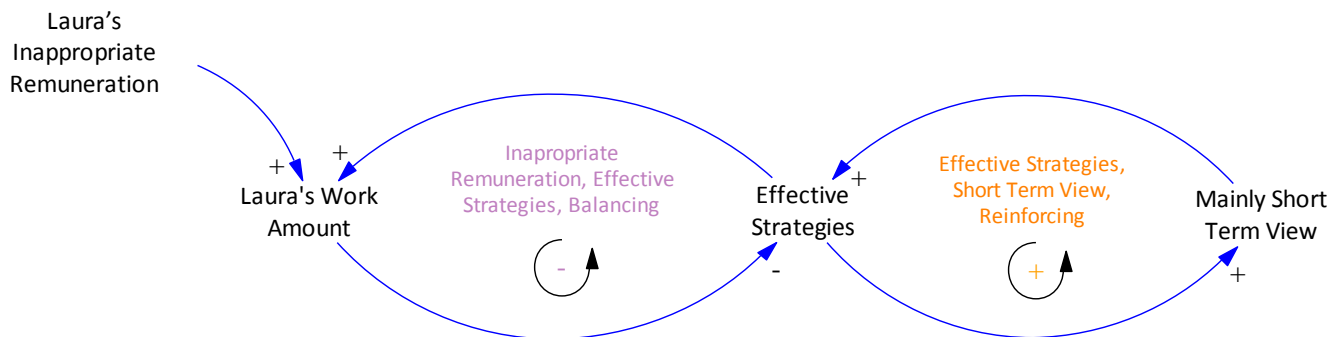


Figure 4.5.7: Winery E's Dynamic Hypothesis 2 Causal Loop Diagram

Figure 4.5.8 represents winery E's third dynamic hypothesis causal loop diagram. In response to low profits, the winery has tended to invest more on increasing all the production stages than on expanding its demand. The winery has not invested in marketing and brand development in a

fundamental way so that its vision and mission can be reflected in the winery products (negative – balancing feedback with delay).

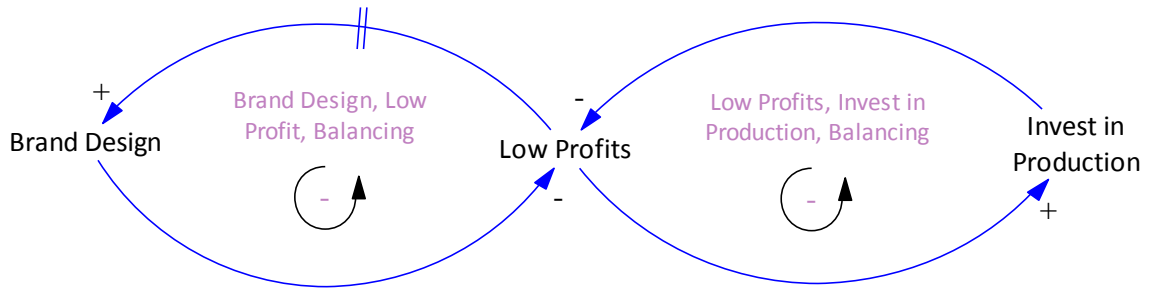


Figure 4.5.8: Winery E’s Dynamic Hypothesis 3 Causal Loop Diagram

Figure 4.5.9 below illustrates winery E fourth dynamic hypothesis causal loop diagram. The winery sales are being limited by the winery managers’ mental models that tend to see more problems instead of opportunities. The winery has tended to increase sales by increasing its production, however, when the new required work and managerial skills required for the new volume had to be developed, the managers were overwhelmed and saw mainly obstacles all around.

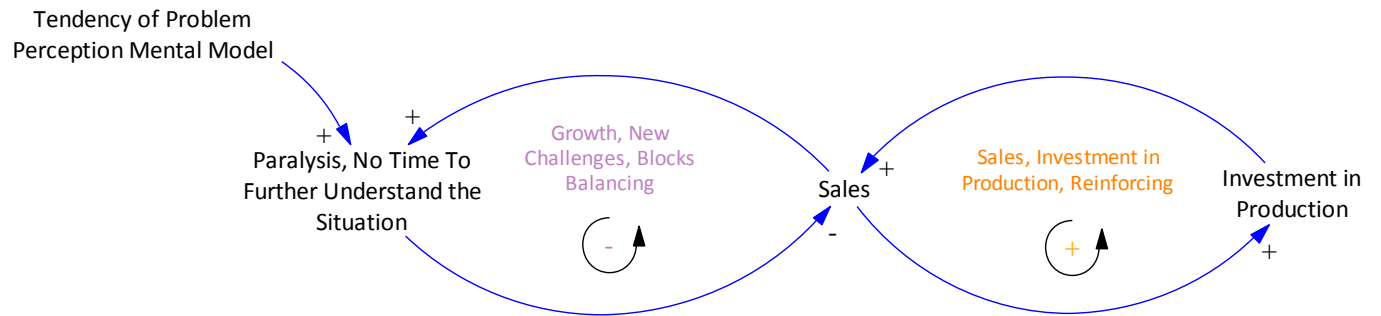


Figure 4.5.9: Winery E’s Dynamic Hypothesis 4 Causal Loop Diagram

Figure 4.5.10 below indicates winery E’s fifth dynamic hypothesis causal loop diagram. The winery sales expansion is being limited by the contract with the wholesale distributor. The winery’s aim to keep sales at least at the same level as the previous year puts pressure on them to continue renewing

the contract with the wholesaler. As a result they are unable to expand their market to local restaurants and local retailers given the distribution contract.

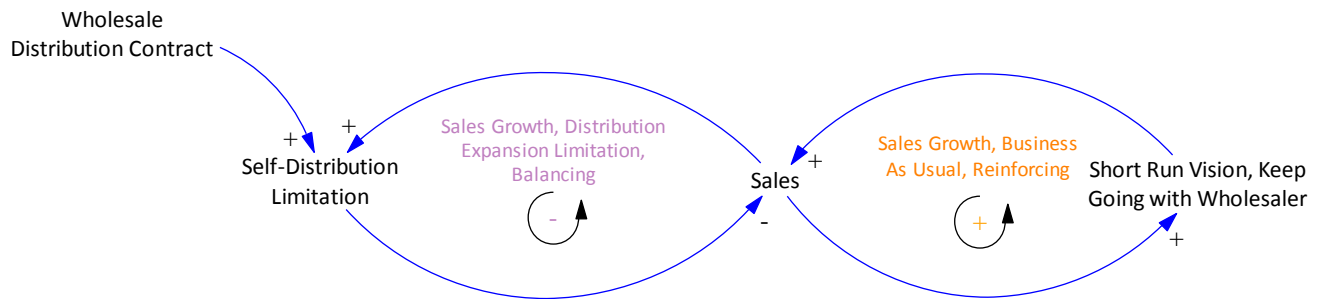


Figure 4.5.10: Winery E’s Dynamic Hypothesis 5 Causal Loop Diagram

#### 4.5.5 Complementary Insights

More specific information about the rationale of possible strategies that would enhance Winery E’s success is presented here. One strategy that is blocking winery E’s sales expansion and limiting the full appreciation of their products by consumers is the contract with the wholesaler that distributes twenty percent of winery E’s wine. The wholesaler buys the wine at a 30 percent discount from winery E prices and distributes it to several retailers. Given the three-tier Missouri distribution system, winery E cannot self-distribute its wine to local restaurants or stores since it already has a contract with a wholesaler. However, consumers’ appreciation for local foods and organic products has increased substantially during the last five years and many potential consumers could be reached if winery E self-distributed its wines and promoted their brand and values. In this way winery E would reach consumers that appreciate its product than under wholesaler distribution and it could build a more loyal relationship with them. A list of potential restaurants, stores and markets where winery E’s products would be valued is presented in table 4.1 below.

However, in order for winery E to be able to expand its sales outside the winery it needs to clearly identify its values and brand. This factor is crucial also in order to increase its on-site sales and develop an attractive website. Furthermore, clearly identifying what distinguishes winery E from other

wineries and properly conveying this message on the website and to winery visitors would enhance the number of on-site customers and the money spend per visit.

Some of the marketing aspects that can bring more success to winery E are:

- A. The winery name is “E”. The word “winery” is not part of the winery name. This may disperse the attention of potential customers, since the winery’s most basic component is not reflected in its name.
- B. Similarly, the winery logo is based on the winery name and it does not reflect “wine”, but just the grapes.
- C. The winery name and logo have to come from the winery founders so that it transmits the winery values, mission and vision. If the winery marketing is completely left to a third party that does not know, appreciate and captures the essence of the business was established and where the founders would like it to go then the essence of the business and opportunity to connect to current and potential winery guests is lost.
- D. The website could be improved with some background about the family, its values, and what it means for them to make wine and create this environment.

## **4.6 Winery F**

### ***4.6.1 Winery F’s Main Perceived Challenges***

The main challenges identified for the winery F are:

- 1) Stressed employees especially at the tasting room, restaurant and kitchen departments (identified by the researcher).
- 2) The infrequent communication between managers and employees and the low level of emphatic listening and dialogue of these communications.
- 3) The small office area dedicated to managers (identified by the researcher).

#### 4.6.2 Winery F's Reference Modes

Figure 4.6.1 below illustrates winery F stressed employees reference mode. As the winery got bigger the level of stressed employees increased, especially at the tasting room, restaurant and kitchen areas. Management hopes to change the trajectory of this mode.

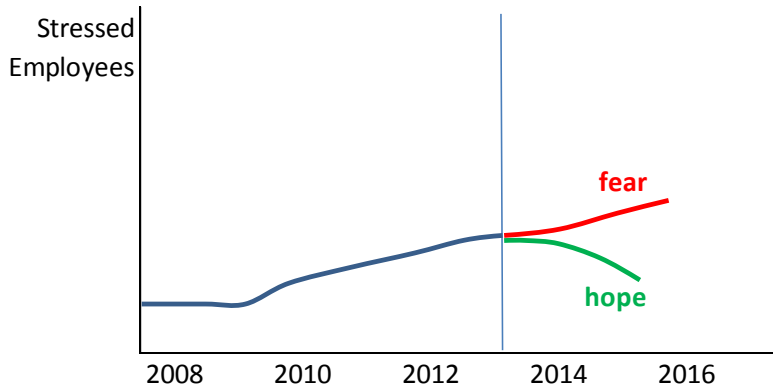


Figure 4.6.1: Winery F's Stressed Employees Reference Mode

Figure 4.6.2 below indicates the reference mode related to the communication effectiveness between managers and employees at winery F. The effectiveness level has decreased since the winery opened. The increasing number of employees and the more complex and demanding managerial tasks have deteriorated the initial communication effectiveness between managers and employees.

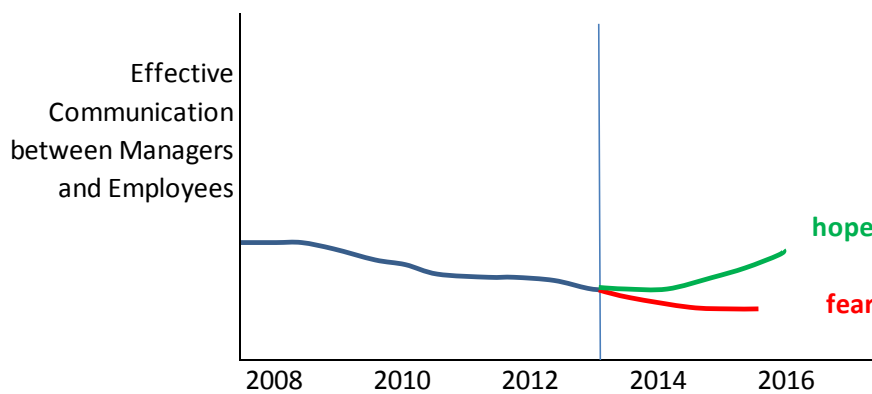


Figure 4.6.2: Winery F's Communication Effectiveness between Managers and Employees Reference Mode



Figure 4.6.3 below indicates Winery F’s reference mode related to the winery office area. The winery dedicates a small area to its managers; many of them work at the same oval table. As the number of managers has increased the room has become increasingly ineffective as a place for sound managerial work.

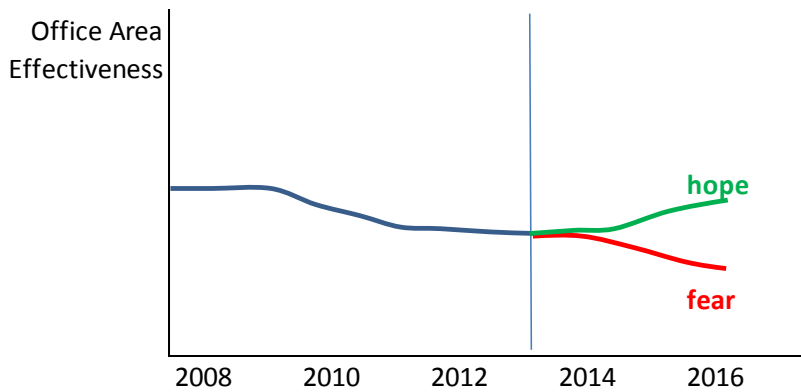


Figure 4.6.3: Winery F’s Office Area Effectiveness Reference Mode

#### 4.6.3 Winery F’s Dynamic Hypotheses

Winery F’s dynamic hypotheses are:

H1: Stressed employees limit the level of clients’ satisfaction.

H2: The ineffective communication between managers and employees limits the winery profits.

H3: The managers’ office area is reaching its maximum utilization level which limits managers’ productivity.

#### 4.6.4 Winery F’s Causal Loop Diagram and Discussion

Figure 4.6.4 below illustrates winery F’s first dynamic hypothesis causal loop diagram. Stressed employees increase the low quality service provided by the winery and client satisfaction goes down (negative –balancing feedback loop). On the other hand, the more demand the more client satisfaction that brings new demand (positive –reinforcing feedback loop).



Figure 4.6.4: Winery F's Dynamic Hypothesis 1 Causal Loop Diagram

Figure 4.6.5 below illustrates winery F's second dynamic hypothesis causal loop diagram. The attention on raising demand increases the winery profits. However, the allocation of most of the winery's resources to increasing demand neglects the fundamental communication and relationships between the managers and employees. As a result the growing demand cannot be effectively handled.

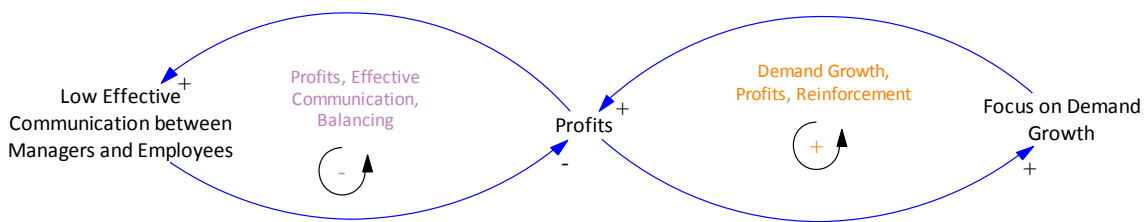


Figure 4.6.5: Winery F's Dynamic Hypothesis 2 Causal Loop Diagram

Figure 4.6.6 below illustrates winery F's third dynamic hypothesis causal loop diagram. The winery's growth brings new managers to the winery (positive –reinforcing feedback loop). Managers' productivity level depends on the size and quality of work space. Winery F's office space is limiting its managers' productivity since it is reaching its maximum capacity (negative –balancing feedback loop

with delays).

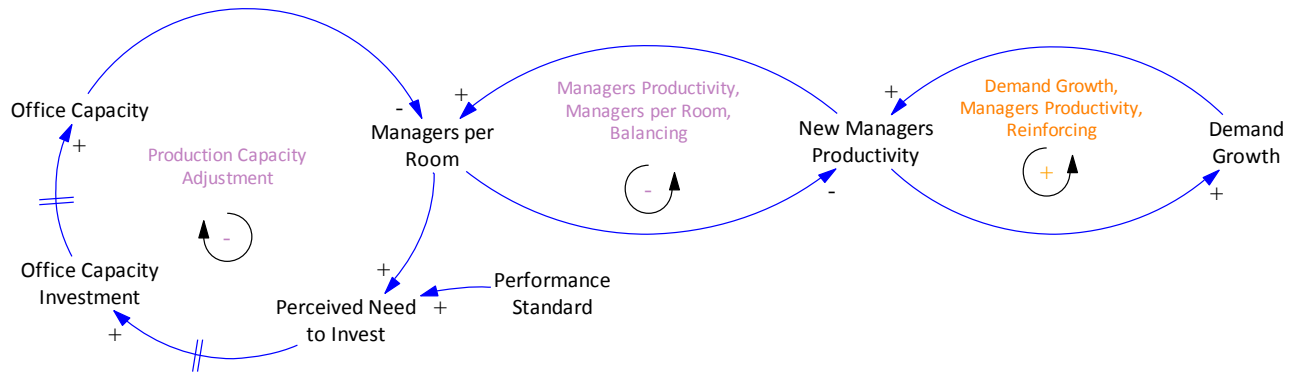


Figure 4.6.7: Winery F's Dynamic Hypothesis 3 Causal Loop Diagram

## 4.7 Winery G

### 4.7.1 Winery G's Main Perceived Challenges

Winery G's main challenges identified are:

- 1) To define and promote the winery brand (identified by the researcher).
- 2) The lack of vision for potential tasting room sales (identified by the researcher).
- 3) The lack of an effective commercial wine strategy.

### 4.7.2 Winery G's Reference Modes

Figure 4.7.1 below represents winery G's brand effectiveness reference mode. The winery brand increased in effectiveness during the first years of business before the increase in competition was substantially perceived in the market and before social media became a critical marketing and networking tool for companies. Since then, the winery has not invested in adjusting to these new circumstances and the winery brand has not been a driver of the winery's sales.

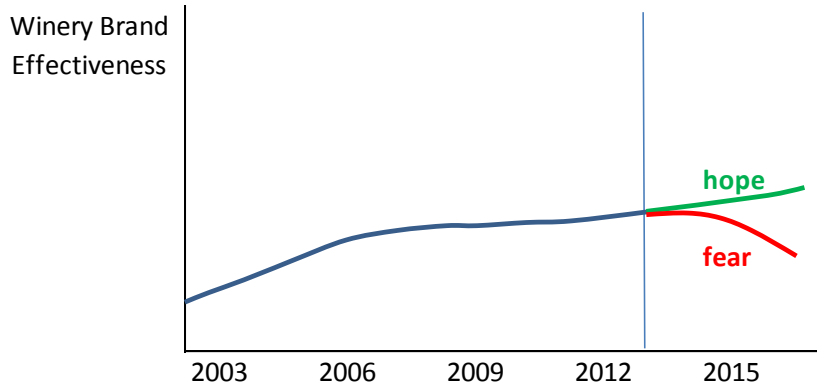


Figure 4.7.1: Winery G's Brand Effectiveness Reference Mode

Figure 4.7.2 below indicates winery G's reference mode related to its vision about the potential sales from its tasting room area. Since the winery started holding on-site and outside events and started delivering outside the winery, the managers' vision about the tasting room productivity has decreased.

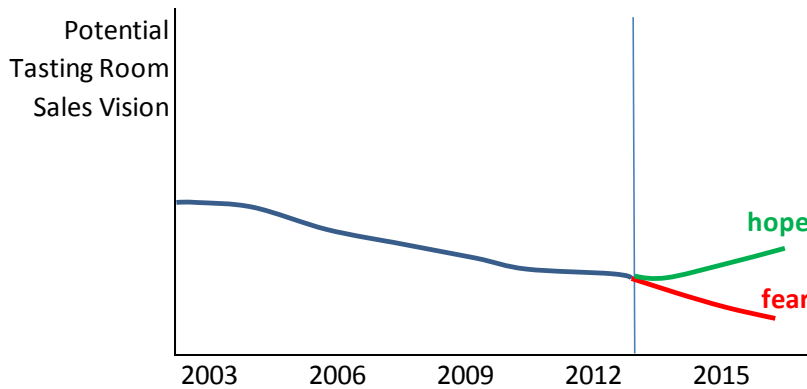


Figure 4.7.2: Winery G's Potential Tasting Room Sales Vision Reference Mode

Figure 4.7.3 below indicates winery G's reference mode related to its vision about the effectiveness of commercial wine strategies. The winery, during the initial years, invested in strategies to promote its wine. When the market started to get more competitive, affecting its sales, winery G's investment in effective commercial strategies started to decrease.

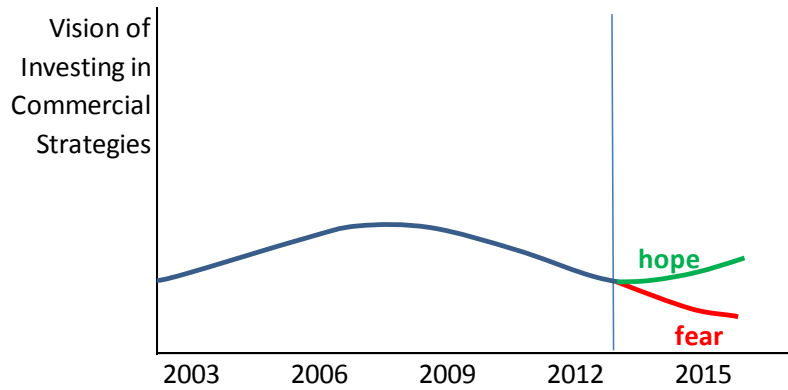


Figure 4.7.3: Winery G’s Vision of Investing in Commercial Strategies Reference Mode

**4.7.3 Winery G’s Dynamic Hypotheses**

Winery G’s dynamic hypotheses are:

H1: A brand that does not reflect the mission and values of the winery has a reduced ability to make profits.

H2: Small tasting area capacity decreases the winery’s ability to sell.

H3: Continued low levels of effort to develop wine sales reduces the winery’s profits.

**4.7.4 Winery G’s Winery Causal Loop Diagrams and Discussion**

Figure 4.7.4 below indicates winery G’s first dynamic hypothesis causal loop diagram. The winery tends to implement small promotional events as symptomatic responses to the low profit levels instead of investing in redefining and promoting its brand.

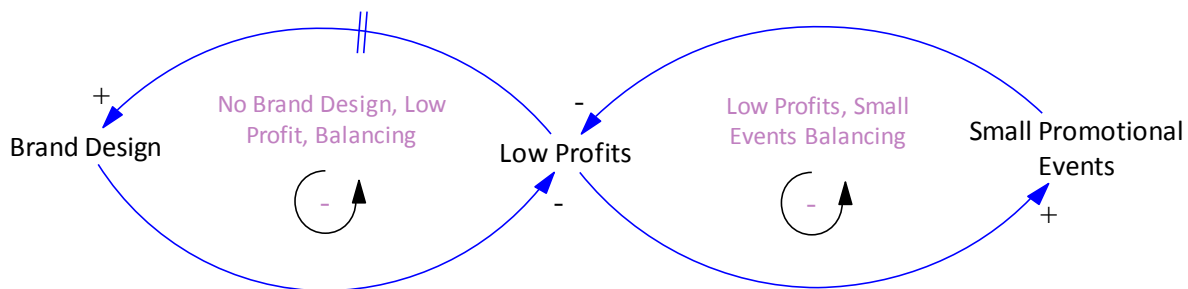


Figure 4.7.4: Winery G’s Dynamic Hypothesis 1 Causal Loop Diagram

Figure 4.7.5 below illustrates winery G's second dynamic hypothesis causal loop diagram. The winery's preference for increasing its retail sales is undermining its vision to increase its on-site sales via expanding its tasting room area.

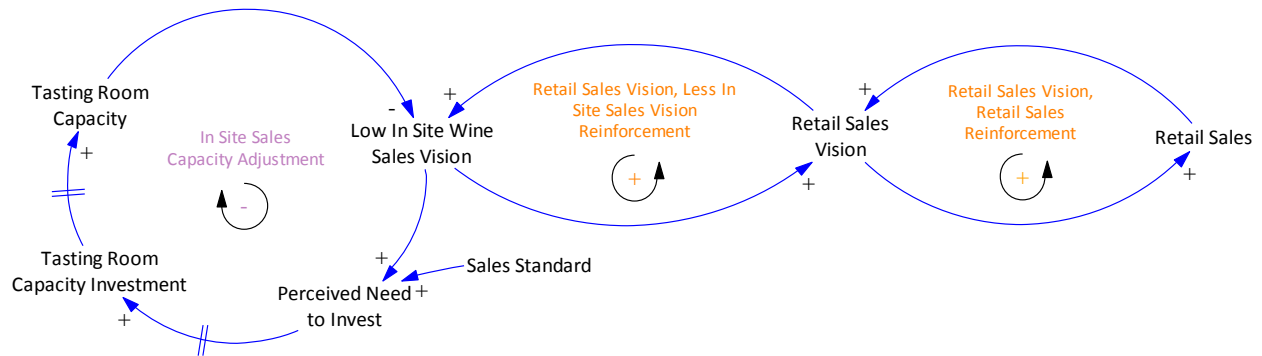


Figure 4.7.5: Winery G's Dynamic Hypothesis 2 Causal Loop Diagram

Figure 4.7.6 below indicates winery G's third dynamic hypothesis causal loop diagram. It is a "success to the successful" structure where the more resources allocated to the bed and breakfast part of the business, the less resources available to allocate to the winery and the less profitable it is to invest in the winery.

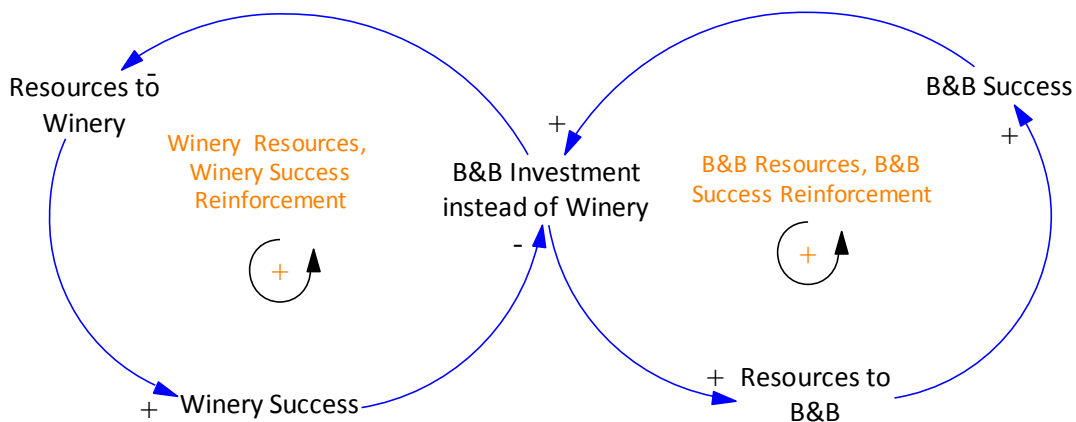


Figure 4.7.6: Winery G's Dynamic Hypothesis 3 Causal Loop Diagram

#### **4.7.5 Complementary Insights**

As White mentions (2010), it is often better to choose a site based on its potential for direct sales and attracting your ideal customers, rather than selecting based on the site's potential for growing grapes. An off-site tasting room could be an opportunity to capture new customers and increase their marketing.

### **4.8 Winery H**

#### **4.8.1 Winery H's Main Perceived Challenges**

Winery H's main challenges identified are:

- 1) The low perception of the importance to provide proper training, guidance and transmission of the winery's values and mission to the employees.
- 2) The low effectiveness of training, guidance and transmission of the winery values and mission to the employees.
- 3) Low attention given by winery sales representatives in other states to transmitting the winery values and mission to its customers.
- 4) Need to identify the proper margins of each winery stage.

#### **4.8.2 Winery H's Reference Modes**

Figure 4.8.1 below indicates winery H's reference mode about the winery managers' mental model related to the importance of employee management. The winery managers increased their perception about the importance of effective employee management especially during the last two years, after the winery experienced losses.

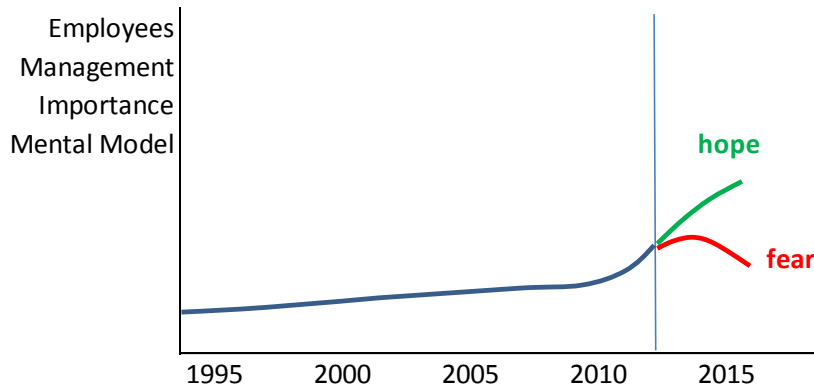


Figure 4.8.1: Winery H’s Employees Management Importance Mental Model Reference Mode

Figure 4.8.2 below indicates Winery H’s reference mode about its employees’ management enhancement. The winery started to enhance the effectiveness of its employee management around 2011 and 2012 after noticing its relevance for the winery’s profitability.

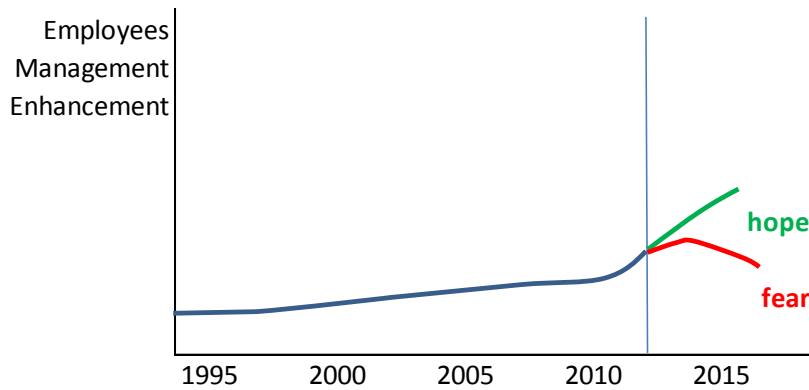


Figure 4.8.2: Winery H’s Employees Management Enhancement Reference Mode

Figure 4.8.3 below indicates winery H’s reference mode regarding the importance of the winery’s mission and values to its outside state sales representatives. The winery started stressing the importance of its mission and values to its out-of-state sales representatives in the last two years.



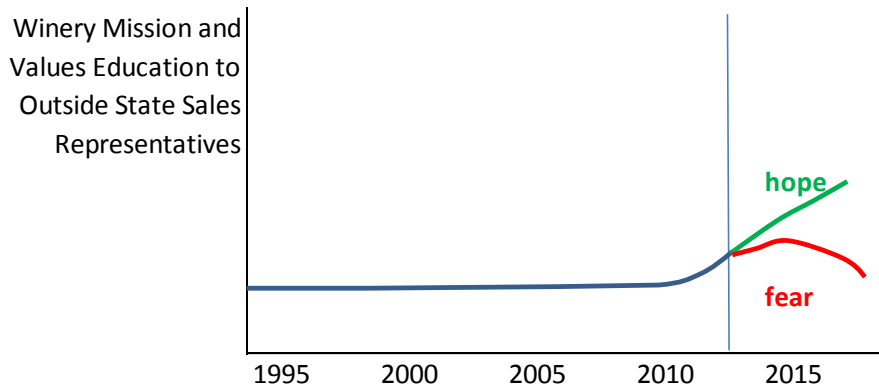


Figure 4.8.3: Winery H’s Reference Mode regarding the Winery’s Mission and Values Education to Outside State Sales Representatives

Figure 4.8.4 below indicates winery H’s reference mode regarding the effectiveness of its margins estimation. The winery implemented strategies in order to further estimate the costs of several parts of the production chain since 2005. However, costs for many components of the production process and the margins of the whole winery products remain to be estimated.

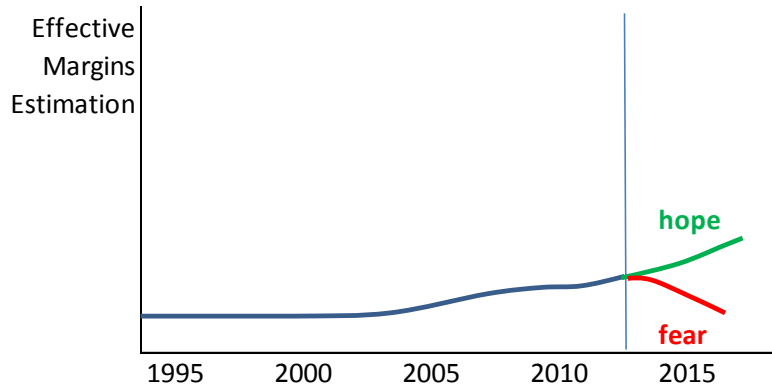


Figure 4.8.4: Winery H’s Effective Margins Estimation Reference Mode

#### 4.8.3 Winery H’s Dynamic Hypotheses

Winery H’s dynamic hypotheses are:

H1: Mental models that do not perceive the importance of effective employee management hinder winery profits.

H2: Low effective employee management hinders winery profits.

H3: Greater identification with the winery by out-of-state sales representatives enhances out-of-state sales.

H4: Poor knowledge about the winery’s margins hinders winery profits.

**4.8.4 Winery H’s Causal Loop Diagrams and Discussion**

Figure 4.8.5 below represents winery H’s first dynamic hypothesis causal loop diagram. The winery’s investment in production capacity and marketing increases its profits but the perception that effective employee management is not a priority hinders the winery’s ability to achieve its potential profits.

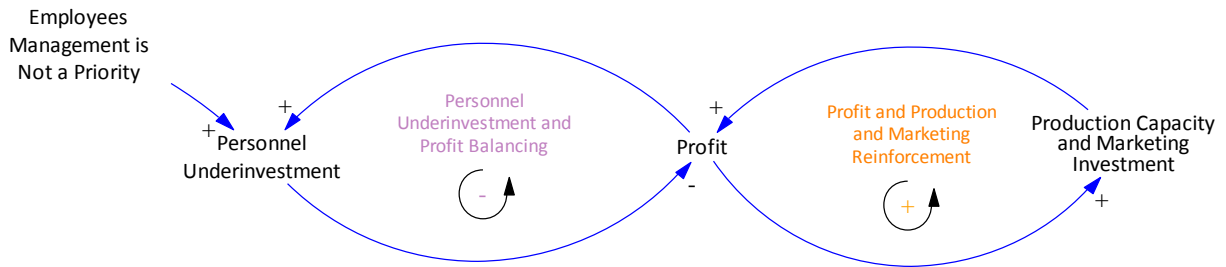


Figure 4.8.5: Winery H’s Dynamic Hypothesis 1 Causal Loop Diagram

Figure 4.8.6 below represents winery H second dynamic hypothesis causal loop diagram. The winery initial response to loses has been the redefinition of its brand and to invest more in marketing. A medium term strategy that would enhance the winery profits is to implement strategies for effectively managing its employees.

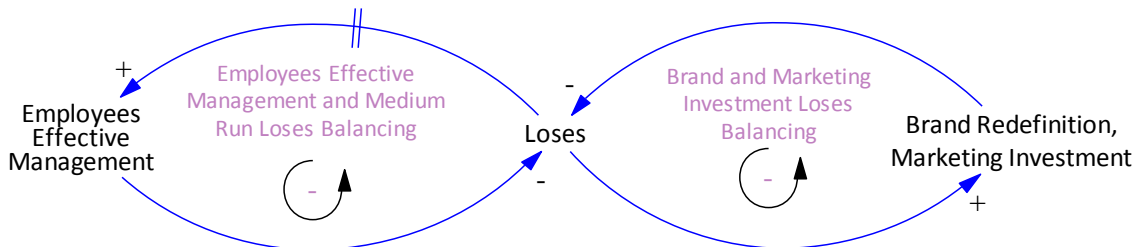


Figure 4.8.6: Winery H’s Dynamic Hypothesis 2 Causal Loop Diagram

Figure 4.8.7 below represents winery H's third dynamic hypothesis causal loop diagram.

Ineffective management of its out-of-state sales employees limits the level of out of state sales.

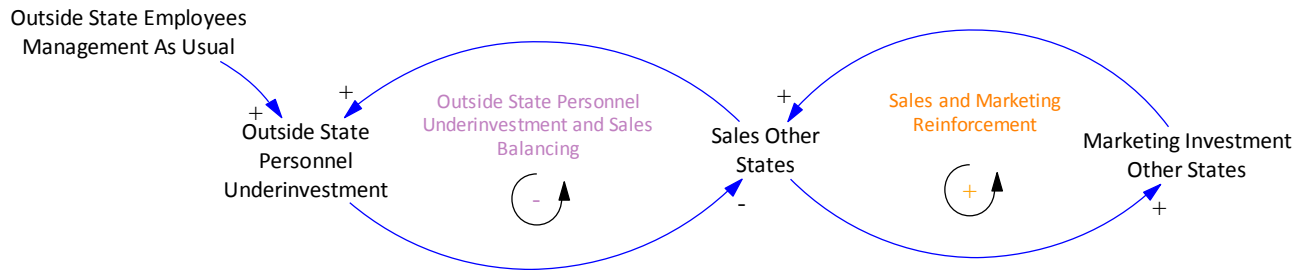


Figure 4.8.7: Winery H's Dynamic Hypothesis 3 Causal Loop Diagram

Figure 4.8.8 below represents winery H's fourth dynamic hypothesis causal loop diagram. The winery's limited knowledge of its costs at various stages of production as well as the margins of the different products and sales lines limit its profits below their potential.

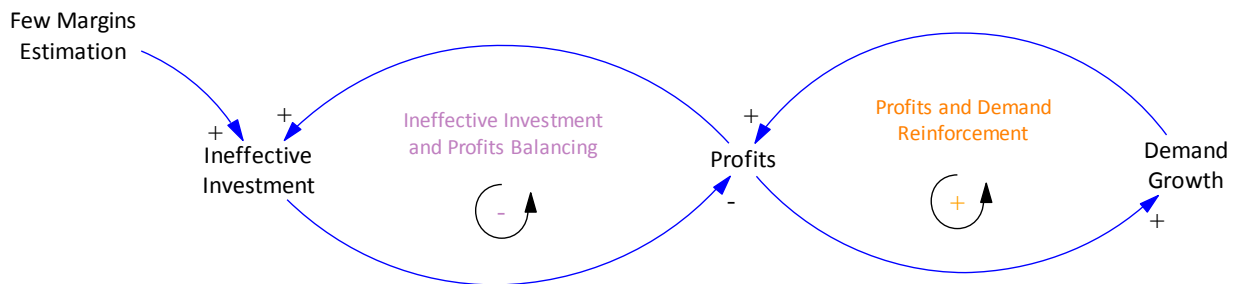


Figure 4.8.8: Winery H's Dynamic Hypothesis 4 Causal Loop Diagram

## 4.9 Winery I

### 4.9.1 Winery I's Main Perceived Challenges

Winery I's main challenges identified are:

- 1) The lack of a clear business plan and business vision.
- 2) The lack of a clear brand that suggests what they sell and to whom.
- 3) Low market knowledge about potential customers while wanting to expand sales.

#### 4.9.2 Winery I's Reference Modes

Figure 4.9.1 represents winery I's effective business plan and business vision reference mode. The winery has improved its business plan and vision somewhat since it opened but there are still some basic data and information needed in order for the winery to function effectively.

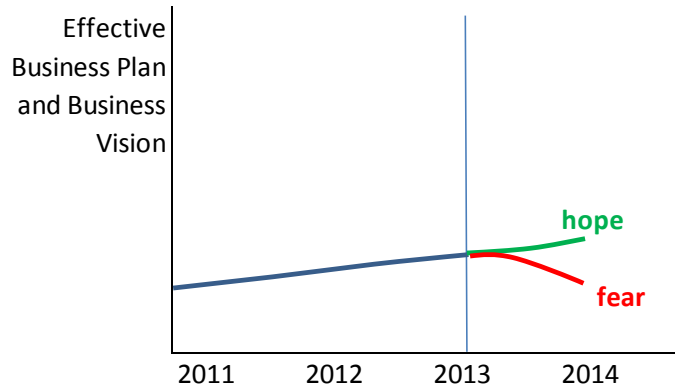


Figure 4.9.1: Winery I's Effective Business Plan and Business Vision Reference Mode

Figure 4.9.2 represents winery I's clear effective brand reference mode. The winery has improved its brand notion over the last two years but it still has to polish it and embed it into all the components of the business.

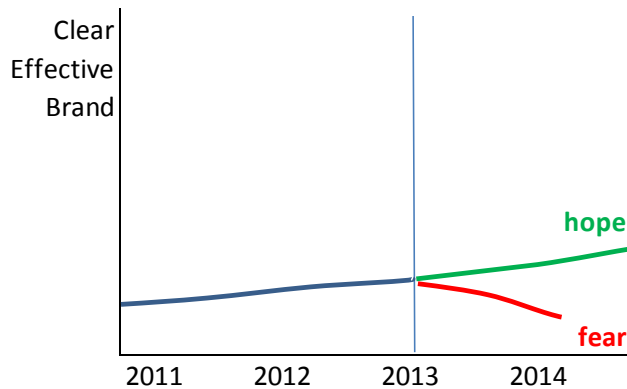


Figure 4.9.2: Winery I's Clear Effective Brand Reference Mode

Figure 4.9.3 represents winery I's reference mode regarding its knowledge about potential customers. The winery has improved its knowledge about the market and potential customers during the last two years but it is still in its novice stage in that regard.

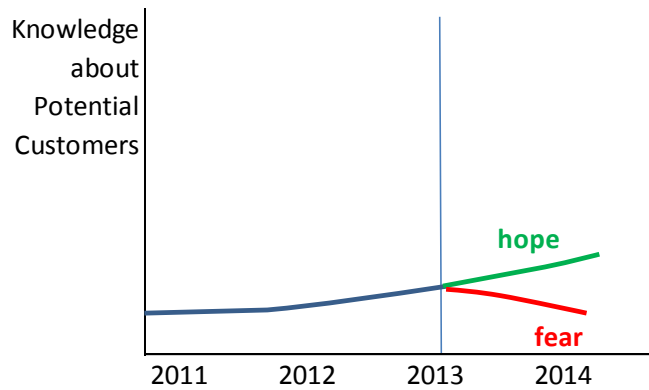


Figure 4.9.3: Winery I's Knowledge about Potential Customers Reference Mode

#### **4.9.3 Winery I's Dynamic Hypotheses**

Winery I's Dynamic Hypotheses are:

H1: An unclear business plan and business vision hinders the firm profits.

H2: A poorly defined brand hinders winery sales.

H3: Lack of market knowledge limits sales expansion.

#### **4.9.4 Winery I's Causal Loop Diagrams and Discussion**

Figure 4.9.4 illustrates Winery I's first dynamic hypothesis causal loop diagram. The lack of a clear business plan and business vision limits the winery's sales and increases the manager's need to get

business education.



Figure 4.9.4: Winery I's Dynamic Hypothesis 1 Causal Loop Diagram

Figure 4.9.5 illustrates Winery I's second dynamic hypothesis causal loop diagram. The winery's poorly defined brand limits its marketing effectiveness thus hindering sales.

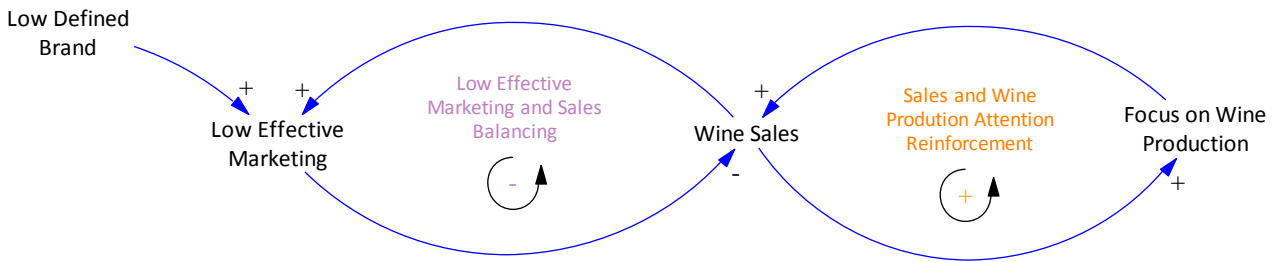


Figure 4.9.5: Winery I's Dynamic Hypothesis 2 Causal Loop Diagram

Figure 4.9.6 illustrates winery I's third dynamic hypothesis causal loop diagram. The managers' low market knowledge limits the effectiveness of their marketing and sales strategies, thus hindering the sales.

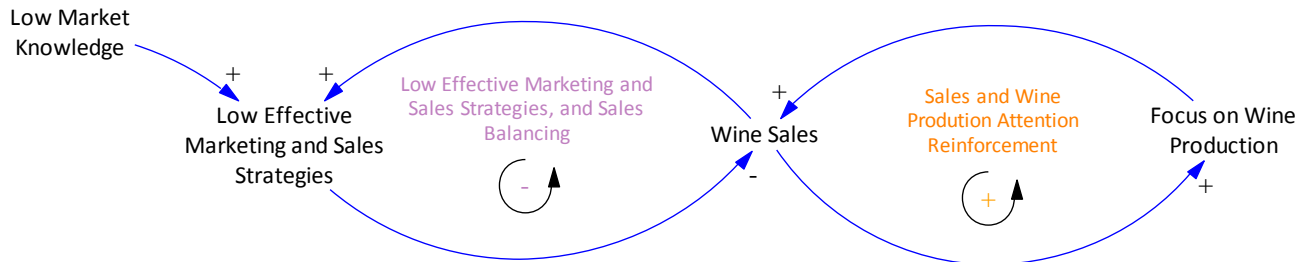


Figure 4.9.6: Winery I's Dynamic Hypothesis 3 Causal Loop Diagram

#### 4.9.5 Complementary Insights

Winery I would like to expand its sales in bigger nearby markets such as Kansas City and Columbia. Kansas City is a bigger and more stable wine market. Kansas City has a larger drinking age population and its population is more stable than Columbia. Furthermore, interest among Kansas City residents for local foods and organic products has grown substantially during the last five years and several restaurants, local stores and farmers' markets are meeting this demand. Hence, Winery I could substantially benefit by expanding its products in Kansas City. An important factor affecting this strategy is the volume of wine to be sold in the new place since their production is currently small and some restaurants may require more wine per month than the winery is able to supply.

#### 4.10 Empirical Research Aggregated Results

In this section the aggregated results from the face-to-face interviews and online survey are presented. First we identify the correlations between wineries' age and life-cycle and we see that wineries with less than 5 years of experience are in their development stage. Wineries that are between 5 to 8 years are in their growth stage, and wineries that are between 8 and 11 years old experience the decline/re-inventing tipping point.

Table 4.10.1: Wineries Years and Life-Cycle Stage

|          | Years | Life-Cycle           |
|----------|-------|----------------------|
| Winery A | 8     | Decline/Re-invention |
| Winery B | 3     | Development          |
| Winery C | 5     | Growth               |
| Winery D | 5     | Growth               |
| Winery E | 13    | Decline/Re-invention |
| Winery F | 5     | Growth               |
| Winery G | 10    | Decline/Re-invention |
| Winery H | 43    | Growth               |
| Winery I | 2     | Development          |

Source: Author's own elaboration from face-to-face interviews and online survey

Winery E with 13 years of experience is also facing the decline/re-invention phase. Finally, winery H with 43 years of experience is in a new cycle of growth. See table 4.10.2 for a summary of the results.

Table 4.10.2: Wineries Age and Life-Cycle Stage Typology

| Age     | Number of Wineries | Wineries' Life Cycle |
|---------|--------------------|----------------------|
| 0-4.9   | 2                  | Development          |
| 5-7.9   | 3                  | Growth               |
| 8-10.9  | 2                  | Decline              |
| 11-15.9 | 1                  | Decline              |
| >16     | 1                  | Growth               |

Source: Author's own elaboration from face-to-face interviews and online survey

The next two tables indicate the size of wineries based on the number of cases that sell per year and the type of activities that they engage. These are two different classifications to study wineries. Here we want to see if there is any correlation between wineries' size and the activities that they engage. Small wineries produce less than 15,000 cases per year and big wineries produce more than 100,000 cases per year based on mid-west and east coast standards. Results indicate that small wineries do not engage in as many activities as medium and big wineries. Particularly, some do not offer winery tours and do not host business related events. On the other side, the big winery distributes the wine through a national chain distributor. See tables 4.10.3 and 4.10.4 for a detail of all the activities engaged by each winery.

Table 4.10.3: Wineries Size

|      | Winery A | Winery B | Winery C | Winery D | Winery E | Winery F | Winery G | Winery H | Winery I |
|------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Size | Small    | Small    | Medium   | Medium   | Small    | Medium   | Small    | Big      | Small    |

Source: Author's own elaboration from face-to-face interviews and online survey



Table 4.10.4: Wineries Main Activities

| Activities             | Winery A | Winery B | Winery C | Winery D | Winery E | Winery F | Winery G | Winery H | Winery I |
|------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| grapes production      | 1        | 1        | 1        | 1        | 1        | 1        | 1        | 1        | 1        |
| several wines          | 1        | 1        | 1        | 1        | 1        | 1        | 1        | 1        | 1        |
| wines and other        | 0        | 1        | 1        | 1        | 1        | 1        | 1        | 1        | 1        |
| wine tasting           | 1        | 1        | 1        | 1        | 1        | 1        | 1        | 1        | 1        |
| winery tours           | 0        | 1        | 1        | 1        | 1        | 1        | 0        | 1        | 0        |
| winery events          |          |          |          |          |          |          |          |          |          |
| families/community     | 1        | 1        | 1        | 1        | 1        | 1        | 1        | 1        | 1        |
| businesses             | 0        | 0        | 0        | 1        | 0        | 0.5      | 0        | 0        | 0        |
| self-wine distribution | 1        | 1        | 1        | 1        | 0        | 1        | 1        | 0        | 1        |
| hostel service         | 0        | 1        | 0        | 1        | 0        | 0        | 1        | 0        | 0        |
| catering               | 0        | 1        | 0        | 1        | 0        | 0        | 0        | 0        | 0        |
| restaurant             | 0        | 1        | 0        | 0        | 0        | 1        | 1        | 0        | 0        |

Source: Author’s own elaboration from face-to-face interviews and online survey

Another interesting result is the difference of knowledge stock and knowledge inflows based on wineries’ size and activities engaged. Results indicate that small wineries have average lower levels of personal mastery, systems thinking and winery related knowledge. The small winery with higher knowledge stock is the one that in contrast with the other small wineries; it facilitates wine tours, and catering. There are no significant knowledge differences between medium and big wineries. In terms of knowledge inflow differences, small wineries tend to have a lower inflow of systemic thinking knowledge.

Table 4.10.4: Wineries Current Knowledge Stock Level and Inflows

| Knowledge Stocks and Inflows                 | Winery A | Winery B | Winery C | Winery D | Winery E | Winery F | Winery G | Winery H | Winery I |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Personal Mastery Knowledge (PMK)             | 50       | 70       | 70       | 85       | 60       | 70       | 65       | 75       | 65       |
| Group Learning Knowledge (GLK)               | 60       | 80       | 80       | 90       | 70       | 80       | 80       | 90       | 80       |
| Systems Thinking Knowledge (STK)             | 50       | 70       | 70       | 85       | 60       | 75       | 60       | 80       | 65       |
| Winery Related Knowledge (inside firm) (WRK) | 50       | 70       | 70       | 85       | 60       | 85       | 60       | 85       | 60       |
| Inflow Rate PMK                              | 10       | 70       | 70       | 80       | 60       | 70       | 60       | 70       | 80       |
| Inflow Rate GLK                              | 70       | 70       | 60       | 80       | 60       | 70       | 60       | 70       | 80       |
| Inflow Rate STK                              | 60       | 70       | 80       | 70       | 50       | 80       | 40       | 80       | 70       |
| Inflow Rate WRK (inside firm)                | 80       | 70       | 80       | 80       | 60       | 80       | 70       | 80       | 70       |

Source: Author’s own elaboration from face-to-face interviews and online survey

In terms of wineries engagement with social and environmental goals results indicate that small wineries tend to have bigger economic goals gaps. This may be related to the lower level of winery

related knowledge and systemic knowledge. The disparity of social goals gaps among wineries sizes is not as big as the disparity of economic goals gaps; however, medium wineries report smaller social goals gaps than small and big wineries. This higher performance may be associated to their higher level of winery related knowledge and systemic knowledge. There is no significant difference among wineries in terms of the level of environmental goals gap.

**Table 4.10.5: Wineries Current Goals Gaps Levels**

| Goals Gaps Levels*             | Winery A | Winery B | Winery C | Winery D | Winery E | Winery F | Winery G | Winery H | Winery I |
|--------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Winery Economic Goals Gap      | 6.0      | 4.0      | 5.0      | 1.0      | 6.0      | 0.1      | 5.0      | 1.0      | 3.0      |
| Winery Social Goals Gap        | 1.0      | 0.5      | 0.5      | 0.1      | 2.0      | 1.5      | 5.0      | 2.0      | 2.0      |
| Winery Environmental Goals Gap | 1.0      | 1.0      | 0.5      | 1.0      | 1.0      | 1.0      | 0.0      | 1.0      | 1.0      |

\* Goals gaps range from 0 to 10

Source: Author’s own elaboration from face-to-face interviews and online survey

Results related with the level of entrepreneurs risk aversion indicate that entrepreneurs from small wineries tend to be more risk averse than entrepreneurs from medium and big wineries.

Entrepreneurs from small wineries that are low risk averse tend to engage with more activities than the other entrepreneurs of small wineries. Furthermore, entrepreneurs of small wineries with comparatively lower risk aversion levels than the other small wineries entrepreneurs experience lower economic goals gap than their peers.

**Table 4.10.6: Wineries’ Entrepreneurs Level of Risk Aversion**

| Risk Aversion Level* | Winery A | Winery B | Winery C | Winery D | Winery E | Winery F | Winery G | Winery H | Winery I |
|----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Risk Aversion        | 9        | 2        | 2        | 1        | 8        | 3        | 6        | 3        | 3        |

\*Risk aversion level ranges from 0 to 10, 10 being very risk averse

Source: Author’s own elaboration from face-to-face interviews and online survey

A similar pattern is identified when studying the level of uncertainty bearing among entrepreneurs from different winery sizes and levels of activity engagement. The same small wineries entrepreneurs that show lower level of risk aversion indicate to experience higher ability to bear uncertainty (as entrepreneurs from medium and big size wineries experience). As it has been indicated

with the study of risk aversion, these entrepreneurs with higher ability to bear uncertainty experience lower economic goals gaps.

Table 4.10.7: Wineries’ Entrepreneurs Uncertainty Bearing Level

| Uncertainty Bearing Level* | Winery A | Winery B | Winery C | Winery D | Winery E | Winery F | Winery G | Winery H | Winery I |
|----------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Uncertainty Bearing        | 3        | 6        | 7        | 7        | 1        | 5        | 3        | 6        | 5        |

\*Uncertainty bearing level ranges from 0 to 10, 10 being very able to bear uncertainty

Source: Author’s own elaboration from face-to-face interviews and online survey

All wineries seem to experience a quite satisfactory relationship level with customers and personnel. However, medium and big wineries experience higher optimal relationship levels with government officials than do small wineries. Nonetheless, there is one small winery that also experiences a quite optimal relationship with government officials. Interestingly, this winery is the one that its entrepreneur has a low level of risk aversion and that experiences a comparatively higher level of winery knowledge and systemic knowledge.

Table 4.10.7: Wineries’ Level of Optimal Relationship Achieved with Customers, Government Officials and Personnel

| Level of Optimal Relationship Achieved with*: | Winery A | Winery B | Winery C | Winery D | Winery E | Winery F | Winery G | Winery H | Winery I |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Customers                                     | 7.0      | 8.0      | 8.0      | 8.5      | 4.0      | 7.0      | 6.5      | 8.0      | 8.0      |
| Government Officials                          | 2.0      | 7.0      | 8.0      | 9.5      | 1.0      | 8.0      | 1.0      | 8.0      | 1.0      |
| Personnel                                     | 7.0      | 7.0      | 7.0      | 9.5      | 6.0      | 7.5      | 7.0      | 8.0      | 8.0      |

\*the range goes from 0 to 10, 10 means that the relationship experienced the optimal one (desired one)

Source: Author’s own elaboration from face-to-face interviews and online survey

There is no significant difference among wineries in terms of their level of interaction/communication among all leaders.

Table 4.10.8: Wineries’ Level of Interaction/Communication among Leaders

|   | Winery A | Winery B | Winery C | Winery D | Winery E | Winery F | Winery G | Winery H | Winery I |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Level of Interaction/Communication among all Leaders: | 7        | 8        | 8        | 9        | 7        | 7        | 8        | 8        | 9        |

\*the range goes from 0 to 10, 10 means that the level of interaction/communication among leaders is optimal.

Source: Author’s own elaboration from face-to-face interviews and online survey

Results from the questions related with asset uniqueness and the level of imitability of certain resources and strategies indicate that medium and big wineries have a higher ability to implement unique strategies that provide further knowledge to the winery. Also, one of the medium wineries and the big winery also have a higher ability to implement unique strategies that measure the level of certain intangible assets.

Table 4.9.10: Wineries’ Asset Uniqueness Level and Low Imitability Level

| Asset uniqueness/low imitability:                            | Winery A | Winery B | Winery C | Winery D | Winery E | Winery F | Winery G | Winery H | Winery I |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| imitability of goals   | 7        | 8        | 6        | 8        | 8        | 8        | 7        | 8        | 5        |
| managers/employees relationships unique                      | 8        | 8        | 6        | 9        | 5        | 8        | 8        | 6        | 7        |
| winery/suppliers and distributors relationships unique       | 7        | 8        | 6        | 8        | 2        | 2        | 4        | 3        | 3        |
| strategies to generate knowledge imitability level           | 1        | 3        | 5        | 5        | 1        | 3        | 1        | 6        | 1        |
| strategies for measuring intangible assets imitability level | 1        | 1        | 3        | 2        | 1        | 2        | 1        | 3        | 1        |

\*the range goes from 0 to 10, 10 means that the level of asset uniqueness is very high, or that the level of imitability is very low.

Source: Author’s own elaboration from face-to-face interviews and online survey

The last table with aggregated results from the face-to-face interviews and online survey indicates that most of the wineries, especially the medium sized wineries and big winery, are willing to expand the resources allocated towards social goals. Two medium-sized wineries and a small winery want to expand their services towards businesses so that meetings and events can take place at the winery as well. Finally, two small wineries want to expand the variety and quality of the food that they provide.

Table 4.10.4.10: Wineries' Willingness to Diversify Activities

| Willingness to diversify  | Winery A | Winery B | Winery C | Winery D | Winery E | Winery F | Winery G | Winery H | Winery I |
|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| grapes production         | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| several wines             | 1        | 1        | 1        | 1        | 1        | 1        | 1        | 1        | 0        |
| wines and other beverages | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| wine tasting              | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| winery tours              | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| winery events             | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| families/community        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| green                     | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 1        | 0        |
| social                    | 0        | 1        | 1        | 1        | 0        | 1        | 0        | 1        | 1        |
| businesses                | 0        | 1        | 1        | 0        | 0        | 1        | 0        | 0        | 0        |
| self-wine distribution    | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| hostel service            | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| catering                  | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| restaurant                | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        |
| food provision            | 0        | 0        | 0        | 0        | 1        | 0        | 0        | 0        | 1        |

Source: Author's own elaboration from face-to-face interviews and online survey

#### 4.11 Simulation Results

The simulation model is build using the information from one of the small wineries studied and studies the reason why this small winery struggles expanding its goals towards social and environmental goals so that it can fully satisfy its customer preferences. The underlying structure of the present model can be used to study the reason why this phenomenon is being faced by other small wineries. The main variables identified from the empirical research that affect the current portfolio of the small winery goals are: (a) low profits, (b) an unclear business vision, (c) high risk aversion, (d) low knowledge, (e) low well-being, and (f) low ability to recognize opportunities. These variables first affect entrepreneurship and leadership effectiveness, affecting the winery's ability to satisfy customer preferences by setting the right goals balance between economic, social and environmental targets.

The simulation model has been developed under the Vensim software<sup>7</sup>. Vensim uses Euler's method in order to solve the system of simultaneous non-linear equations. Several tests have been applied in order to ensure the robustness of the model (Sterman 2000). First of all, boundary adequacy tests have been conducted and it has been identified that the important concepts for addressing the problem are endogenous to the model. The model behavior does not change when boundary assumptions are relaxed and strategy recommendations do not change when the model boundary is extended.

Structure assessment tests have been conducted and the model structure is proved to be consistent with relevant descriptive knowledge of the systems presented. The model also conforms to units' consistency and the relationships among the scales used to measure intangible variables are coherent and conform to empirical evidence. Finally, the decision rules adequately capture the behavior of the actors in the system.

Dimensional consistency is also guaranteed since all the data is extrapolated at the winery level from the 7 point Likert scale used in the face-to-face interviews and online survey and from the coding process used for the open ended questions. Furthermore, as the theory presented behind each variable and their relationships indicates all parameters have a real world counterpart.

Extreme conditions tests have been applied under several extreme scenarios – no profits, zero well-being initial level, full productivity and output quality level, among others; and the model has been proved to be robust.

Finally, the model reproduces the behavior of interest in the system. The reference modes are reproduced under the model initial conditions as it can be seen in the figures below.

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<sup>7</sup> More information about Vensim can be found at: <http://vensim.com/>

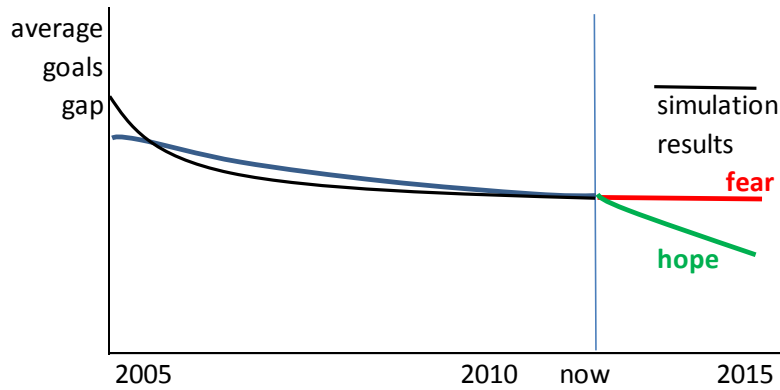


Figure 4.11.1: Small Winery Average Goals Gap Estimated and Simulated Reference Modes

The average level of disparity between the equilibrium goals (the goals that are in accordance with consumer preferences) and the current goals of the small winery has been slowly reduced but there is still a significant gap. The values are represented in absolute numbers in order to properly compare the model results with the original reference mode. The level of winery related knowledge has been increasing slowly since the winery opened; however, it is reaching a point of stagnation.

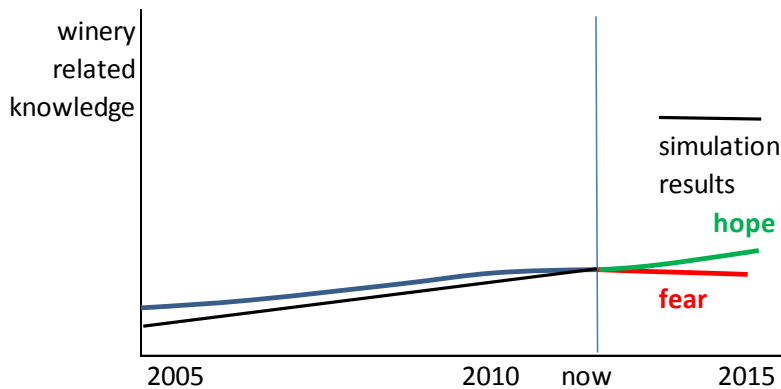


Figure 4.11.2: Small Winery Level of Winery Related Knowledge Estimated and Simulated Reference Modes

The small winery entrepreneur experiences a high level of risk aversion and a low level of opportunity recognition. The values of these variables have not changed since the winery opened and are not expected to change during the near future considered in the simulation model.

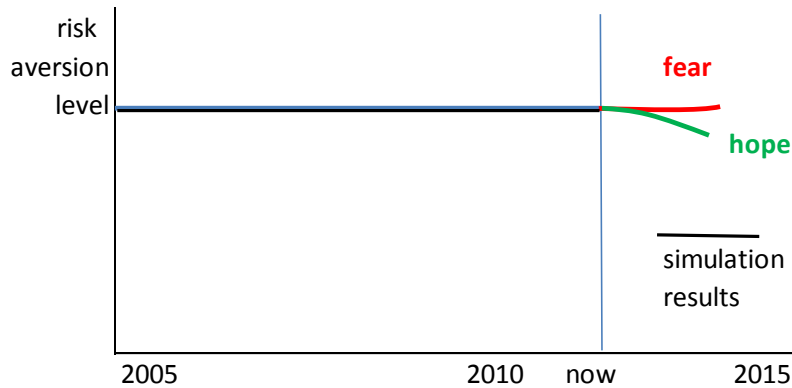


Figure 4.11.3: Small Winery Level of Risk Aversion Estimated and Simulated Reference Modes

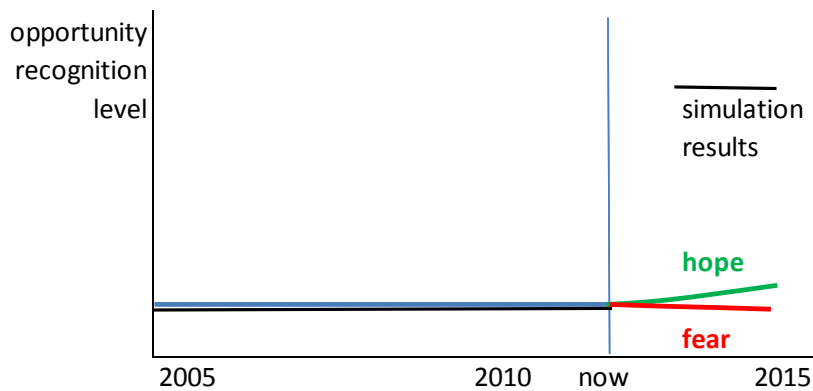


Figure 4.11.4: Small Winery Level of Opportunity Recognition Estimated and Simulated Reference Modes

In order to test the dynamic hypotheses posited in section 3.3<sup>8</sup> several simulations are conducted. The first scenario considers the situation in which the winery barely breaks even, in contrast to the baseline scenario where the winery enjoys profits. Simulation results indicate that when the winery barely breaks even it retains its initial goals distribution (mainly efficiency/economic goals) and it is not able to adjust its goals to satisfy customer preferences. As a result, customers social and environmental preferences

<sup>8</sup> The dynamic hypotheses posited are:

- H1: The low level of goals diversification over time is partially caused by the low or negative level of profits.
- H2: The average level of goals gap has been reducing slowly and at a low degree due to the entrepreneur's low level of winery related knowledge.
- H3: The average level of goals gap has been reducing slowly and at a low degree due to the entrepreneur's decreasing well-being level.
- H4: The average level of goals gap has been reducing slowly and at a low degree due to the entrepreneur's high level of risk aversion.
- H5: The average level of goals gap has been reducing slowly and at a low degree due to the entrepreneur's low level of opportunity recognition.



are not met and there is an over commitment to efficiency goals. On the other hand, when the winery enjoys profits, there is a convergence between the winery goals and customer preferences, especially regarding efficiency and social goals. The convergence between the winery's environmental goals and customer environmental preferences is substantially slower mainly due to two factors: (a) the perception that environmental investments do not payoff soon (since customers are not willing to pay more for "eco-labeled wines", and/or the cost savings are low), and (b) the word-of-mouth effect related to green goals is small and not that many new customers are gained. Figures 4.11.5 to 4.11.7 illustrate the behavior of a small winery triple bottom line when enjoying profits and when barely breaking even. The winery studied starts with the goals distribution of: efficiency (0.85), social (0.13), and environmental (0.02); and customer preferences are: efficiency (0.6), social (0.25), and environmental (0.15). The simulation results validate the first dynamic hypothesis, when the small winery barely breaks even it does not allocate resources to satisfy the social and environmental goals valued by its customers and just focuses on the efficiency/economic goals.

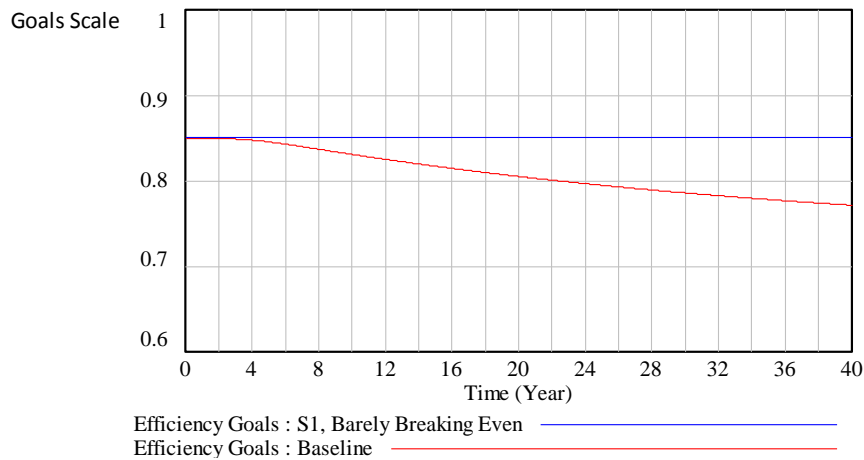


Figure 4.11.5: Winery Efficiency Goals When Barely Breaking Even

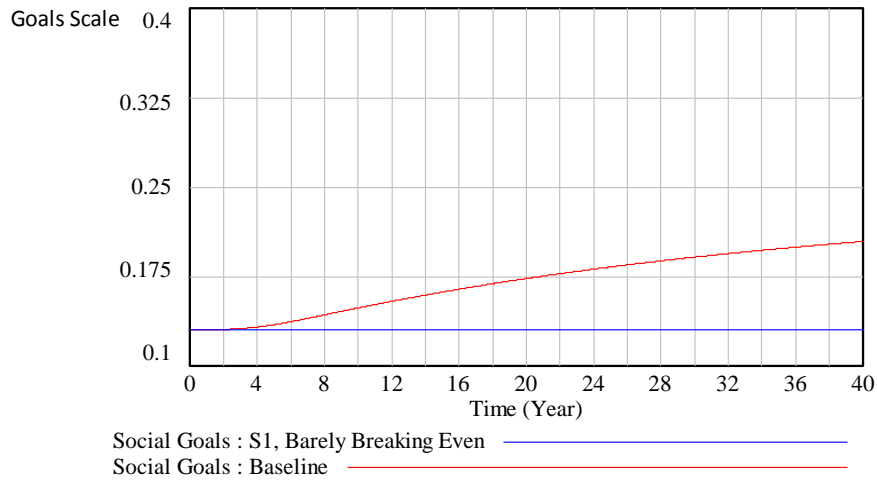


Figure 4.11.6: Winery Social Goals When Barely Breaking Even

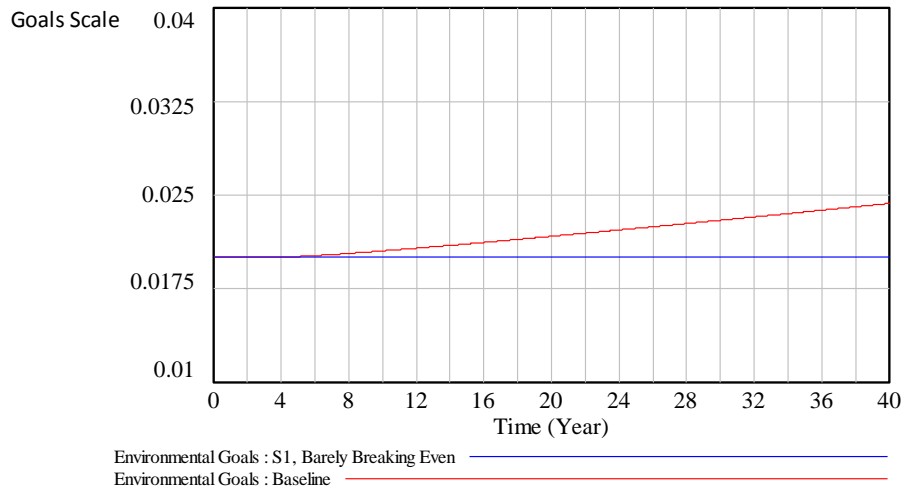


Figure 4.11.7: Winery Environmental Goals When Barely Breaking Even

The second scenario considers the case where winery entrepreneur has an average level of risk aversion instead of being substantially risk averse. In the case studied, the entrepreneur does not invest despite visible investment opportunities and as a result the winery sets its goals at lower levels. Simulation results indicate that high risk aversion limits the small winery ability to satisfy customers, leaving a gap between the winery’s goals and customer’s preferences.

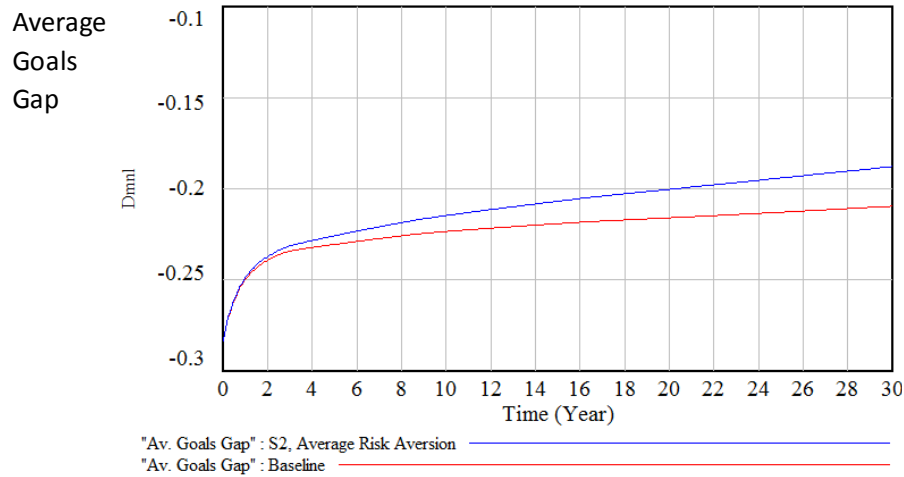


Figure 4.11.8: Effect of Levels of Risk Aversion on Average Goals Gap Scale

The third scenario considers the initial condition of having little knowledge about the winery business and its proper management and about its market; and it compares it with a situation where the entrepreneur and its employees have an average knowledge about its business, its management and the market. Simulations indicate that entrepreneurship and leadership effectiveness levels are lower when the winery related knowledge is low and that the effectiveness levels converge towards the scenario considered slowly. As a result, the average goals gap is higher when the winery related knowledge is low than when the winery related knowledge is average.

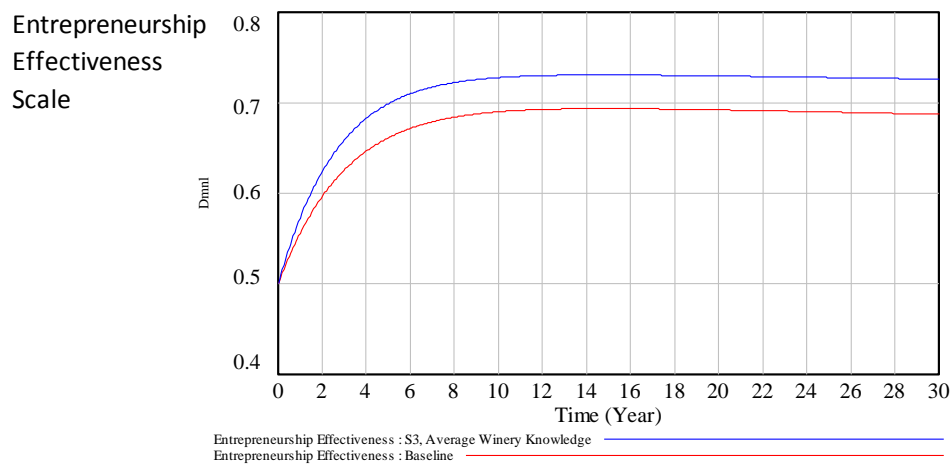


Figure 4.11.9: Entrepreneurship Effectiveness under Ranges of Knowledge

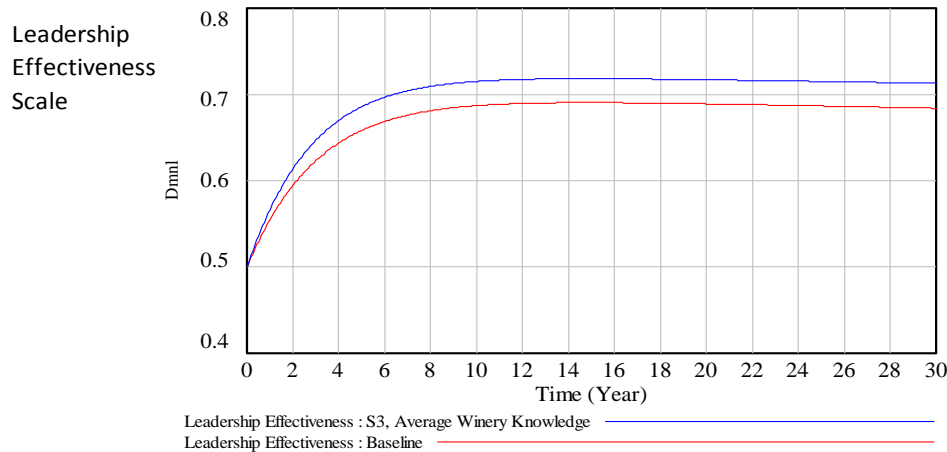


Figure 4.11.10: Leadership Effectiveness under Ranges of Knowledge

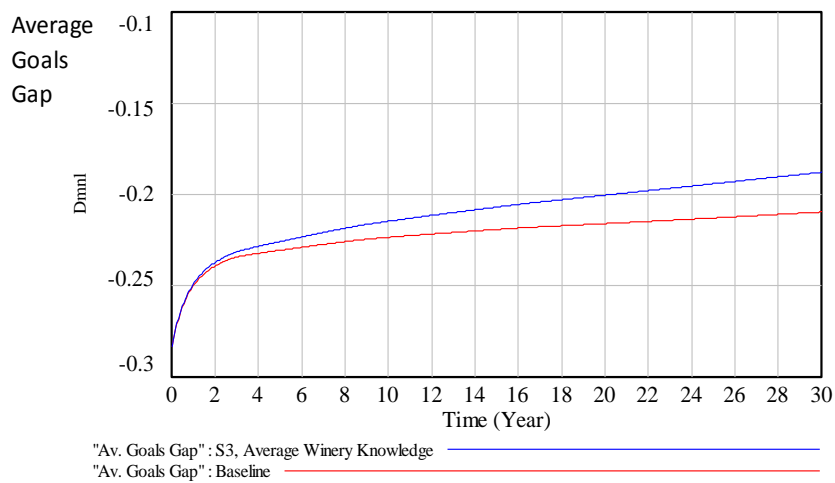


Figure 4.11.11: Leadership Effectiveness under Ranges of Knowledge

The fourth scenario assumes the initial condition that winery entrepreneur enjoys an average level of well-being instead of not being fully physically healthy or being emotionally or mentally frequently distressed as it is the case of the small winery entrepreneur. As a result under scenario fourth, the entrepreneur well-being mechanism operates according to a “hill-climbing” structure instead of a “goal erosion” structure. Simulations indicate that under low initial well-being levels entrepreneurship and leadership effectiveness levels are substantially reduced, limiting the winery ability to reduce its goals gaps and satisfy customer preferences. Furthermore, since the initial well-

being level is very low, entrepreneurship and leadership effectiveness levels do not reach the scenario four level because the entrepreneur sets its goals at lower levels of effectiveness.

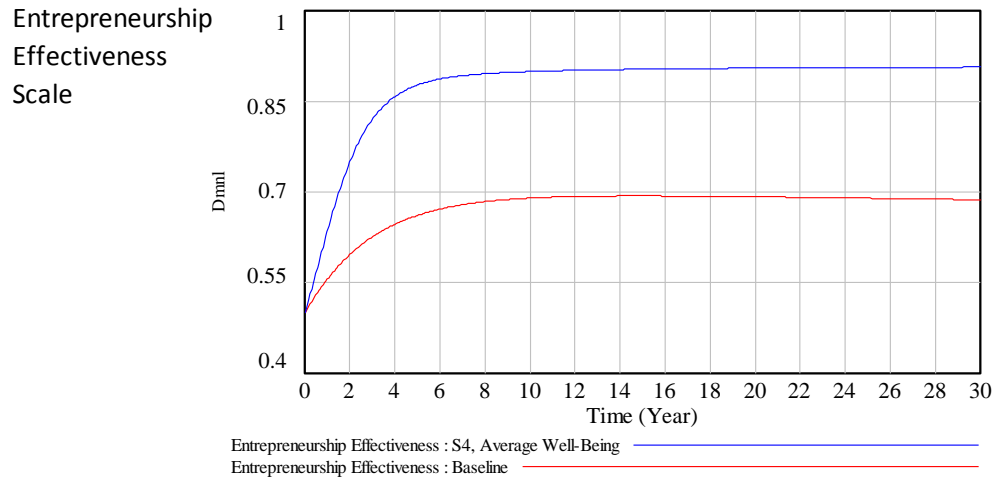


Figure 4.11.12: Effect of Well-Being on Entrepreneurship Effectiveness

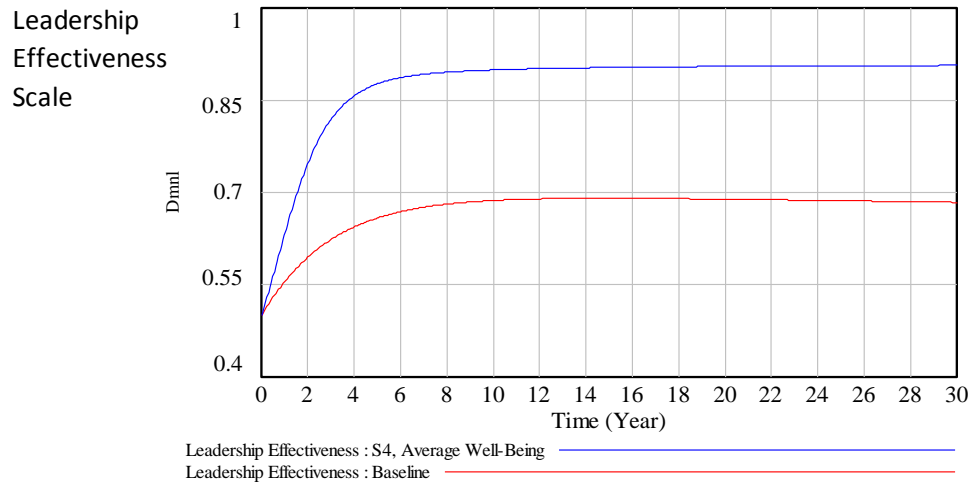


Figure 4.11.13: Effect of Well-Being on Leadership Effectiveness

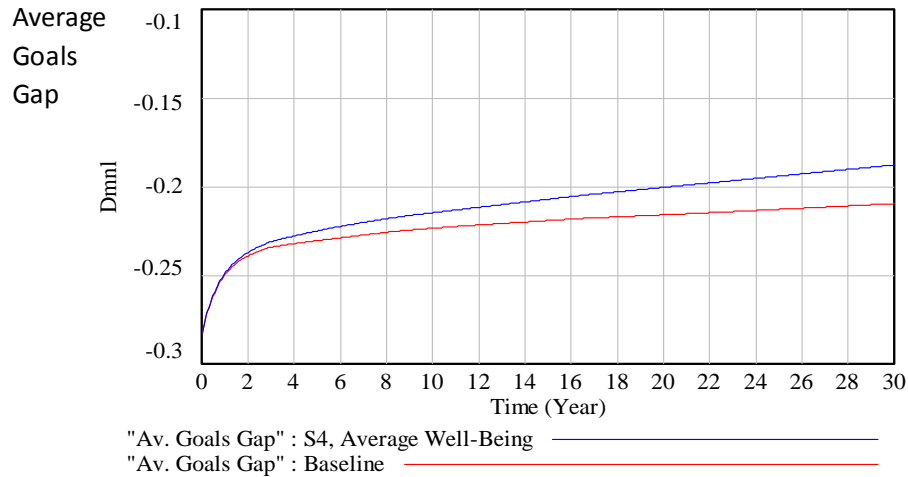


Figure 4.11.14: Effect of Well-Being on Average Goals Gap

The last scenario considers the situation where the entrepreneur has an average ability to identify opportunities instead of a low level of opportunities recognition as it is the case of the small winery. The simulation results indicate that entrepreneurship effectiveness is higher when the entrepreneur has an average level of opportunities recognition, the level of effectiveness is around 0.74 instead of 0.68 when the level of opportunities recognition is low.

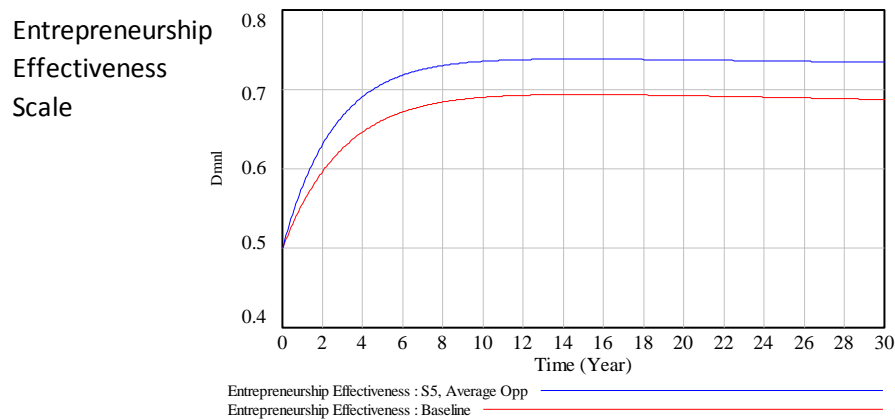


Figure 4.11.15: Levels of Ability to Recognize Opportunities Effect on Entrepreneurship Effectiveness

#### 4.12 Results and Conclusion

The main initial results from the face-to-face wineries interviews, online surveys, observation and complementary documents gathered are summarized in the below table.

Table 4.11.1: Empirical Research Initial Aggregated Results

|  |
|--|
| 1. Wineries that are between 8 and 11 years old experience the decline/re-inventing tipping point  |
| 2. Small wineries do not engage in as many activities as medium and big wineries   |
| 3. Small wineries have average lower levels of personal mastery, systems thinking and winery related knowledge. There are no significant knowledge differences between medium and big wineries.  |
| 4. Small wineries tend to have bigger economic goals gaps.   |
| 5. The disparity of social goals gaps among wineries sizes is not as big as the disparity of economic goals gaps; however, medium wineries report smaller social goals gaps than small and big wineries.                                   |
| 6. There is no significant difference among wineries in terms of the level of environmental goals gap.   |
| 7. Entrepreneurs from small wineries tend to be more risk averse than entrepreneurs from medium and big wineries   |
| 8. Entrepreneurs from small wineries that are low risk averse tend to engage with more activities than the other small wineries entrepreneurs and experience lower economic goals gap than their peers.                                    |
| 9. The same small wineries entrepreneurs that show lower level of risk aversion indicate to experience higher ability to bear uncertainty (as entrepreneurs from medium and big size wineries experience).                                 |
| 10. All wineries seem to experience a quite satisfactory relationship level with customers and personnel. However, medium and big wineries experience higher optimal relationship levels with government officials than do small wineries. |
| 11. There is no significant difference among wineries in terms of their level of interaction/communication among all leaders.  |
| 12. Medium and big wineries have a higher ability to implement unique strategies that provide further knowledge to the winery.   |
| 13. Most wineries, especially the medium sized wineries and big winery, are willing to expand the resources allocated towards social goals.  |

Source: Author's Own Elaboration

The empirical research presented indicates that the main challenges faced by wineries are related to three types of behavioral patterns: (a) shifting the burden, (b) misunderstanding the success process, and (c) underinvesting in growth. Some wineries are aware of all the main challenges currently in place. However, some are not aware of some important obstacles that are limiting their success. The wineries studied are more aware of the challenges that the market presents, or the challenges that they face in

terms of their production process, financial management, and general operational issues. In contrast, the wineries studied are less aware of the challenges caused by: (a) the lack of a clear definition of the winery's mission, values and identity; (b) the low level of brand adequacy; (c) obstacles to learning; and (d) the lack of sound reasoning behind some strategic decisions.

The nature of the behavioral pattern referred to as "shifting the burden" is a tendency to address the symptoms of problems, rather than focusing on the fundamental causes of the problem. Shifting the burden leaves the origin of the problem in place and as a result the symptoms continue. There are several reasons why this particular behavioral pattern is so common. The most common reason for "shifting the burden" is the overall failure to realize the ultimate cause of issues. Many businesses are completely unaware that they are addressing symptoms of a problem, rather than finding a solution to the underlying cause of the problem. However, in some cases there is an awareness of the ultimate cause, but pressures to achieve a faster solution lead management to address only the current symptoms. If the ultimate cause is not addressed, the same or similar symptoms will emerge again, and most likely with increased intensity and consequences.

The "shifting the burden" behavior of winery managers is the general tendency to focus the majority of their attention on the production side of the business when they really need to increase sales. This leaves the sales side comparatively unattended. Three of the nine wineries tended to focus mainly on increasing sales by increasing their production possibilities. They consequently left the definition of the winery's mission, values, brand and marketing approach practically undeveloped. This substantially limits the achievement of their goal to expand their sales. Two of the nine wineries "shift the burden" from developing effective accounting and financial indicators to increasing production and marketing as a way of expanding their sales. As a consequence they leave their economic and financial pillars substantially unattended. Three of the nine wineries "shift the burden" from a clear business



vision to increased production. The primary focus of these wineries is mainly on increasing their sales level, but they have a poor idea of where they want the winery to go, what customers they are targeting, and how to achieve these ends. Finally, three of the nine wineries studied are not aware that they “shift the burden” away from attending their website, which has become out-of-date and comparatively less attractive to customers, by mainly focusing on increasing production. Hence, these wineries focus mainly on increasing their production in order to increase their sales level and leave unattended their website which is their primary means for reaching new and current customers.

A “misunderstanding the success process” behavior occurs when the winery focuses its attention only on the strategies that have been partially effective in enhancing the desired performance in the past without noticing that there is a limiting factor unrelated to their current strategy that is blocking the achievement of desired performance. Normally, when this limiting factor is reduced, the desired performance is more effectively achieved.

The “misunderstanding the success process” behavior experienced by the nine wineries studied involves two main areas: (a) the wine market, and (b) the winery managerial practices. The market related “misunderstanding the success process” behavior was experienced by all the wineries studied. There are several limiting factors that must be reduced in order to increase wine sales. Some of these factors relate to the wine market’s rules of the game. Most managers, instead of addressing the wine market’s rules of the game or identifying how to go around them, focus on negotiating with the distribution agents in order to get better deals and keep the limiting factor in place<sup>9</sup>. Two other market related “misunderstanding the success process” behaviors concern the winery’s access to grapes and their ability to increase sales given the new, better located wineries operating in the same market. In

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<sup>9</sup> This behavior is also related to the behavior named “shifting the burden”. Sometimes the behavioral archetypes overlap.

this case, new sources of provision need to be considered, and new sources of competitive advantage should be identified, instead of keeping the same business as usual strategies.

There are three main managerial related “misunderstanding the success process” patterns that are identified by the wineries. Five of the nine wineries indicated that they would like to increase their sales outside the winery, but they are not allocating the necessary resources to analyzing their potential markets. Instead, they try to increase their outside winery sales by applying the same strategies that they have always implemented; hoping that better results will come from them. One winery indicated that its inventory is not being effectively managed which is increasing its operating costs. However, the winery hopes to keep mastering the managerial effectiveness of the current inventory without allocating more technological resources to it. Finally, one of the wineries identified two “misunderstanding the success process” patterns with respect to its employee management. The first “misunderstanding the success process” is the winery’s initial unawareness of the low effectiveness of the current personnel training and winery values transmission to its employees. The second “misunderstanding the success process” pattern recognized is the actual low effective training and winery values transmission to its employees, especially the employees who work outside its region. Addressing the first “misunderstanding the success process” allows the winery to remove the limiting constraint it faces when tackling the second “misunderstanding the success process” situation. However, the winery is still in the process of identifying the best way to tackle its employee management issues. This study identified three “misunderstanding the success process” situations that the wineries were not aware of. The first two take place at the same winery, and are related to the effectiveness of employee management, as well as to well-being of employees. The winery is not aware of two limiting factors that are affecting employees’ productivity and output quality. The first limiting factor is the infrequent and poor quality of communication between managers and employees. The second limiting factor is the

working conditions of servers and kitchen employees that amplify their stress level. Finally, two winery managers were unaware of how their pessimistic mental models limit their decisions towards more effective strategies.

The last behavioral pattern identified is “underinvesting in growth”. In this situation, wineries keep expanding their production and/or sales without investing in the necessary infrastructures or assets to keep the business increase in alignment with the required capacity. As a result, growth eventually stagnates because the necessary means to sustain it are not in place. Almost all the wineries underinvest in one of the following four areas: (a) production capacity, (b) sales capacity, (c) personnel management capacity, and (d) office space capacity. Two wineries are partially limiting the resources dedicated to expand their demand, because they are aware of the limited ability to increase their production. Four wineries are facing the limits of their sales capacity, two of them due to the limited capacity of their tasting room (one of these wineries is not aware of it though), and one of them due to the limiting size and access to its inventory. Three wineries experience limits in their growth due to the underinvestment in employee management. Two of them are aware of this limiting factor and two of them are not.

In term of winery size, results indicate that the “shifting the burden” behavior is mainly experienced by small wineries. This behavior occurs in small wineries mainly focused on the production side, ignoring the importance of good accounting records and the importance of having state of the art websites in order to attract customers. Furthermore, in many instances these wineries are not aware that they are not addressing the fundamental cause of their poor performance. Just one medium-sized winery experiences accounting issues, and it is already addressing this problem. No large winery in the present research is experiencing this problem. This “shifting the burden” problem is more readily

recognized and understood by winery managers and employees with more experience and who have taken steps to professionalize themselves.

In terms of the “misunderstanding the success process” patterns, all winery sizes face obstacles related to personnel management. Small wineries are also limited by their more pessimistic mental models, but they are not aware of it, just as they are not aware of the limiting factors related to their personnel management. Medium and large wineries are aware of the limiting factor related to personnel management and are already addressing it. They also face “misunderstanding the success process” behavior related to their increased market competition and lower access to inputs. The same pattern occurs in the “underinvesting in growth” behavior. Small wineries experience this behavior in more areas than medium-sized wineries, and medium-sized wineries experience this behavior in more areas than large wineries. The large wineries experience this behavior mainly in their personnel management department.

The success of entrepreneurship and leadership processes has been identified to be dependent on the level of knowledge (personal, relational and market) and skills (personal, relational and winery related) that the person enjoys and the rate of willingness to learn and consider the whole. Furthermore, the present research indicates that the level of knowledge, skills, and willingness to learn and consider the whole highly depend on the personal interactions within infrastructure and institutions. Finally, given the increasingly complex world in which businesses operate the success of entrepreneurship and leadership processes depend on each other. Newly creative transformations do not exist without entrepreneurship processes, and there is no effective materialization without effective leadership processes that mobilize and organize the resources needed for the success of the new project. Hence, the empirical research indicates that wineries that are more able to adapt and enhance their effectiveness are those with stronger reinforcing learning loops and clear business vision. This

combination allows the effective mix between static elements and dynamic elements that push the system to the edge of chaos (Schneider and Somers 2006). The below two tables summarize part of the results described.

Table 4.12.2: Entrepreneurship Effectiveness Main Factors Relationship with Wineries’ Size

| Problems With:                     | Small | Medium | Large |
|------------------------------------|-------|--------|-------|
| Clear Vision and Mission           | x     |        |       |
| Ability to Recognize Opportunities | x     |        |       |
| Deep Learning                      | x     | x      |       |
| Systemic Understanding             | x     |        |       |
| Effective Communication Skills     |       | x      | x     |
| Resources and Infrastructure       | x     | x      | x     |

Source: Author’s Own Elaboration

Table 4.12.3: Entrepreneurship Effectiveness Main Factors Relationship with Main Wineries’ Patterns

| Problems With:                     | Shifting the Burden | Misunderstanding the Success Process | Underinvesting in Growth |
|------------------------------------|---------------------|--------------------------------------|--------------------------|
| Clear Vision and Mission           | x                   |                                      |                          |
| Ability to Recognize Opportunities | x                   | x                                    |                          |
| Deep Learning                      |                     | x                                    | x                        |
| Systemic Understanding             | x                   | x                                    | x                        |
| Effective Communication Skills     |                     | x                                    | x                        |
| Resources and Infrastructure       |                     |                                      | x                        |

Source: Author’s Own Elaboration

The simulation results also confirm what Wheatley and Kellner stated (1996) “self-organization succeeds when the system supports the independent activity by giving them, quite literally, a stray frame of reference.” Simulation results also support Brown and Eisenhardt (1997) contribution that leadership effectiveness is critical for enhancing learning in a company.

Simulation results indicate that small wineries that are barely breaking-even are not able to adjust their goals towards a triple bottom line that satisfies their customer preferences. On the other hand, even when small wineries enjoy profits they do not adjust to satisfy customer environmental

preferences. Hence, wineries that are able to satisfy customer environmental preferences and that market their priorities effectively will enjoy a competitive advantage. Simulation results also point out that small wineries whose managers have a high level of risk aversion are less able to satisfy customers than wineries whose entrepreneur experiences an average level of risk aversion. Simulation results indicate that small wineries whose managers and employees have little winery related knowledge as well as managerial and market knowledge experience lower levels of entrepreneurship and leadership effectiveness and hence are less able to reduce their goals gaps and satisfy customers. Furthermore, small wineries whose employees and managers experience low well-being levels also experience lower levels of entrepreneurship and leadership effectiveness and effectiveness levels do not converge towards the baseline scenario since the “goal erosion” behavioral structure dominates the “hill-climbing” structure. The last simulation insight indicates that winery managers with a low ability to recognize opportunities experience a lower level of entrepreneurship effectiveness than otherwise. A summary of the dynamic hypotheses validated from the simulation results is presented in the below table.

Table 4.12.4: Simulation Dynamic Hypotheses Validated

| Simulation Dynamic Hypotheses  | Simulation Dynamic Hypotheses Validation |
|--|--|
| H1: The low level of goals diversification over time is partially caused by the low or negative level of profits.                                | ✓  |
| H2: The average level of goals gap has been reducing slowly and at a low degree due to the entrepreneur’s low level of winery related knowledge. | ✓  |
| H3: The average level of goals gap has been reducing slowly and at a low degree due to the entrepreneur’s decreasing well-being level.           | ✓  |
| H4: The average level of goals gap has been reducing slowly and at a low degree due to the entrepreneur’s high level of risk aversion.           | ✓  |
| H5: The average level of goals gap has been reducing slowly and at a low degree due to the entrepreneur’s low level of opportunity recognition.  | ✓  |

Source: Author’s Own Elaboration

The relationship between the empirical findings and the theoretical propositions posited in chapter two indicates that the theoretical propositions are supported by this research. Proposition one posits that “There is a co-evolutionary process among entrepreneurs’ cognition and the company’s strategies at several levels.” The empirical research indicates that depending on the level of challenges to awareness, the strategies implemented and their level of effectiveness vary. Part of the empirical research is to evaluate the level of risk aversion for entrepreneurs and managers, as well as their ability to recognize opportunities. The results support proposition two that “those business founders that do not pursue entrepreneurship processes after founding the company have a weaker than average ability to recognize opportunities. Their mind, heart and/or will are not functioning at their potential.” The higher levels of risk aversion together with their lower level of opportunity recognition are found most commonly in small wineries. People who are more adverse to risk seem to face obstacles that prevent them from identifying more beneficial opportunities after having set up the winery.

The empirical research also supports proposition number three. “There is a threshold where single-loop learning behavior becomes double-loop learning behavior and the company’s goals and/or strategies become more aligned with the founders and/or managers’ life purpose.” Several wineries have reported that there is a moment when winery managers realize that some strategies in place are not working, and they expand their level of awareness and knowledge on the matter in order to redirect the winery towards the current goal or to a new goal. The empirical research also validates proposition four. “Entrepreneurs with unclear business vision and mission and/or with poor communication skills are less successful than entrepreneurs with clear business foundations and/or communication skills” has been explained above. The empirical research sustains proposition five’s statement that “Entrepreneurs with a business vision that has a social dimension for the benefit of others as well as the benefit of the company have higher prosperity chances.” The empirical results indicate that the large winery studied is

the most successful at all levels- efficiency performance, social performance and environmental performance. The large winery is the only one that directs a higher percentage of its profits towards social issues in several communities and regions. The medium wineries allocate a higher percentage of their profits to social issues than do smaller wineries. The medium wineries studied also experience higher levels of success than the small wineries studied.

The empirical research evaluates the level of personal mastery of entrepreneurs and managers and confirms the validity of proposition six. The respondents that enjoy higher levels of personal mastery have higher entrepreneurship abilities. Proposition number seven cannot be directly validated by the empirical research since the survey did not include any specific questions about the manager's or entrepreneur's life purpose. This aspect could not be elucidated indirectly either during the face-to-face interview. Proposition number eight "Higher levels of systems thinking facilitate entrepreneurs' success by enhancing their understanding of the correspondence among the systems that the business is part of and facilitating new beneficial relationships" is validated by the empirical research where again medium and large wineries' managers and entrepreneurs experience higher levels of systemic understanding that allows them to expand their networks and to enjoy success. Evidence indicates that experience in the field enhances that learning.

Proposition number nine "Given current circumstances, companies that invest in implementing ethical leadership can achieve a valuable specific asset" is validated by the ethical leadership roles that medium and large wineries are building in relation to their commitment toward achieving social goals. It seems that this aspect of their businesses is enhancing their unique qualities and their competitive advantage. Proposition ten posits that "Given the current circumstances, effective transformational leadership requires high levels of personal mastery, awareness of mental models and systemic thinking so that the common denominators and harmonizing change factors effective for all groups can be



identified and properly implemented.” The present research indicates that winery managers who enjoy higher levels of these factors implement strategies that are more in alignment with the rest of the department’s structures and missions. The relevance of personal mastery, awareness of mental models, and systemic thinking levels on the effectiveness of transformational leadership processes was particularly noticeable in the medium and large wineries studied. A summary of the sources that validate each proposition is presented in the below tables.

Table 4.12.5: Entrepreneurship Proposition Validation Sources

| Entrepreneurship Propositions   | Empirical Research         |                             | Simulation Results |
|---|----------------------------|-----------------------------|--------------------|
|   | Aggregated Initial Results | Aggregated Systemic Results |                    |
| P. 1: There is a co-evolutionary process among entrepreneurs’ cognition and their firm’s strategies at several levels.  |                            | ✓                           |                    |
| P. 2: Business founders that do not pursue entrepreneurship processes after founding a firm lack the ability to recognize more opportunities than average people. Their mind, heart and/or will are not functioning at their potential. |                            | ✓                           |                    |
| P. 3: The most successful companies achieve and sustain double loop learning and their operations are aligned with the company values.  |                            | ✓                           |                    |
| P. 4: Entrepreneurs with unclear business vision and mission and/or with poor communication skills are less successful than entrepreneurs with clear business foundations and/or communication skills.                                  | ✓                          | ✓                           |                    |
| P. 5: Entrepreneurs with a business vision that has a social dimension for the benefit of others as well as the benefit of the company have higher chances for prosperity.  | ✓                          | ✓                           | ✓                  |
| P. 6: Higher levels of personal mastery enhance entrepreneurs’ ability to identify opportunities.   |                            | ✓                           |                    |
| P. 7: Higher levels of personal mastery enhance entrepreneurs’ success by allowing them to be aligned with their life purpose.  |                            | ✓                           |                    |
| P. 8: Higher levels of systems thinking facilitate entrepreneurs’ success by enhancing their understanding of the correspondence among the systems of which their business are part and by facilitating beneficial new relationships.   |                            | ✓                           | ✓                  |

Source: Author’s Own Elaboration

Table 4.12.6: Leadership Proposition Validation Sources

| Leadership Propositions   | Empirical Research         |                             | Simulation Results |
|---|----------------------------|-----------------------------|--------------------|
|   | Aggregated Initial Results | Aggregated Systemic Results |                    |
| P. 9: Given current circumstances, companies that invest in ethical leadership gain a valuable asset that enhances their sustained competitive advantage.   |                            | ✓                           |                    |
| P. 10: Given the current circumstances, effective transformational leadership requires high levels of personal mastery, awareness of mental models and systemic thinking so that the common denominators and harmonizing change factors effective for all groups can be identified and effectively implemented. |                            | ✓                           |                    |

Source: Author’s Own Elaboration

In terms of the general entrepreneurship and leadership processes of the nine wineries studied, the results indicate that medium and large wineries experience more effective entrepreneurship processes than small wineries. Small wineries also undertake entrepreneurship processes, but given their lower level of knowledge, experience, and resources, they are not as effective as the larger wineries. Ethical leadership processes seem to be emerging in most wineries, especially in the larger and smaller wineries that promote social values. As for now most of the ethical leadership is related to the social projects and goals that wineries are involved with, and in some ways these values and concerns are indirectly affecting the whole winery, including employees. Transformational leadership is part of the processes undertaken by the managers of small wineries who also implement entrepreneurship processes. In the case of larger wineries, several transformational leadership processes are conducted by the different leaders in each winery department. In small wineries, entrepreneurship and leadership processes are undertaken by the same person.

## CHAPTER 5: SUMMARY AND CONCLUSIONS

The global economy is constantly subject to the creative destructive process (Schumpeter 1939) that eliminates businesses that do not adopt the most efficient technologies and management practices and which do not satisfy new market demands. This process is amplified by periodic recessions such as that recently experience in the U.S. and elsewhere. New organizations and companies emerge and existing companies evolve to fill the new niches. During this transition an increase of entrepreneurship processes has been observed in numerous sectors. In order for these entrepreneurship processes to be materialized, new leadership processes emerge that promote the new values and ways of producing, distributing and consuming, and enhance the changes towards the new visions.

One result of the recent changes has been the rise of ethical leadership. Transformational leadership continues to be a keystone in any firm's organization structure but recently transformational leaders have found it advantageous to incorporate ethical leadership processes.

The U.S. wine sector has experienced a major increase in the number of businesses during the last ten years. The number of U.S. wineries has doubled together with the amount of wine produced and sold around the world, increasing the market competition inside and outside the country. Missouri is a leader this market transformation increasing the number of wineries by three times since 1999. As a result of the substantial market change in the wine sector, new entrepreneurship and leadership processes are taking place. This dissertation studies the dynamic systems that enhance the effectiveness of entrepreneurship and leadership processes from a systems thinking perspective. Theoretical propositions are posited based on the literature related to the wine sector, entrepreneurship, leadership, management, psychology, neuroscience and evolutionary processes; and an empirical study of nine U.S. wineries is conducted.

Specifically, the present research focuses on understanding the dynamic behavior resulting from the interactions between entrepreneurs and leaders in relation to their surroundings. Since the study focuses on the origin, evolution and success of entrepreneurship and leadership processes, it focuses on the impact of cognitive structures, mental models, and types and levels of knowledge, on the effectiveness of entrepreneurship and leadership practices in the U.S. wine sector. Finally, the study also identifies the traits and processes that successful entrepreneurship and leadership share.

The study is based on nine face-to-face interviews, an online questionnaire and complementary documents from seven Missouri wineries, one Virginia winery, and one Maine winery. Six wineries belong to the small category, two belong to the medium-sized category and one belongs to the large category. The face-to-face interviews lasted between two and five hours. During these interviews data on managers' knowledge and their rates of knowledge acquisition, other mental variables and winery related variables were gathered. Qualitative and quantitative methodologies are used to analyze the data in order to identify leverage points that would enhance wineries sustained competitive advantage. The models developed are based on system dynamics methodology since this approach allows the identification of the structures that are responsible for certain entrepreneurship and leadership behaviors.

The model demonstrates how a co-evolutionary process between entrepreneurs' cognition and the firm strategies at several levels leads to significantly different consequences for the firm. Specifically, the model shows how entrepreneurs' level of personal mastery, risk aversion, systemic thinking, project vision and knowledge about wineries, and the wine sector play a determining role in their overall level of awareness and ability to identify new opportunities. Entrepreneurs' values, level of social norm internalization, and ability to undergo deep learning processes that allow them to see beyond their current understanding, affect their overall level of well-being and determine the effectiveness level of

their actions. One of the key aspects identified in this study that substantially determines the level of success of entrepreneurship and leadership processes is the type of learning conducted by the entrepreneurs or leaders. When people do not reflect on the actions and outcomes received, especially when people are not able to let go of previous views, emotions, and actions, then patterns of behavior arise that do not bring the desired outcomes.

The model demonstrates the same co-evolutionary leadership processes. However, in entrepreneurship processes the model indicates that the ability to recognize opportunities has a higher weight in their overall effectiveness level, and in the case of leadership processes listening, conversing, and coordinating abilities play a major role. The three main modes of behavior identified from the empirical research that are a result of the types of learning processes conducted by entrepreneurs and leaders and their circumstances are known as: (a) shifting the burden, (b) misunderstanding the success process, and (c) underinvesting in growth. The shifting the burden behavior in the wineries studied occurs when wineries focus their attention on increasing production as a way to increase sales instead of noticing that the brand definition, marketing, and accounting areas are actually limiting sales. Hence, four of the wineries studied focus more on the symptom of the problem instead of implementing a fundamental solution. Four wineries experience this type of behavior in other areas such as their lack of business vision and their out-of-date websites. All the wineries but one that experience this behavior is small wineries.

The empirical research done indicates that wineries experience “misunderstanding the success process” behavior due to the market situation and due to their management practices. As a result, wineries indicate that there are some limiting factors in the market and in the strategies implemented that are not allowing them to achieve their goals. All the studied wineries that experienced this behavior are medium-sized or large. Small wineries identify some limits to growth but they fail to reallocate

resources to eliminate the limitations. Finally, three small wineries are not aware of managerial limits and personal mental models structures that are limiting their entrepreneurial ability to identify opportunities. As a result, these wineries cannot address the obstacles that prevent them from reaching their goals.

The “underinvesting in growth” behavior has been identified at both the physical and formation levels. Small and medium-sized wineries identify that they are reaching their production, sales or management capacity limits. Finally, wineries of all levels identified underinvestment as a limit on their growth.

The empirical research indicates that in small wineries, entrepreneurship and leadership processes are typically conducted by the same person whose attention is often divided between many things or just in one place all the time. Medium-sized and large wineries have personnel in charge of different tasks, with higher knowledge in their area, allowing them to make more effective decisions. Also, medium-sized and large wineries tend to have been in the market for a longer period of time and have gained higher specific and systemic knowledge of their winery and the sector. This allows them to employ more effective entrepreneurship and leadership processes. However, none of them have yet to apply the deep learning process presented above.

Simulation results indicate that small wineries that barely break-even are not able to adjust their goals towards a triple bottom line that better satisfies their customer’s preferences. Furthermore, the model indicates that small wineries that enjoy profits do not satisfy customer environmental preferences, leaving a market opportunity for wineries that capture that niche. Simulation results also point out that small wineries whose have a high level of risk aversion are less able to satisfy customers than wineries whose entrepreneur experiences an average level of risk aversion. Results indicate that small wineries whose managers and employees have little winery related knowledge as well as business

and market knowledge experience lower levels of entrepreneurship and leadership effectiveness. Furthermore, small wineries whose employees and managers experience low well-being levels also experience lower levels of entrepreneurship and leadership effectiveness and effectiveness levels do not converge towards the baseline scenario since the “goal erosion” behavioral structure dominates the “hill-climbing” structure. The last simulation insight indicates that winery managers with a low ability to recognize opportunities experience a lower level of entrepreneurship effectiveness than otherwise.

In summary, the theoretical and empirical research conducted indicates that entrepreneurship and leadership processes co-evolve together with their environment along with the cognitive processes experienced by the subjects. The levels of entrepreneurship and leadership success are highly determined by the subject’s level of knowledge in their area, the subject’s ability to reflect and understand the sources of their vision, the subject’s systemic knowledge, and the subject’s ability to pause and let go of all that blocks their ability to sense the next appropriate step. In other words, the type of learning conducted by entrepreneurs and leaders is paramount for their success, and the type of learning conducted at the same time depends on their current knowledge of themselves and their environment. In addition, the level of risk aversion and the clarity of vision on the project to be developed play a substantial role in their ability to identify new opportunities. This aspect is a key to the success of both entrepreneurship and leadership processes. The second aspect that limits entrepreneurship and leadership effectiveness is the level of tangible resources that the winery possesses. Research indicates that in both tangible and intangible resources, small wineries experience lower levels of resources, which limits their ability to undertake effective entrepreneurship and leadership processes. Given the increasingly complex world in which businesses operate, the present research identifies the increasing synergies between entrepreneurship and leadership processes that are necessary for the success of both processes. In order for new ideas to be properly materialized

leadership processes are necessary so that all the resources and structures are organized and coordinated in the same direction. At the same time, successful leadership processes require entrepreneurs that elucidate the new potentials in an effective and practical manner.



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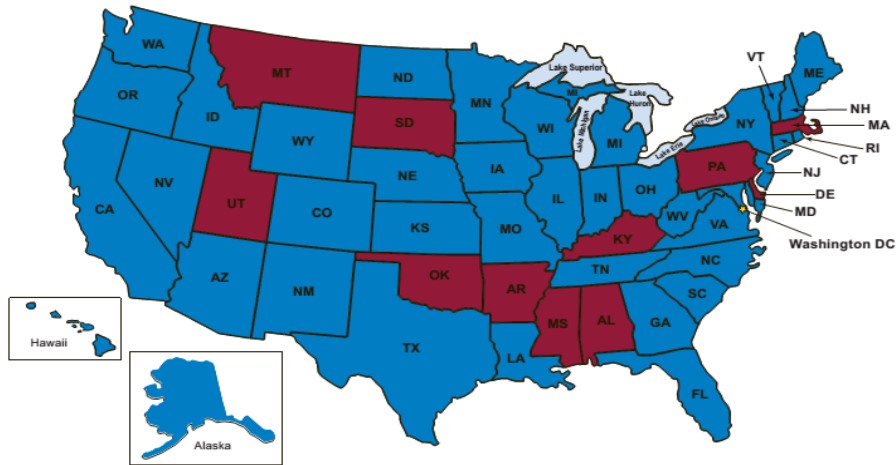
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# APPENDIX

## APPENDIX 1: U.S. WINE DISTRIBUTION



**Limited direct shipping & permit states: allowance of limited shipments:**

- Alaska (a reasonable amount)
- Arizona (permit required for off-site sales only)
- California (permit required - taxes paid)
- Colorado (permit required - taxes paid)
- Connecticut (permit required - taxes paid)
- Florida (excise taxes/ consumer taxes paid)
- Georgia (permit required - taxes paid)
- Hawaii (permit required - taxes paid)
- Idaho (permit required - taxes paid)
- Iowa (permit required - taxes paid)
- Illinois (permit required - taxes paid)
- Indiana (permit required - taxes paid)
- Kansas (permit required off-site sales only)
- Louisiana (permit required - taxes paid)
- Maine (permit required - taxes paid)
- Maryland (permit required - taxes paid)
- Michigan (permit required - taxes paid)
- Minnesota
- Missouri (permit required-taxes paid)

- Nebraska (permit required - taxes paid)
- Nevada (permit required -taxes paid)
- New Hampshire (permit required - taxes paid)
- New Jersey (permit required - taxes paid)
- New Mexico permit required - taxes paid)
- New York (permit required - taxes paid)
- North Carolina (permit required - taxes paid)
- North Dakota (permit required - taxes paid)
- Ohio (permit required - taxes paid)
- Oregon (permit required - taxes paid)
- Rhode Island (on-site sales only)
- South Carolina (permit and report required - taxes paid)
- Tennessee (permit required - taxes paid)
- Texas (permit required - taxes paid)
- Vermont (permit required - taxes paid)
- Virginia (permit and report required - taxes paid)
- Washington (permit required -taxes paid)
- Washington D.C. (one case per person)
- West Virginia (permit required/ taxes paid)
- Wisconsin (permit required/ taxes paid)
- Wyoming (permit required - taxes paid)

**Direct Shipment Not Permissible:**

- Alabama
- Arkansas
- Delaware
- Kentucky (felony)
- Massachusetts
- Mississippi
- Montana (consumer permit - no carrier)
- Oklahoma
- Pennsylvania (special interstate by 3-tier only)
- South Dakota
- Utah (felony for winery to direct ship)

**Federal On-Site Shipment States:**

- Delaware - no limit
- Oklahoma - up to 1 liter
- South Dakota - up to 1 gallon

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Figure 5.1: Direct Shipment Laws by State  
(information current as of May 1, 2012)  
Source: Wine Institute

Table 5.0.1: Who Ships Where, State-by-State Statutes Carrier Status

| State       | Shipping Requirements   | Legal Amount                                 | Federal On Site | Intrastate | FedEx Off-Site | FedEx On-Site | UPS Off-Site | UPS On-Site |
|-------------|---|--|-----------------|------------|----------------|---------------|--------------|-------------|
| AL          | Prohibited  |  |                 | No         | No             | No            | No           | No          |
| AK          | Allowed -No Permit Required   | A reasonable quantity                        |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| AZ On-Site  | Allowed-No Permit Required  | 2 cases per person per year                  |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| AZ Off-Site | Allowed-Permit Required, Fee \$300.00 (only wineries producing less than 20,000 gallons annually are eligible for permit) | Unlimited                                    |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| AR          | Prohibited  |  |                 | No         | No             | No            | No           | No          |
| CA          | Allowed -Permit Required, Fee \$10.00 (for CA wineries fee is permit and fee are included in 02 license)                  | Unlimited                                    |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| CO          | Allowed -Permit Required, Fee \$50.00   | Unlimited                                    |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| CT          | Allowed-Permit Required, Fee \$315.00 (\$100 filing fee)  | 2 cases every 2 months per consumer          |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| DE          | Prohibited  |  | Yes, no limit   | No         | No             | Yes           | No           | Yes         |
| DC          | Allowed-No Permit Required  | 1 case per person per month                  |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| FL          | Allowed -No Permit Required   | Unlimited                                    |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| GA On-Site  | Allowed- No Permit Required   | 5 cases per household per year               |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| GA Off-Site | Allowed -Permit Required, Fee is \$50.00  | 12 cases per person and per address per year |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| HI          | Allowed - separate permit and fee for each county: Maui \$48, Oahu \$48, Kauai \$48, Hawaii \$120                         | 6 cases per year per household               |                 | Yes        | Yes            | Yes           | Yes          | Yes         |

Source: Wine Institute

Definitions:

**Direct-to-Consumer (DTC):** refers to a shipment of wine sent from a winery to a consumer's home or work for the consumer's own personal use.

**Federal On-Site:** In November of 2002, President George W. Bush signed the Department of Justice Appropriations

Authorization Act, which included a provision allowing wine, purchased while visiting a winery, to be shipped to another state. Purchases must be in accordance with state law in that the consumer could have legally carried the same amount of wine back on their person as the winery is now able to ship to the consumer. This does not allow the consumer to join a wine club or to make a purchase to be shipped at a later date.

**Off-Site** refers to a shipment made on behalf of a consumer who places the order via phone, fax, or internet.

**On-Site** refers to shipments made on behalf of a customer who is places the order on the premises of the winery.



Table 5.1 cont: Who Ships Where, State-by-State Statutes Carrier Status

| State       | Shipping Requirements  | Legal Amount   | Federal On Site | Intrastate | FedEx Off-Site | FedEx On-Site | UPS Off-Site | UPS On-Site |
|-------------|--|--|-----------------|------------|----------------|---------------|--------------|-------------|
| ID          | Allowed Permit Required, Fee \$50.00   | 24 cases annually per consumer per winery  |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| IL          | Permit Required, Fee \$150 to \$1000 (fee based on annual production volume)   | 12 cases per year per consumer per winery  |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| IN          | Allowed-Permit Required, Fee \$100.00 (Distributor Prohibited beginning 120 days before applying for a permit, Initial on-site transaction required) | 24 case winery per consumer / 3,000 case winery total - 24 case consumer aggregate total |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| IA          | Allowed -Permit Required, Fee \$25.00  | Unlimited  |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| KS On-Site  | Allowed -On-Site Only- no permit required  | Unlimited  |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| KS Off-Site | Permit Required for Off-Site sales Only, Initial Permit Fee \$150 for two years  | 12 cases per address or consumer per year  |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| KY          | permit required, only wineries producing 50,000 gallons or less eligible   | 2 cases  |                 | No         | No             | No            | No           | No          |
| LA          | Allowed-Permit Required, Fee \$150.00  | 12 cases per year per consumer   |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| ME          | Permit Required, Initial Permit Fee \$200 plus \$100 registration fee  | 12 cases per household per year  |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| MD          | Permit Required, \$200   | 18 cases per address per year  |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| MA          | unworkable permit law due to aggregate volume limit  | "households" limited to 26 cases per year from all wineries combined                     |                 | Yes        | No             | No            | No           | No          |
| MI          | Allowed-Permit Required, Fee \$100.00  | 1500 cases per winery over 1 year  |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| MN          | Allowed -No Permit Required  | 2 cases per year per consumer  |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| MO          | Allowed -Permit Required - No Fee  | 2 cases per month per consumer   |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| MS          | Prohibited   |  |                 | No         | No             | No            | No           | No          |

Source: Wine Institute

Table 5.1 cont: Who Ships Where, State-by-State Statutes Carrier Status

| State | Shipping Requirements   | Legal Amount                                  | Federal On Site | Intrastate | FedEx Off-Site | FedEx On-Site | UPS Off-Site | UPS On-Site |
|-------|---|---|-----------------|------------|----------------|---------------|--------------|-------------|
| MT    | Prohibited  |   |                 | No         | No             | No            | No           | No          |
| NE    | Allowed-Permit Fee \$500.00   | 1 case per consumer per month                 |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| NV    | Allowed-Permit Fee \$50.00  | 12 cases per consumer per year                |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| NH    | Allowed-Permit Fee \$100  | 12 cases per consumer per calendar year       |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| NJ    | Allowed - Permit Required \$63-938 (based on annual production)   | 12 cases per consumer per year                |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| NM    | Permit Required, Fee \$50   | 2 cases per consumer per month                |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| NY    | Allowed-Permit Required, Fee \$125 per year ( license issued for 3-year term only. Cost is \$375 every 3 years.)          | up to 36 cases per person per winery per year |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| NC    | Allowed-Permit Required - No Fee  | 2 cases per consumer per winery per month     |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| ND    | Allowed-Permit Required, Fee \$50.00  | 3 cases per person per winery per month       |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| OH    | Allowed-Permit Required, Fee \$25.00 (only wineries producing less than 250,000 gallons annually are eligible for permit) | 24 case consumer aggregate volume limit       |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| OK    | Prohibited -Felony for sales to minors  |   | Yes, 1 liter    | No         | No             | Yes           | No           | Yes         |
| OR    | Allowed-Permit Required   | 2 cases per consumer per month                |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| PA    | Prohibited  |   |                 | Yes        | No             | No            | No           | No          |
| RI    | On-Site Allowed-no permit required (off-site shipments prohibited)  | A reasonable quantity                         |                 | Yes        | No             | Yes           | No           | Yes         |
| SC    | Allowed-Permit Required, Fee \$600.00 (biennial fee, renew 8/31 even years)   | 2 cases per month per consumer                |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| SD    | Prohibited  |   | Yes, 1 gallon   | No         | No             | Yes           | No           | Yes         |

Source: Wine Institute

Table 5.1 cont: Who Ships Where, State-by-State Statutes Carrier Status

| State | Shipping Requirements  | Legal Amount  | Federal On Site | Intrastate | FedEx Off-Site | FedEx On-Site | UPS Off-Site | UPS On-Site |
|-------|--|---|-----------------|------------|----------------|---------------|--------------|-------------|
| TN    | Permit Required, Fee \$150.00 (initial \$300 filing fee)                               | 1 case per person per month/ 3 cases per person calendar year                               |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| TX    | Allowed-Permit Required, Fee \$150.00 + \$376 surcharge every two years                | 9 gallons per month per consumer, not more than 36 gallons per winery per consumer per year |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| UT    | Felony   |   |                 | No         | No             | No            | No           | No          |
| VT    | Allowed-Permit Required, Fee \$300.00  | 12 cases per person per winery per year   |                 | Yes        | Yes            | Yes           | No           | No          |
| VA    | Allowed-Permit Required, Fee \$95.00 (\$65 registration fee)                           | 2 cases per month per consumer  |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| WA    | Allowed-Permit Required, Fee \$100.00  | Unlimited   |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| WV    | Allowed -Permit Required, Fee \$150 to ship wine 14%, \$250 to ship wine more than 14% | 2 cases per month per consumer  |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| WI    | Allowed -Permit Required, Biennial Fee \$200   | 12 cases per year per consumer per winery   |                 | Yes        | Yes            | Yes           | Yes          | Yes         |
| WY    | Allowed -Permit Required, Fee \$50.00  | 2 cases per address per year  |                 | Yes        | Yes            | Yes           | Yes          | Yes         |

Source: Wine Institute

## APPENDIX 2: FACE-TO-FACE INTERVIEW QUESTIONNAIRE

### Consent Form



My name is Neus Raines, a PhD student in the Agricultural and Applied Economics Department at the University of Missouri-Columbia. I am studying how wineries adapt to changes such as the increase in market competition in the US and the rest of the world and climate change in order to sustain or increase their competitive advantage. The aim is to identify successful and less-successful adaptation strategies based on alternative winery characteristics so that more effective decisions can be made by winery managers.

I hope you will participate in my study. Your contribution will be very important to our understanding of successful adaptation strategies for the wine sector.

The intention is that our analysis will allow firm information to be identifiable. However, if the winery prefers not to disclose its identity we will keep it "H".

If you have any questions concerning this research or your participation in the interview, please feel free to contact me via email [nvn7d@mail.missouri.edu](mailto:nvn7d@mail.missouri.edu) or by phone at 573-999-2939 at any time.

If you agree to participate and disclose the identity of your winery please fill out the consent for the release of confidential information below.

The winery representative, \_\_\_\_\_ authorize Neus Raines a PhD student at the Department of Agricultural and Economics at the University of Missouri-Columbia to use my responses from the face-to-face interview for research purposes related to Factors Affecting Wineries Dynamic Capabilities and **to disclose the winery identity.**

I, the undersigned, understand that I may revoke this consent at any time except to the extent that action has been taken in reliance on it.

Date: \_\_\_\_\_

\_\_\_\_\_  
Respondent's Signature

The winery representative, \_\_\_\_\_ authorize Neus Raines a PhD student at the Department of Agricultural and Economics at the University of Missouri-Columbia to use my responses from the face-to-face interview for research purposes related to Factors Affecting Wineries Dynamic Capabilities and **to not disclose the winery identity.**

I, the undersigned, understand that I may revoke this consent at any time except to the extent that action has been taken in reliance on it.

Date: \_\_\_\_\_

\_\_\_\_\_  
Respondent's Signature

Thank you very much,

Neus Raines  
University of Missouri-Columbia  
Department of Agricultural and Applied Economics  
226 Middlebush Hall, Columbia, MO, 65211  
Phone: 573-999-2939  
Email: [nvn7d@mail.missouri.edu](mailto:nvn7d@mail.missouri.edu)

### Face-to-face Interview Questions



1. When the winery was opened (year and month)?
2. What is the job title for your current position?
3. If you are the owner of the winery, what motivated you, or the person who started the business, to enter the wine industry?

4. What are the winery goals?
  - a. To grow (same products and/or services)
  - b. To sustain its current size
  - c. To diversify *inside* the wine sector (new products, new services related with the wine sector)
  - d. To diversify *outside* the wine sector (new products, new services non-related with the wine sector)
  - e. Other (please specify)

5. What has been the evolution of the total **gallons** of wine **produced** since the winery started?



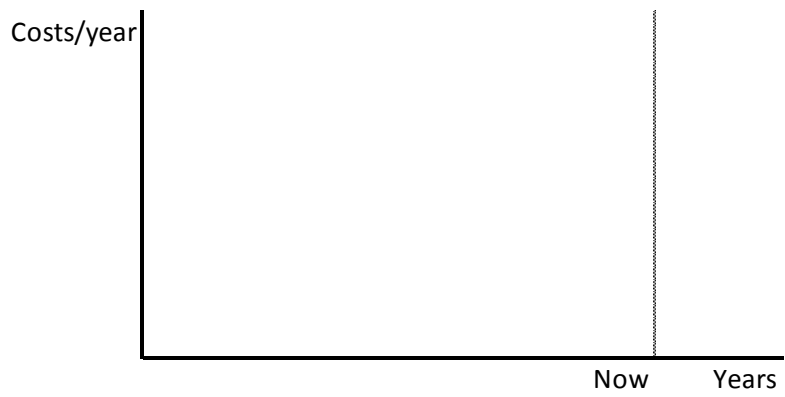
6. What has been the evolution of the winery **revenues** over time?



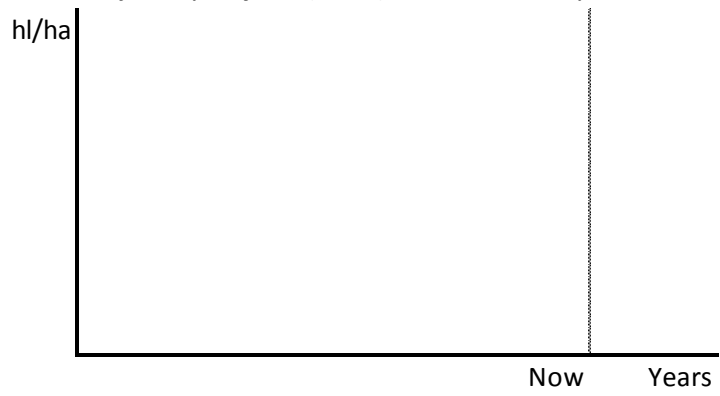
7. What has been the evolution of the winery **gallons sold** over time?



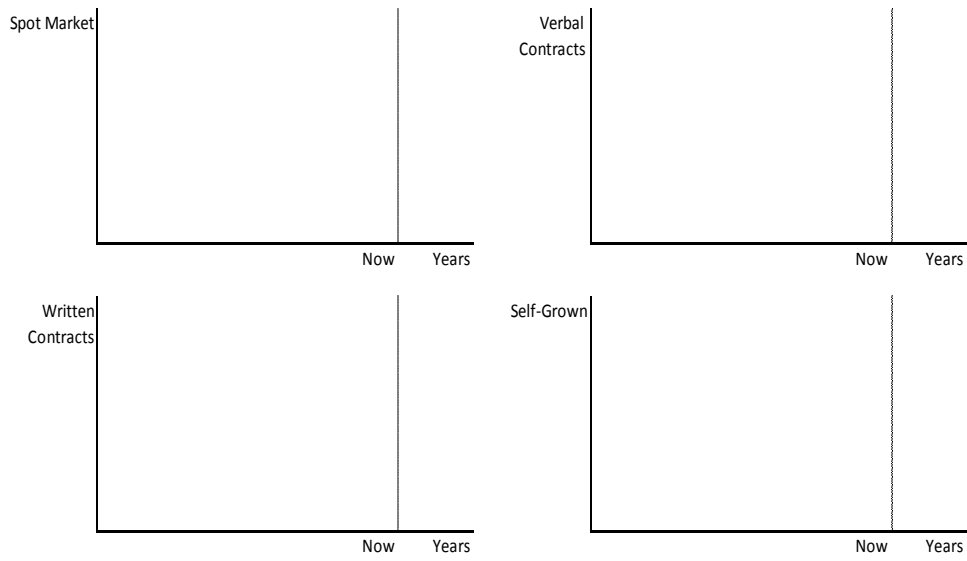
8. What has been the evolution of the winery **costs** over time?



9. What has been the trajectory of **yield** (hl/ha) since the winery started?



10. What has been the percentage of **grapes** purchased or self-provided:



11. What has been the evolution of the average number of the following **employee** types per year:



12. What has been the average amount of **capital** (equity plus debt) invested in the winery?



13. What is the percentage of money that the winery **invests** in the possible following **goals** categories?

- a) Economic Goals (e.g. oriented to increase performance without social or environmental approaches)
- b) Social Goals (e.g. oriented to increase community value)



c) Environmental Goals (e.g. oriented to reduce pollution, energy savings)

Total \_\_\_\_\_ 100%

14. How important are the following **winery goals** for increasing **winery profits**?

|                         |                |           |         |                    |     |
|-------------------------|----------------|-----------|---------|--------------------|-----|
| Economic Important      | Very Important | Important | Neutral | A little Important | Not |
| Environmental Important | Very Important | Important | Neutral | A little Important | Not |
| Social Important        | Very Important | Important | Neutral | A little Important | Not |

15. How “imitable” are your winery goals (e.g. can competitors easily copy and apply your goals in their businesses)?

|                   |               |            |          |        |
|-------------------|---------------|------------|----------|--------|
| Very Imitable all | Substantially | Reasonably | A little | Not at |
|-------------------|---------------|------------|----------|--------|

16. In your perception, how much are your winery’s stated **goals** specifically **incorporated** into all of your strategies, processes, and policies?

|                                |               |            |          |     |
|--------------------------------|---------------|------------|----------|-----|
| Very Incorporated Incorporated | Substantially | Reasonably | A little | Not |
|--------------------------------|---------------|------------|----------|-----|

17. What are the main **strategic means** to achieve the winery goals?

- a) Efficiency and cost reduction
- b) Customer orientation (e.g. knowing well your clients and satisfying their needs)
- c) Product innovation (e.g. developing new types of wines to capture new clients)
- d) Product diversification outside winery sector (e.g. restaurant, B&B, entertainment)
- e) Building relationships with your community (e.g. working together with tourism businesses, restaurants, events companies)
- f) Other (please specify)

18. On a scale from 0 to 100, how important it is for the winery to increase its profits by 50%?

19. On a scale from 0 to 100, how important is it to you to have your grapes environmentally certified?

20. On a scale of 0 to 100, how important is it you to have your average red wine be eco-labeled?

21. Here we need to introduce three terms first:

Fairness: the quality of being free from bias or prejudices.

Truth: the full conformity with fact or reality.

Altruism: the practice of unselfish concern for the welfare of others.

To which extent do you believe that each of these **values** guides the way the winery conducts its business?

a) Fairness:

|           |               |            |          |
|-----------|---------------|------------|----------|
| Very Much | Substantially | Reasonably | A little |
| None      |               |            |          |

b) Truth:

|           |               |            |          |
|-----------|---------------|------------|----------|
| Very Much | Substantially | Reasonably | A little |
| None      |               |            |          |

c) Altruism:

|           |               |            |          |
|-----------|---------------|------------|----------|
| Very Much | Substantially | Reasonably | A little |
| None      |               |            |          |

22. Compared to other wineries, what do you believe to be the general level of **employees' identification, commitment, and loyalty** to the winery?

|           |      |        |     |          |
|-----------|------|--------|-----|----------|
| Very High | High | Medium | Low | Very Low |
|-----------|------|--------|-----|----------|

23. What do you believe to be the extent to which the **relationships** between **manager** and **employee** are important to the profitability of the winery?

|                |               |            |          |
|----------------|---------------|------------|----------|
| Very Important | Substantially | Reasonably | A little |
| Not Important  |               |            |          |

24. To what degree are the **relationships** (e.g. trust, mutual support) between **managers** and **employees unique** to your winery and not replicated by other wineries?

|           |      |            |       |          |
|-----------|------|------------|-------|----------|
| Very High | High | Reasonable | Small | Very Low |
|-----------|------|------------|-------|----------|

25. To what degree the informal **relationships** between the winery and its **suppliers** and **distributors** have become important to the profitability of the winery?

Very High                      High                      Reasonably                      Small  
Very Low

26. To what degree are the **relationships** between the winery and its **suppliers** and **distributors** unique to the winery and no other firm can imitate them?

Very High                      High                      Reasonably                      Small  
Very Low

27. To what extent does your winery provide for **enhancement** of **employees' winery-related technical skills**?

High Extent                      Substantial                      Reasonable                      A little  
None

28. To what extent does the winery help employees to **enhance** their **personal growth** and development (e.g. self-confidence, stress management, self-awareness, etc.)?

High Extent                      Substantial                      Reasonable                      A little  
None

29. What would you say is your own **level of technical skills** for your job position?

Very High                      High                      Medium                      Low                      Very  
Low

30. What would you say is your own level of **satisfaction** with your **work** and **life**?

Very High                      High                      Medium                      Low                      Very  
Low

31. How much does the winery **enhance group/team learning** and development, such as working together to find unique solutions, solve problems, and create a shared vision for the firm?

Very Much                      Substantially                      Reasonably                      A little  
Not at all

32. What would you say that it is the **current level of group knowledge** and shared vision in the winery?

Very High                      High                      Medium                      Low                      Very  
 Low

33. How much does the winery **promote inter-firm learning** so that it can learn from wineries, grape growers, tourism businesses, and research centers among others?

Very Much                      Substantially                      Average                      A little  
 Not at all

34. What would you say that it is the current level of **inter-firm knowledge** in the winery?

Very High                      High                      Medium                      Low                      Very  
 Low

35. What would you say that it is the **level of understanding of the interdependence** (mutually reliance on each other) between the winery and its suppliers, distributors, the environment, the community and so on?

Very High                      High                      Medium                      Low                      Very  
 Low

36. How much does the winery **enhance the understanding of the interdependence** between the winery and its suppliers, distributors, the environment, the community and so on among the employees?

Very Much                      Substantially                      Reasonably                      A little  
 Not at all

37. How **important** are your winery's **strategies** for generating new knowledge for increasing your profits (e.g. systems for recording techniques that have failed, weekly/monthly meetings to share the key information from different areas, procedures for recording customer satisfaction, etc.)?

Very Important                      Important                      More or Less Important                      A little  
 Not Important

38. How **imitable** (easy to copy and apply for another winery) are your winery's **strategies** for generating knowledge?

Very Imitable                      Substantially                      More or Less Imitable                      A little  
 Not Imitable

39. How much of the **newly knowledge** (e.g. new effective ways of grape procurement, new effective ways of relating with suppliers, new customers preferences) generated have you **written down** and able to be used later on?

Very Much                      Substantial                      Half                      A little                      None

40. To what extent does the winery **reward employees** with external rewards (money, wine, trips, etc.)?

Very Much                      Substantially                      Reasonably                      A little

Not at all

41. To what extent does the winery **compensate employees** based on the following categories:

Performance at the individual level (personal effort, productivity, work quality)

High Extent                      Substantial                      Reasonable                      A little                      None Extent

Performance at the group (unit or group productivity and quality)

High Extent                      Substantial                      Reasonable                      A little                      None Extent

Level of skills sets (education, training, and skills)

High Extent                      Substantial                      Reasonable                      A little                      None Extent

Value of the job or role to the organization

High Extent                      Substantial                      Reasonable                      A little                      None Extent

Cost of living, competitor pay rates

High Extent                      Substantial                      Reasonable                      A little                      None Extent

42. To what extent does the winery reward employees with **internal rewards** (recognition, special gratitude, mentorship, new responsibilities, etc.)

Very Much                      Substantially                      Reasonably                      A little                      Not at all

43. Do you think that the winery **reward system** (e.g. type of rewards and their levels) is **adequate** to achieve the winery goals?

Very Much Adequate                      Substantially                      Average                      A little  
Not Adequate

44. Do you think that these **rewards** are **fair**?

Very Fair                      Substantially                      So so fair                      A little  
Not Fair

45. Are employees in general **satisfied** with these **rewards**?

Very Satisfied    Substantially                      So so satisfied                      A little                      Not  
Satisfied

46. To what extent do these **rewards** make **employees perform** more in accordance with what the winery expects from them?

High Extent    Substantial                      Reasonable                      A little                      None  
Extent

47. How **often** are these **rewards adapted** as its employees and environments change?

Very Often                      Normally                      Sometimes                      Rarely  
Never

48. How important do you think the winery's **compensation system** is for the **firm's success**?

Very Important                      Important                      Reasonably                      A little                      None  
Important

49. How easily could other wineries copy or **mimic** your winery system for **compensating employees**?

Very Easily                      Substantially                      Reasonably                      A little  
Not Easily

50. To what extent does the winery **collect information** and **measure** any "**intangible**" **asset** like brand value, employees' satisfaction, reputation, or others?

High Extent                      Substantial                      Reasonable                      A little  
Zero

51. To what extent is the **capability of measuring intangible assets** relevant for the winery success?

High Extent                      Substantial                      Reasonable                      A little  
Zero

52. How easily could other wineries **copy or mimic** the winery **system for measuring intangible assets**?

Very Easily                      Substantially                      Reasonably                      A little  
Not Easily

53. How well does the current **organizational structure fit** (degree of buying or producing its own grapes and level of employee decision-making and responsibility) with the winery effectiveness?

Very Well              Substantially                      Reasonably                      A little                      Not  
Well

54. How **often** does the winery **adapt its organizational structure** to achieve its effectiveness?

Very Often                      Normally                      Sometimes                      Rarely  
Never

55. If you buy grapes at the spot market, on a scale of 0 to 100, how important to you is **changing your spot market grape supply** to grape supply via contracts (verbal or formal, written)?

56. If you buy grapes at the spot market, on a scale of 0 to 100, how important to you is **changing your spot market grape supply** to self-provision of grapes (i.e., winery owned vineyards)?

57. If you buy grapes via contracts (verbal or legal), on a scale of 0 to 100, how important to you is **changing your grape supply** via contracts to self-provision of grapes?

58. On a scale of 0 to 100, how important to you is to produce a **new type of wine** of the same profit as your average one?

59. On a scale of 0 to 100, how important to you is to produce a **new beverage** (juice, spirits, beer) of the same profit as your average one?

60. On a scale of 0 to 100, how important to you is **offering wine tasting services** in your winery?

61. On a scale of 0 to 100, how important to you is offering **hostel services** for 10 people in your winery?

62. To your understanding, what are the 3 **main external challenges** that face the winery and what is their challenge rate from a 0 to 100 scale – 100 being a very big challenge (e.g. competition level,

climate change, customer preferences change, lack of wine distribution channels in your region, lack of grape growers in your region)?

| 3 Main Challenges | Challenge Rate |       |       |       |
|-------------------|----------------|-------|-------|-------|
|                   | 0 -19          | 20-39 | 40-59 | 60-79 |
| 80-100            |                |       |       |       |
| 1.                |                |       |       |       |
| 2.                |                |       |       |       |
| 3.                |                |       |       |       |
| 4. I don't know   |                |       |       |       |

63. To your understanding, what are the 3 **main internal challenges** that face the winery and what is their challenge rate from a 0 to 100 scale – 100 being a very big challenge (e.g. lack of accounting managerial skills, lack of grape growing knowledge, lack of technical knowledge related with wine production, lack of employee managerial skills)?

| 3 Main Challenges | Challenge Rate |       |       |       |
|-------------------|----------------|-------|-------|-------|
|                   | 0 -19          | 20-39 | 40-59 | 60-79 |
| 80-100            |                |       |       |       |
| 1.                |                |       |       |       |
| 2.                |                |       |       |       |
| 3.                |                |       |       |       |
| 4. I don't know   |                |       |       |       |

64. To your understanding, what are the 3 **main external opportunities** for the winery success and what is their opportunity rate from a 0 to 100 scale – 100 being a very big opportunity (e.g. people preferences for local products, identification of new grapes that can be grown and provide unique wine, possible cooperation among tourism and restaurant businesses, support from the government in wine production)?

| 3 Main Challenges | Opportunity Rate |       |       |       |
|-------------------|------------------|-------|-------|-------|
|                   | 0 -19            | 20-39 | 40-59 | 60-79 |
| 80-100            |                  |       |       |       |
| 1.                |                  |       |       |       |
| 2.                |                  |       |       |       |
| 3.                |                  |       |       |       |
| 4. I don't know   |                  |       |       |       |

65. To your understanding, what are the 3 **main internal opportunities** for the winery success and what is their opportunity rate from a 0 to 100 scale – 100 being a very big opportunity (e.g. specific knowledge from employees and/or managers that has brought competitive advantage to the



winery, vineyards characteristics that have allowed the winery to also offer wine tasting, the use of employees and/or managers charisma for the winery success)?

|                   |                  |       |       |       |
|-------------------|------------------|-------|-------|-------|
| 3 Main Challenges | Opportunity Rate |       |       |       |
|                   | 0 -19            | 20-39 | 40-59 | 60-79 |

80-100

- 1.
- 2.
- 3.
4. I don't know

66. What is your opinion of the **importance of business networking** with grape growers, other wineries, distributors, tourism businesses, university and wine related organizations for the overall success of the winery? (write the name of each organization by the level of its importance)

- a. Very important
- b. Important
- c. Makes no difference
- d. Too much trouble
- e. Waste of time
- f. Don't know

67. What do you consider to be the winery **3 main sources of success** and their rank of success from 0 to 100 – hundred being super successful?

|                        |                     |       |       |       |
|------------------------|---------------------|-------|-------|-------|
| 3 Main Success Sources | Success Source Rate |       |       |       |
|                        | 0 -19               | 20-39 | 40-59 | 60-79 |

80-100

- 1.
- 2.
- 3.
4. I don't know

68. Is there **anything else** that you would like to share with us regarding the winery managerial adaptation strategies and the importance of the winery values and learning skills in its performance?

## APPENDIX 3: ONLINE SURVEY QUESTIONNAIRE

### Wineries Extra Questions

[https://www.surveymonkey.com/s/wineries\\_leadership\\_strategies](https://www.surveymonkey.com/s/wineries_leadership_strategies)

#### A) Strategies Questions

1. By how much would you say that the winery has **achieved** the desired **production/supply goals** during the last 5 years?

Not at all      A little bit      Fifty/Fifty      Substantially      Very much

2. What have been the main **challenges, limiting forces**, in achieving the **desired production**? (if none just write "none".)
3. What **strategies** have been implemented, or are considered, in order to relieve or **work around** the limits? (if none just write "none".)
4. What have been the main **facilitators, "reinforcing growth processes"**, in achieving the **desired production**? (if none just write "none".)
5. How the **facilitators, "reinforcing growth processes"**, have been **identified and implemented**? (if none just write "none".)

6. By how much would you say that the winery has **changed** its initial **desired production/supply goals**?

Not at all      A little bit      Fifty/Fifty      Substantially      Very much

7. Please indicate whether the **change** has been **positive** (towards higher levels of production) or **negative** (towards lower levels of production) and describe a little bit why the vision changed.

8. By how much would you say that the winery has achieved the desired **sales goals** during the last 5 years?

Not at all      A little bit      Fifty/Fifty      Substantially      Very much

9. What have been the main **challenges, limiting forces**, in achieving the desired sales? (if none just write "none".)

10. What strategies have been implemented, or are considered, in order to relieve or work around the limits? (if none just write "none".)
11. What have been the main *facilitators*, "*reinforcing growth processes*", in achieving the desired sales? (if none just write "none".)
12. How the *facilitators*, "*reinforcing growth processes*", have been identified and implemented? (if none just write "none".)
13. By how much would you say that the winery has changed its initial desired *sales* goals?  
 Not at all    A little bit    Fifty/Fifty    Substantially    Very much
14. Please indicate whether the change has been positive (towards higher sales levels) or negative (towards lower sales levels) and describe a little bit why the vision changed.
15. By how much would you say that the winery has achieved the desired ***relationships among its personnel*** during the last 5 years?  
 Not at all    A little bit    Fifty/Fifty    Substantially    Very much
16. What have been the main *challenges*, *limiting forces*, in achieving the desired relationships among the winery personnel? (if none just write "none".)
17. What strategies have been implemented, or are considered, in order to relieve or work around the limits? (if none just write "none".)
18. What have been the main *facilitators*, "*reinforcing growth processes*", in achieving the desired relationships among the winery personnel? (if none just write "none".)
19. How the *facilitators*, "*reinforcing growth processes*", have been identified and implemented? (if none just write "none".)

20. By how much would you say that the winery has changed its initial desired *relationships* goals with its personnel?  
 Not at all      A little bit      Fifty/Fifty      Substantially      Very much
21. Please indicate whether the change has been positive (towards higher quality relationships) or negative (towards lower quality relationships) and describe a little bit why the vision changed.
22. By how much would you say that the winery has achieved the desired ***relationships with its customers*** during the last 5 years?  
 Not at all      A little bit      Fifty/Fifty      Substantially      Very much
23. What have been the main *challenges, limiting forces, in* achieving the desired relationships with its customers? (if none just write “none”.)
24. What strategies have been implemented, or are considered, in order to relieve or work around the limits? (if none just write “none”.)
25. What have been the main *facilitators, “reinforcing growth processes”,* in achieving the desired relationships with your customers? (if none just write “none”.)
26. How the *facilitators, “reinforcing growth processes”,* have been identified and implemented? (if none just write “none”.)
27. By how much would you say that the winery has changed its initial desired *relationships* goals with its customers?  
 Not at all      A little bit      Fifty/Fifty      Substantially      Very much
28. Please indicate whether the change has been positive (towards higher quality relationships) or negative (towards lower quality relationships) and describe a little bit why the vision changed.
29. By how much would you say that the winery has achieved the desired ***relationships with government officials*** during the last 5 years?

Not at all      A little bit      Fifty/Fifty      Substantially      Very much

30. What have been the main *challenges, limiting forces, in* achieving the desired relationships with government officials? (if none just write “none”.)

31. What strategies have been implemented, or are considered, in order to relieve or work around the limits? (if none just write “none”.)

32. What have been the main *facilitators, “reinforcing growth processes”*, in achieving the desired relationships with government officials? (if none just write “none”.)

33. How the *facilitators, “reinforcing growth processes”*, have been identified and implemented? (if none just write “none”.)

34. By how much would you say that the winery has changed its initial desired *relationships* with government officials?

Not at all      A little bit      Fifty/Fifty      Substantially      Very much

35. Please indicate whether the change has been positive (towards higher quality relationships) or negative (towards lower quality relationships) and describe a little bit why the vision changed.

## **B) Owner and Personnel Characteristics**

36. Do you identify any employee (or yourself) in your winery with the following characteristic?

A person through which new ideas and innovative practices spread organically in an across organizations.

Please distinguish if it is you or somebody else.

37. What would you say that it is the level of **interaction/communication among all the leaders** in the winery?

Very low      Low      Medium      High      Very high

38. What type of leader definition fits you most (or fits more the current owner of the winery)

Effective Leader: catalyzes commitment to and vigorous pursuit of a clear and compelling vision; stimulates the group to high performance standards.

Competent Manager: organizes people and resources toward the effective and efficient pursuit of predetermined objectives.

Executive: builds enduring greatness through a paradoxical combination of personal humility plus professional will.

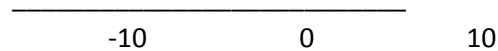
High Capable Individual: makes productive contributions through talent, knowledge, skills, and good work habits.

Contributing Team Member: contributes to the achievement of group objectives; works effectively with others in a group setting.

Effective Leader      Competent Manager    Executive      High Capable Individual    Contributing  
Team Member

Risk Aversion

39. How risk averse, risk lover or risk neutral do you consider yourself? (-10 is the maximum level of risk aversion that one can be, 0 identifies risk neutrality and 10 identifies the maximum level of risk lover that one can be)

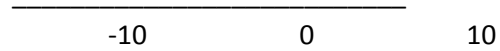


40. Suppose that you just started a winery in a good location, you want to produce 20,400 gallons/year and to sell 90% of your production each year. Your land and equipment allow you to reach that production goal. Your tasting room allows you to fit 50 people. However, the tasting room needs improvement and your marketing, networking with the community, politicians and distributors has not received any investment yet. By now you can sell 60% of what you produce, barely covering your ongoing expenses. How likely are you to consider the option of requesting a \$50,000 loan in order to invest in these areas?

Very likely    Likely    Fifty – fifty    Not likely    Very unlikely

Uncertainty Bearing

41. How much uncertainty do you consider that you are comfortable bearing in general? (-10 is the maximum level of uncertainty aversion that one can be, 0 identifies neutrality in front of uncertainty and 10 identifies the maximum level of uncertainty lover that one can be)



42. How comfortable would you be if you could not predict the weather and you could only buy 20% of the grapes or wine needed to cover 20% of your desired production?

Very comfortable    Comfortable    Neutral    Uncomfortable    Very uncomfortable

43. What is the winery name?

## APPENDIX 4: SIMULATION MODEL EQUATIONS AND UNITS

### Equations Figure 3.3.6: Efficiency and Social Goals Adjustment

Efficiency Goals= INTEG (-Environmental Goals Adoption Rate-Social Goals Adoption Rate,0.85)

Units: Dmnl

Efficiency Goals Gap=Equilibrium Efficiency Goals-Efficiency Goals

Units: Dmnl

Break Even Effect on Social Goals Adoption= "Table, Break Even Limit on Social Goals Adoption"(Efficiency Goals/Break Even Limit)

Units: Dmnl

"Table, Break Even Limit on Social Goals Adoption"([(0,0)  
(2,1.2)],(0.012474,0),(0.997921,0),(1,1),(1.27651,1.09811),(1.5052,1.14717),(1.78794,1.17358),(2,1.2))

Units: Dmnl

Break Even Limit= 0.5

Units: Dmnl

Clarity Business Vision= 1

Units: Dmnl

Customer Efficiency Preferences= 0.6

Units: Dmnl

Customer Efficiency Preferences Perception=0.6

Units: Dmnl

Customer Efficiency Preferences Satisfaction=1-(Efficiency Goals-Customer Efficiency Preferences)

Units: Dmnl

Customer Social Preferences=0.25

Units: Dmnl

Customer Social Preferences Perception=0.25

Units: Dmnl

Customer Social Preferences Satisfaction=1-(Customer Social Preferences-Social Goals)

Units: Dmnl



"Effect Clarity Buss. Vision To Eq. Eff Goals"="Table, Clarity Buss. Vision to Eq. Eff. Goals"(Clarity Business Vision)

Units: Dmnl

"Table, Clarity Buss. Vision to Eq. Eff. Goals"([(0,0)-(1,1)],(0,0),(0.114345,0.0628931),(0.247401,0.198113),(0.326403,0.361635),(0.388773,0.556604),(0.488565,0.798742),(0.580042,0.943396),(0.75052,1),(1,1))

Units: Dmnl

"Effect Efficiency Goals Perceived Gap to Efficiency Eq. Goals"="Table, Gap btw Winery Eq. Efficiency Goals and Customer Eff. Preference Perception to Eff. Eq. Goals"("Gap btw Winery Eq. Efficiency Goals and Customer Efficiency Preferences Perception")

Units: Dmnl

"Effect Risk Aversion to Eq. Eff. Goals"="Table, Risk Aversion to Eq. Eff. Goals"(Risk Aversion Level)

Units: Dmnl

"Table, Risk Aversion to Eq. Eff. Goals"([(0,0)-(1,1)],(0,1),(0.0623701,0.974843),(0.185031,0.921384),(0.307692,0.823899),(0.492723,0.663522),(0.66736,0.459119),(0.841996,0.235849),(1,0))

Units: Dmnl

"Eq. Eff Goal Gap Change"=Equilibrium Efficiency Goals-Customer Efficiency Preferences Perception

Units: Dml/Year

"Eq. Social Goal Gap Change"=Equilibrium Social Goals-Customer Social Preferences Perception

Units: Dml/Year

Equilibrium Efficiency Goals=Efficiency Goals\*"Effect Efficiency Goals Perceived Gap to Efficiency Eq. Goals"

\*"Effect Clarity Buss. Vision To Eq. Eff Goals"\*"Effect Risk Aversion to Eq. Eff. Goals"

Units: Dmnl

"Table, Gap btw Winery Eq. Efficiency Goals and Customer Eff. Preference Perception to Eff. Eq. Goals"

([(-2,-1)-(-2,2)],(-2,2),(-1.44283,1.83962),(-0.810811,1.59434),(-0.237006,1.30189),(0,1),(0.320166,0.179245),(0.760915,-0.273585),(1.26819,-0.613208),(2,-1))

Units: Dmnl

Equilibrium Social Goals=Social Goals+"Table, Gap btw Winery Eq. Social Goals and Customer Social Preference Perception to Social. Eq. Goals"("Gap btw Winery Eq. Social Goals and Customer Social Preferences Perception")

Units: Dmnl

"Gap btw Winery Eq. Efficiency Goals and Customer Efficiency Preferences Perception"

= INTEG ("Eq. Eff Goal Gap Change",0)

Units: Dmnl

"Gap btw Winery Eq. Social Goals and Customer Social Preferences Perception"= INTEG ("Eq. Social Goal Gap Change",0)

Units: Dmnl

Risk Aversion Level=0

Units: Dmnl

"Social and Env. Goals Adoption Time"= "Effect Productivity/Quality to Social Goals Adoption Time"

Units: Year

"Social and Env. Goals Possible Adoption Fraction"=Break Even Effect on Social Goals Adoption\*-  
1\*Efficiency Goals Gap

Units: Dmnl

Social Goals= INTEG (Social Goals Adoption Rate,0.13)

Units: Dmnl

Social Goals Adoption Rate=IF THEN ELSE(("Social and Env. Goals Possible Adoption Fraction"\*Efficiency Goals

)>0,("Social and Env. Goals Possible Adoption Fraction"\*Efficiency Goals\*Social Goals Word of Mouth  
)/"Social and Env. Goals Adoption Time",0)

Units: Dml/Year

Social Goals Gap=Equilibrium Social Goals-Social Goals

Units: Dmnl

Social Goals Gap Adoption Fraction=0.1\*Social Goals Gap

Units: Dml/Year

Social Goals Word of Mouth=(Social Goals\*Efficiency Goals\*Social Goals Gap Adoption Fraction)/Total Goals

Units: Dmnl

"Table, Gap btw Winery Eq. Social Goals and Customer Social Preference Perception to Social. Eq. Goals"

$((-2,-2)-(-2,2)),(-1.97505,1.93711),(-1.44283,1.79874),(-0.993763,1.42138),(-0.569647,0.754717),(0,0),(0.345114,-0.867925),(0.752599,-1.35849),(1.2183,-1.6478),(1.2183,-1.6478),(1.59252,-1.84906),(1.97505,-1.92453))$

Units: Dmnl

Total Goals=1

Units: Dmnl

Environmental Goals Adoption Rate=IF THEN ELSE(("Social and Env. Goals Possible Adoption Fraction"\*Efficiency Goals  
)>0,("Social and Env. Goals Possible Adoption Fraction"\*Efficiency Goals\*Environmental Goals Word of Mouth)/"Social and Env. Goals Adoption Time", 0)

Units: Dml/Year

### Equations Figure 3.3.7: Environmental Goals Adjustment

Customer Environmental Preferences=0.15

Units: Dmnl

Customer Environmental Preferences Perception=0.15

Units: Dmnl

Customer Environmental Preferences Satisfaction=  
1-(Customer Environmental Preferences-Environmental Goals)

Units: Dmnl

Environmental Goals= INTEG (Environmental Goals Adoption Rate,0.02)

Units: Dmnl

Environmental Goals Adoption Rate=IF THEN ELSE(("Social and Env. Goals Possible Adoption Fraction"\*Efficiency Goals  
)>0,("Social and Env. Goals Possible Adoption Fraction"\*Efficiency Goals\*Environmental Goals Word of Mouth)/"Social and Env. Goals Adoption Time", 0)

Units: Dml/Year

Environmental Goals Gap=Equilibrium Environmental Goals-Environmental Goals

Units: Dmnl

Environmental Goals Gap Adoption Fraction=0.1\*Environmental Goals Gap

Units: Dml/Year

Environmental Goals Word of Mouth=(Environmental Goals\*Efficiency Goals\*Environmental Goals Gap Adoption Fraction)/Total Goals

Units: Dmnl

"Eq. Env. Goal Gap Change"

"Eq. Env. Goal Gap Change"=(Equilibrium Environmental Goals-Customer Environmental Preferences Perception)

Units: Dml/Year

Equilibrium Environmental Goals=Environmental Goals+"Table, Gap btw Winery Eq. Env. Goals and Customer Env. Preference Perception to Env. Eq. Goals"("Gap btw Winery Eq. Env. Goals and Customer Env. Preferences Perception")

Units: Dmnl

"Gap btw Winery Eq. Env. Goals and Customer Env. Preferences Perception"= INTEG ("Eq. Env. Goal Gap Change",0)

Units: Dmnl

"Table, Gap btw Winery Eq. Env. Goals and Customer Env. Preference Perception to Env. Eq. Goals"([(-2,-0.05)-(2,0.05)],(-2,0.05),(-1.59252,0.0446541),(-0.927235,0.0358491),(-0.345114,0.0226415),(0,0),(0.203742,-0.0119497),(0.627859,-0.0298742),(1.13514,-0.0415094),(2,-0.05))

Units: Dmnl

### **Equations Figure 3.3.14: Knowledge Acquisition and Depletion Process**

"Av. Goals Gap"=(Efficiency Goals Gap+Social Goals Gap+Environmental Goals Gap)/3

Units: Dmnl

"Av. Knowledge Acquisition Time"=1+"Effect Leadership Effectiv on Av. Knowl. Acq. Time"

Units: Year

"Av. Knowledge Forgotten Time"=1

Units: Year

"Effect Goals Gap to Eq. Knowledge"="Table, Goals Gap to Eq. Knowledge"("Av. Goals Gap")

Units: Dmnl

"Effect Leadership Effectiv on Av. Knowl. Acq. Time"="Table, Leadersh. Eff. to Av. Knowl. Acq. Time"(Leadership Effectiveness)

Units: Dmnl

"Effect Well-Being Gap to Eq. Knowledge"="Table Well-Being Gap to Eq. Knowledge"("Well-Being Gap")

Units: Dmnl

"Eq. Knowledge"=Knowledge+"Effect Goals Gap to Eq. Knowledge"+"Effect Well-Being Gap to Eq. Knowledge"

Units: Dmnl

Knowledge= INTEG (Knowledge Acquisition-Knowledge Forgotten,1)

Units: Dmnl

Knowledge Acquisition=Knowledge Forgotten+("Eq. Knowledge"-Knowledge)/"Av. Knowledge Acquisition Time"

Units: Dml/Year

Knowledge Forgotten= (Knowledge\*Knowledge Forgotten Fraction)/"Av. Knowledge Forgotten Time"

Units: Dml/Year

Knowledge Forgotten Fraction= 0.1

Units: Dmnl

"Table Well-Being Gap to Eq. Knowledge"([(0,0)-(1,1)],(0,0),(0.288981,0.157233),(0.50104,0.352201),(0.56341,0.537736),(0.632017,0.814465),(0.81289,0.930818),(1,1))

Units: Dmnl

"Table, Goals Gap to Eq. Knowledge"([(-1,0)-(1,1)],(-1,1),(-0.825364,0.613208),(-0.621622,0.27673),(-0.334719,0.081761),(0,0),(0.322245,0.0943396),(0.609148,0.267296),(0.821206,0.610063),(1,1))

Units: Dmnl

"Table, Leadersh. Eff. to Av. Knowl. Acq. Time"([(0,0)-(10,10)],(0,10),(1.80873,9.5283),(3.07692,8.71069),(4.53222,7.07547),(5.15593,4.21384),(6.38254,2.26415),(7.85863,0.974843),(10,0))

Units: Dmnl

### Equations Figure 3.3.18: Awareness and Opportunity Recognition Processes

"Av. Awareness Change Time"= 1+"Effect Uncertainty Bearing to Av. Aware. Change Time"

Units: Year

Awareness Change=("Eq. Awareness"-Awareness Level)/"Av. Awareness Change Time"

Units: Dmnl/Year

Awareness Level= INTEG (Awareness Change,1)

Units: Dmnl

"Effect Awareness to Opp. Recognition"="Table, Awareness to Opp. Recognition"(Awareness Level)

Units: Dmnl

"Effect Knowledge to Opp. Recognition"="Table, Knowledge to Opp. Recognition"(Knowledge)

Units: Dmnl

"Effect Risk Aversion to Opp. Recognition"="Table, Risk Aversion to Opp. Recognition"(Risk Aversion Level)

Units: Dmnl

"Effect Uncertainty Bearing to Av. Aware. Change Time"="Table, Uncertainty Bearing to Av. Aware. Change Time"(Uncertainty Bearing)

Units: Year

"Eq. Awareness"=1+(0.1\*Knowledge)

Units: Dmnl

Knowledge = A FUNCTION OF( )Knowledge= INTEG (Knowledge Acquisition-Knowledge Forgotten,1)

Units: Dmnl

Opportunities Recognition=(("Effect Awareness to Opp. Recognition"+"Effect Knowledge to Opp. Recognition"+"Effect Risk Aversion to Opp. Recognition")/3)-0.2

Units: Dmnl

Risk Aversion Level=0

Units: Dmnl

"Table, Awareness to Opp. Recognition"([(0,0)-(10,1)],(0,0),(1.85031,0.0534591),(3.49272,0.13522),(5.34304,0.333333

),(5.96674,0.534591),(6.94387,0.801887),(8.46154,0.930818),(10,1))

Units: Dmnl

"Table, Knowledge to Opp. Recognition"([(0,0)-(10,1)],(0,0),(1.30977,0.0503145),(2.9106,0.106918),(4.42827,0.242138),(5.65489,0.380503),(6.2578,0.531447),(6.96466,0.757862),(7.73389,0.877358),(8.85655,0.955975),(10,1))

Units: Dmnl

"Table, Risk Aversion to Opp. Recognition"([(0,0)-(1,1)],(0,1),(0.158004,0.940252),(0.305613,0.811321),(0.37422,0.584906),(0.463617,0.374214),(0.588358,0.198113),(0.800416,0.0849057),(1,0))

Units: Dmnl

"Table, Uncertainty Bearing to Av. Aware. Change Time"([(0,0)-(1,10)],(0,10),(0.162162,9.27673),(0.245322,8.93082),(0.378378,6.94969),(0.455301,5.18868),(0.503119,3.23899),(0.617464,1.98113),(0.769231,1.25786),(1,0))

Units: Dmnl

Uncertainty Bearing=1

### Equations Figure 3.3.23: Social Norms Internalization Process

"Av. Social Norms Internalization Time"=1+("Effect Awareness Level to Soc. Norms Internalization Time"+"Effect Leadership Effectiveness to Soc. Norms Internaliz. Time")/2

Units: Year

Awareness Level = A FUNCTION OF( )Awareness Level= INTEG (Awareness Change,1)

Units: Dmnl

"Effect Awareness Level to Soc. Norms Internalization Time"="Table, Awareness Level to Soc. Norms Internalization Time"(Awareness Level)

Units: Dmnl

"Effect Leadership Effectiveness to Soc. Norms Internaliz. Time"="Table, Leadership Effectiv. to Social Norms Intern. Time"(Leadership Effectiveness)

Units: Dmnl

"Eq. Social Norms Internalization"= 1

Units: Dmnl

Leadership Effectiveness = A FUNCTION OF ( )Leadership Effectiveness= INTEG ("Leadership Eff. Gain"-  
"Leadersh. Eff. Loss", 0.5)  
Units: Dmnl

Social Norms Internalization= INTEG (Social Norms Internalization Rate,0.5)  
Units: Dmnl

Social Norms Internalization Rate=("Eq. Social Norms Internalization"-Social Norms Internalization)/"Av.  
Social Norms Internalization Time"  
Units: Dml/Year

"Table, Awareness Level to Soc. Norms Internalization Time"([(0,0)-  
(10,10)],(0,10),(1.4553,9.5912),(2.74428,9.08805),(4.11642,7.45283),(5.07276,5.03145),(6.09148,2.4213  
8),(7.81705,0.943396),(10,0))  
Units: Dmnl

"Table, Leadership Effectiv. to Social Norms Intern. Time"([(0,0)-  
(10,10)],(0,10),(2.24532,9.08805),(3.80457,7.73585),(4.92724,5.69182),(5.77963,3.27044),(7.40125,1.38  
365),(8.58628,0.628931),(10,0))  
Units: Dmnl

### Equations Figure 3.3.26: Well-Being Adjustment Process

"Effect Awareness to Eq. Well-Being"="Table, Awareness to Eq. Well-Being"(Awareness Level)  
Units: Dmnl

"Effect Knowledge to Eq. Well-Being"="Table, Knowledge to Well-Being"(Knowledge)  
Units: Dmnl

Effect Similar Social Norms btw Employees and Winery on Firm Identification="Table, Similar Soc. Norms  
btw Employees and Winery to Firm Identification"(Similar Social Norms Level btw Employees and  
Winery)  
Units: Dmnl

"Eq. Well-Being"=Max(0,IF THEN ELSE( "Well-Being"<0.5 , "Well-Being"-0.01 , "Well-Being"+(Social  
Norms Internalization  
+Effect Similar Social Norms btw Employees and Winery on Firm Identification+"Effect Awareness to Eq.  
Well-Being"+"Effect Knowledge to Eq. Well-Being"))  
Units: Dmnl

Similar Social Norms Level btw Employees and Winery=1



Units: Dmnl

"Table, Awareness to Eq. Well-Being"([(0,0)-(2,10)],(0,0),(0.449064,0.849057),(0.910603,2.10692),(1.11019,3.6478),(1.2474,6.47799),(1.43867,8.33333),(1.83368,9.5912),(2,10))

Units: Dmnl

"Table, Knowledge to Well-Being"([(0,0)-(10,1)],(0,0.251572),(2.45322,0.248428),(4.40748,0.311321),(5.80042,0.427673),(6.65281,0.559748),(6.98545,0.764151),(7.90021,0.883648),(10,1))

Units: Dmnl

"Table, Similar Soc. Norms btw Employees and Winery to Firm Identification"([(0,0)-(1,1)],(0,0),(0.224532,0.072327),(0.465696,0.254717),(0.565489,0.591195),(0.717256,0.858491),(0.871102,0.962264),(1,1))

Units: Dmnl

"Well-Being Change Av. Time"= 0.1

Units: Year

"Well-Being Change"= ("Eq. Well-Being"- "Well-Being")/"Well-Being Change Av. Time"

Units: Dml/Year

"Well-Being Gap"=IF THEN ELSE( "Eq. Well-Being"- "Well-Being"<0 , 0 , "Eq. Well-Being"- "Well-Being")

Units: Dmnl

"Well-Being"= INTEG ("Well-Being Change",0.5)

Units: Dmnl

### Equations Figure 3.3.30: Entrepreneurship and Leadership Effectiveness

"Av. Time Entrepreneurship Eff. Gain"= 1+ (10/(Awareness Level+Knowledge+Opportunities Recognition+(2\*"Well-Being")))

Units: Year

"Av. Time Leadership Eff. Gain"= 1+(10/(Awareness Level+Knowledge+(2\*"Well-Being")))

Units: Year

"Effect Awareness to Opp. Recognition"="Table, Awareness to Opp. Recognition"(Awareness Level)

Units: Dmnl

"Effect Knowledge to Opp. Recognition"="Table, Knowledge to Opp. Recognition"(Knowledge)  
Units: Dmnl

"Effect Risk Aversion to Opp. Recognition"="Table, Risk Aversion to Opp. Recognition"(Risk Aversion Level)  
Units: Dmnl

"Entrep. Eff. Loss"=(Entrepreneurship Effectiveness\*"Entrepreneurship Effectiv. Fraction Loss")/"Entrepreneurship Effectiv. Loss Av. Time"  
Units: Dml/Year

"Entrepreneurship Eff. Gain"=("Eq. Entrepreneurship Effectiveness"-Entrepreneurship Effectiveness)/"Av. Time Entrepreneurship Eff. Gain"  
Units: Dml/Year

"Entrepreneurship Effectiv. Fraction Loss"=0.1  
Units: Dmnl

"Entrepreneurship Effectiv. Loss Av. Time"=1  
Units: Year

Entrepreneurship Effectiveness= INTEG ("Entrepreneurship Eff. Gain"- "Entrep. Eff. Loss",0.5)  
Units: Dmnl

"Eq. Entrepreneurship Effectiveness"= 1  
Units: Dmnl

"Eq. Leadership Effectiveness"= 1  
Units: Dmnl

"Leadersh. Eff. Loss"= (Leadership Effectiveness\*"Leadership Effectiv. Fraction Loss")/"Leadership Effectiv. Loss Av. Time"  
Units: Dml/Year

"Leadership Eff. Gain"= ("Eq. Leadership Effectiveness"-Leadership Effectiveness)/"Av. Time Leadership Eff. Gain"  
Units: Dml/Year

"Leadership Effectiv. Fraction Loss"=0.1

Units: Dmnl

"Leadership Effectiv. Loss Av. Time"=1

Units: Year

Leadership Effectiveness= INTEG ("Leadership Eff. Gain"- "Leadersh. Eff. Loss",0.5)

Units: Dmnl

Opportunities Recognition=(("Effect Awareness to Opp. Recognition"+"Effect Knowledge to Opp. Recognition"

+"Effect Risk Aversion to Opp. Recognition")/3)

Units: Dmnl

"Table, Awareness to Opp. Recognition"([(0,0)-(10,1)],(0,0),(1.85031,0.0534591),(3.49272,0.13522),(5.34304,0.333333),(5.96674,0.534591),(6.94387,0.801887),(8.46154,0.930818),(10,1))

Units: Dmnl

"Table, Knowledge to Opp. Recognition"([(0,0)-(10,1)],(0,0),(1.30977,0.0503145),(2.9106,0.106918),(4.42827,0.242138),(5.65489,0.380503),(6.2578,0.531447),(6.96466,0.757862),(7.73389,0.877358),(8.85655,0.955975),(10,1))

Units: Dmnl

"Table, Risk Aversion to Opp. Recognition"([(0,0)-(1,1)],(0,1),(0.158004,0.940252),(0.305613,0.811321),(0.37422,0.584906),(0.463617,0.374214),(0.588358,0.198113),(0.800416,0.0849057),(1,0))

Units: Dmnl

### **Equations Figure 3.3.31: Productivity and Work Quality Process and Social Goals Adoption Time**

"Effect Av. Entre. and Leader. to Productiv./Quality Change Time"="Table, Av. Entrep. and Leader. Effec. to Produc./Quality Av. Change Time"(Average Entrepreneurship and Leadership Effectiveness)

Units: Dmnl

"Effect Productivity/Quality to Social Goals Adoption Time"="Table, Productivity/Quality to Social Goals Adoption Time"("Productivity/Quality")

Units: Dmnl

"Eq. Productivity/Quality"=1

Units: Dmnl

"Productivity/Quality Change Time"=0.1+"Effect Av. Entre. and Leader. to Productiv./Quality Change Time"

Units: Year

"Productivity/Quality Change"= ("Eq. Productivity/Quality"- "Productivity/Quality")/"Productivity/Quality Change Time"

Units: Dml/Year

"Productivity/Quality"= INTEG ( "Productivity/Quality Change", 0.5)

Units: Dmnl

"Table, Av. Entrep. and Leader. Effec. to Produc./Quality Av. Change Time"([(0,0)-(1,10)],(0,10),(0.0997921,9.49686),(0.241164,8.58491),(0.33264,6.98113),(0.430353,5.18868),(0.49896,3.86792),(0.596674,2.7044),(0.683992,1.94969),(0.798337,1),(0.997921,1))

Units: Dmnl

"Table, Productivity/Quality to Social Goals Adoption Time"([(0,0)-(1,5)],(0,5),(0.0935551,4.77987),(0.261954,4.48113),(0.397089,3.42767),(0.440748,2.31132),(0.555094,1.24214),(0.735967,0.534591),(1,0.1))

Units: Dmnl

## VITA

Neus Raines received her doctoral degree in applied economics from the University of Missouri-Columbia in 2013. Before moving to Columbia-Missouri in 2008, Neus completed her master studies in Globalization, Development, and Cooperation at the University of Barcelona while working as a research assistant at the Department of Rural Development at the Autonomous University of Barcelona. Neus pursued her undergraduate studies in business administration at the Autonomous University of Barcelona and worked for several known companies, such as General Motors during this time. She completed the last year of her undergraduate studies at the University of California Santa Barbara thanks to earning the international mobility scholarship.

Neus is currently an online teacher of Global Economics at the European University Business School MBA program. Neus' primary areas of research and teaching are organizational learning, leadership, strategic management, entrepreneurship, and economic development. Her research has appeared in the proceedings of the System Dynamics International Conference and in economic technical reports in the U.S., E.U., and Spain. Neus has served as an organizer of the Ph.D. Colloquium of the System Dynamics Society Ph.D. Students Chapter during 2012-2013.