"False Idol" Economy: The New Zealand Wine Industry

Garry Clayton and Natalie Stevens

Abstract—The New Zealand Wine Industry is desperately attempting to portray itself as a major force of the national economy worth "idolising" for its stunning growth and success. It triumphs the fact that it produces over a billion glasses of wine per year and generates over a billion dollars in revenue.

While it rightly highlights its successes the industry has unconsciously exposed the fact that it is a "false idol" with nearly 90% of its producers being uneconomic. The industry blames the burdens of excessive taxation and inflated exchange rate not business practises for poor performance and campaigns to change the regulatory and fiscal framework that the industry operates in.

Seductive though the argument and reasoning appears, it is false. A critical review of the industry highlights that it lacks scale and poor utilizes capital investment.

This paper carefully reviews the nature of the New Zealand wine industry, the perceptions of its success, the misdiagnosis of business challenges, and the identification of alternative options for sustainable business success.

Keywords— Strategic Management, New Zealand, Wine Industry, Sustainability.

I. INTRODUCTION

THE New Zealand Wine Industry is fast becoming as sophisticated and innovative in lobbying, as its members are in producing internationally acclaimed wines. This is perhaps best illustrated by the latest annual report of the New Zealand Winegrowers which is as much a carefully crafted polemic as it is a review of actual industry performance.

By fact selection and sophistry it suggests that the industry is a "serious player in the New Zealand economy and the international wine trade" [1].

Superficially such a claim is seductive. The industry has annual sales of \$1.2 billion and its British sales rank it the second most valuable export

Manuscript submitted June 14, 2007: Revised version submitted October 1 2007.

Garry J. Clayton is with the Charlton College of Business, University of Massachusetts Dartmouth, 285 Old Westport Road North Dartmouth MA 02747-2300 USA phone: 508 999 8261; e-mail: gclayton@umassd.edu).

Natalie Stevens is the Marketing Manager for the Hastings City Council in Hawkes Bay New Zealand (natalie@hastingscity.co.nz)

to that market. More importantly wine critics worldwide acclaim the New Zealand wine [2].

For all the hype however, overall the industry is a relatively poor economic performer. Of the 543 wineries in production, 483 can be classified small to medium size enterprises (SME's). At nearly 90% of the industry this is slightly under the national average for SME's which generally account for 97% of the Nation's firms [3]. On average, the 483 SME wineries have a negative return of approximately 5% to their owners. This compares poorly to primary industries generally which average a positive 3% and definitely unfavourably to a national average of all industries who display a positive return of 11% [4].

II. PROBLEM

The 'rose coloured' view of the industry defies the reality of weak industry performance, indicated by low returns versus high production inputs, and is symptomatic of the flaws in analysis from the New Zealand Wine Industry collectively. That is not to decry what the industry has achieved in 150 years of existence, rather it is simply to state that academics, business leaders and policy makers need to be wary of relying on industry inspired biased reporting and continued expansion at the peril of reality checks.

To provide a balanced analysis and clearly identify the challenges and opportunities which face the New Zealand Wine Industry the authors of this paper have critically reviewed both the annual report of the New Zealand Wine Growers [5] and the commissioned Deloitte's New Zealand Wine Industry Benchmark Survey Vintage 2006.

A. Methodology

The authors of this paper have used a case study methodology to critically review the performance of the New Zealand Wine Industry. Government statistics coupled with documents in the public domain have been used to provide empirical quantitative evidence for the assessment. Qualitative evidence has been gathered from parliamentary debates, newspaper articles, industry journals, and personal interviews.

B. Industry

Globally, the New Zealand Wine Industry is both young and dynamic. While it can claim to be over 150 years old this is not even a tenth of the time that the European industry has

been operating (many districts having continuous production since the time of Roman Imperial rule).

As a recognised quality producer of fine wines, New Zealand's reputation is even more youthful. In less than 40 years it has gone from 'curiosity' to 'commended'. In 1970, only \$41 thousand dollars of wine was exported from New Zealand, in 2007 this had grown to \$700 million. The phenomenal growth in export revenues has been achieved by equally impressive growth in the number of wineries, grape growers, and production. For example in the ten years from 1997 to 2007 wine production has grown from 45.8 to 147.6 million litres. In the same period plantings have grown from just under 7,500 hectares of production for 262 wineries to over 24,500 hectares in production for 543 wineries. Grape growers have been an important contributor to this growth. In 2007 there were over 1000 registered grape growers compared to 534 in 2003 representing nearly a 100% increase in just 5 years [6].

Success for the New Zealand Wine Industry has been based on quality production and proactive promotion of varietal wine, in particular Sauvignon Blanc [7]. This combination has ensured the development of a solid Australian and European market along with a massive surge in American interest [8].

C. Myths and Reality

The culture surrounding the New Zealand Wine Industry in the early part of the twenty-first century is akin to that of the sixteen century merchant gamblers of England. Wealth and prosperity are to be assured through enterprise, exploration, exploitation and endurance. Like the aforementioned sixteenth century merchants, the New Zealand Wine Industry perceives itself as a "serious business" without acknowledging the perilous nature of the endeavour.

The wine industry justifiably heralds its successes and achievements, be they production increases or revenues achieved. In 2007, for example, New Zealand sold a billion glasses of wine for \$1.2 billion dollars worth of revenue in 95 different countries. These impressive statistics are combined with the facts that wine is now the second most valuable export to Britain, and ranks fifth in both Australia and the European Union [9]These facts are incontestable and worthy of praise. What is concerning is the leap the industry then makes in its analysis to claim its arrival as an "economic force" both nationally and internationally. Impressive as the growth in the New Zealand Wine Industry has been, it remains internationally inconsequential, and is nationally an economic underperformer.

Internationally New Zealand wine accounts for a half a percent of the world's total production [10]. Nationally the wine industry performance fares even worse, representing less than a quarter of a percent of the country's \$30 billion total merchandising exports, and its \$500 billion Gross Domestic Product (GDP). To put it more graphically New Zealand's pastoral based industries contribute 43% of export receipts with their 'by-products' alone, contributing over \$1 billion dollars in export earnings with considerably less fan fare and

puffery than is evident in the pronouncements from the New Zealand wine industry. [11]

Of greater concern than its relative small scale, is New Zealand's over reliance on one varietal grape from one region, Marlborough Sauvignon Blanc. Marlborough has been the driving force behind industry growth producing 62% of New Zealand wine [12] and has provided the basis for New Zealand's international reputation as a quality producer of wine. In 2007 Sauvignon Blanc accounts for over 40% of plantings, 50% of the vintage and 75% of all export sales. Some experts claim that future survival for wineries will be dependant on the inclusion of Sauvignon Blanc in their overall product portfolio [13]. The risk this reliance represents is clearly highlighted by the Australian example where large scale planting and production led to commoditisation of the product and a consequential tumble in returns [14].

Adding to this disproportionate reliance on a single varietal is the concerning trend for most of the expansion in the industry to come from boutique (SME) wineries. Of the 543 wineries only nine have annual sales exceeding 2,000,000 litres and another 51 sell between 200,000 and 2,000,000 litres. This represents over two thirds of sales by just ten percent of the industry. The remaining 483 (approximately 90%) of the vineyards sell less than 200,000 litres per year. These wineries have increased in number by nearly 100 % in the decade 1997-2007 (from 244 to 483). Of concern, this segment is failing to make adequate returns on investment but is responsible for the latest surge in export growth. While having on average a negative 5% return on investment these vineyards increased their exports by 39% in 2007 [15].

In order to address the unsustainable position of increased production on negative returns, the industry has commenced a subtle campaign to reduce compliance costs. Drawing on the Deloitte 2006 New Zealand Wine Industry Benchmark Survey, the Winegrowers Annual Report highlights the fact that 10% of revenues of small to medium sized vineyards go to cover taxes and levies [16]. Compliance costs were also raised in Parliament during debate on the Geographical Indicators (Wine and Spirits) Registration Act 2006, when it was argued that the industry was overtaxed by \$130 million per annum. This calculation was based on the imposition of excise duty on wine, which is over and above all other standard taxes [17].

What is not highlighted by the industry is the fact that the largest producers do not view compliance costs as an important issue. For them, it represents less than 3% of costs, and ranks 9th out of the 10 key issues that challenge the New Zealand Wine Industry [18]. The industry also omits to acknowledge that infrastructure and overhead are the culprits crippling small to medium sized vineyards. Small wineries for example, spend 22% or a fifth of revenues on overheads, compared to larger producers who spend just over 6%. This is further reflected in the size and nature of assets. Larger producers have over a third of capital in land and less than 20% in plant and production. By comparison, small and medium sized operators have on average, over 50% of capital

locked up in plant and production, and only 14 % in land assets [19]. Rather than being overtaxed it could be argued that the industry is simply overcapitalised.

Of genuine concern for all in the industry is promotion, particularly in export markets [20]. In response to this challenge, winegrowers have launched a new marketing brand image entitled "New Zealand - Pure Discovery". Lauded as one of this years ten highlights, this bold initiative is designed to lever off existing consumer perceptions of New Zealand vineyards as adventurous, high quality, new world producers. The campaign itself is a crucial component of the push to lift export sales of New Zealand wine from the current \$700 million to \$1 billion by 2010 [21]. While presented as a bold target, the desired 42% cumulated growth in 3 years is maybe overly cautious. The last three years has witnessed an average 33% per annum increase, or 135% cumulative expansion. In the last ten years the average has been slightly less with a 25% per annum growth or 95% cumulative expansion [22]. At a minimum, the expectation for a confident, economically vital industry would be for a target of just under \$1.4 billion in export sales and a truly bold and challenging target would be in excess of \$1.6billion.

The rather poor analysis and focus for export growth is mirrored in the winegrowers ostensible dismissal of the domestic market. To some extent this is understandable. As exports account for 60% of sales and continue to rise, many producers have prioritised their focus externally. What is not understandable is the oversight by the industry of the importance of a domestic market that is still growing at a reasonable, if not rapid rate. From 1997 to 2007 the New Zealand domestic market grew from 61 million litres of wine to 93 million litres - a 52% increase. However the stark reality is that New Zealand producers' share of their own market declined from 62% to 54%. In comparison, imported wine has grown from 22 million litres to 42 million litres, an impressive 89% increase in the same period [23]. If the New Zealand producers had expanded in proportion to their market it would equate to an additional eight million litres of wine sold domestically. Had they managed to perform at the same level as their competitors, an additional 35 million litres in sales would have entered their coffers. Optimal performance should allow the wine industry's domestic sales to equal if not surpass export sales.

III. FUTURE DIRECTIONS

Inadequate assessment of market conditions is further highlighted by the somewhat subdued recognition of the value of the passage of the Geographical Indicators (Wine and Spirits) Registration Act 2006 (GI Act 2006). While rightly noting that the enactment is a major milestone and will provide an opportunity for producers to "enhance the value and distinctiveness of their products" it is not perceived as a

highlight of the year [24]. This legislation, rather than being marginalized, should be triumphed as the likely harbinger of a Schumpeter style creative wave of revolution through the New Zealand Wine Industry [25].

The GI Act 2006 has been carefully crafted by the government to have three inter-related and integrated protective purposes for the long term economic gain of the New Zealand's wine industry. Firstly, the legislation is designed to protect the wine producers. For them, it will enable the creation of protected wine regions vitally important as a marketing and promotional tool in developing and maintaining market share. Secondly, it is an act that will protect consumers. For consumers it will enable better informed and guaranteed purchasing decisions to be made with regard to New Zealand wine. Finally, it is an act that aims at protecting New Zealand's international reputation. The Act provides a clear and transparent framework for honouring its obligations as a signatory of the World Trade Organization Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) [26]

In an initial review of the legislation, by McGregor, Laird and Newland of the law firm Bell Gully, it was suggested that the Government primarily saw the marketing advantages for New Zealand producers. Mcgregor et al argued if this was not its purpose it would simply become a legislative devise purely for the protection of registered names and little else. What the legal reviewers clearly failed to see is the significance of this legislation being brought forward in the light of TRIPS [27]. Clearly this suggests that it is the New Zealand's wine growing competitors who have identified the marketing advantage and the legislation by the New Zealand government simply acknowledges that fact.

The GI Act 2006 is not the first governmental acknowledgement of the potential benefits of clearly defined New Zealand wine regions. As legislation the GI Act 2006 itself repeals and replaces the earlier Geographical Indications Act 1994 [28]. As with its successor, the GI Act 1994, was passed in response to the obligations required of New Zealand by articles 22 and 23 of TRIPS. Article 22 requires New Zealand to have laws for the registration of geographical indicators that prevent the misleading of the public as to the geographical origin of goods. Article 23 requires laws which specifically prevent the use of a geographical indication identifying wines not originating in the place indicated by the geographical indication (interestingly this applies even where the public is not being misled) [29].

The GI Act 1994 was allied to the 1990 Winemakers Regulations which had endeavoured to create a five level hierarchical system of geographical origin of wines. At the top was New Zealand, followed by North or South Island, Region, Locality, and finally Vineyard. Though both the GI Act 1994 and the 1990 Winemakers Regulations established a relatively easy to understand system and framework within which to create formally registered New Zealand wine districts they did not receive active industry support[30]. In fact, evidence of the utter lack of industry support is that no districts were formally registered and neither the legislation nor the

regulations were enacted. For the most part it would appear that the indifference was because it appeared to be an attempt to impose a system dictated by European trade negotiators. Having a focus on quality of process and method in wine making, many considered the notion of *terroir* as both pretentious and non-scientific [31].

In stark contrast to the early 1990's the Parliamentary debates regarding the passage of the GI Act 2006 clearly indicate that the legislation now has the industry support vitally necessary for it to succeed. Significantly, it is the more successful exporters who wish to take advantage of protected designated regions. They wish to capitalise internationally on the perceived qualities and characteristics attributed to geographical origin. [32].

A major concern which the winegrowers are seemingly ignoring is the lack of unanimous political support. In the parliamentary debate and in the crucial votes the Maori Party voted against this legislation. Not because of inherent growth of bureaucracy nor because it has been required by unpopular international agreements. Rather their concern is that the legislation opens up the possibility of wine makers appropriating culturally important names of hapu (sub tribe) and iwi (tribe) [33]. Such opposition flags the potential for ongoing and costly litigation. In Australia nearly a decade of court cases and millions of dollars were expended over who could legitimately use the designation "Coonawarra". In Europe similar litigation has resulted in the small Swiss town of Champagne in Vaud Canton, which had produced sparkling wines hundreds of years, not been able to use "Champagne" as a place of origin [34].

Though litigation is an ever present danger for New Zealand wine growers the importance of the GI Act 2006 is immense. It provides a real opportunity for New Zealand Wines to become known as much, if not more, for their geographical place of production as for their varietal type [35].

Such an opportunity is of increasing importance if the industry is to develop and maintain international market share. The industry can no longer rely upon generic national promotions as are currently in vogue. European research indicates that fewer than 1 in 10 consumers confine their wine purchases to any particular country [36]. Consumer fickleness has been a prime motivator for international producers to shift promotional focus from 'country of origin' or 'varietal type' to a regional focus [37]. Reinforcement of this shift has occurred as clear evidence surfaces that market price is positively affected by perceptions of regional superiority. Put simply consumers pay a premium for regions of perceived quality, particularly with regard to red wines [38] and in New Zealand's case, Sauvignon Blanc from the Marlborough region.

Intriguingly the establishment of Geographical Indicators is one development that the New Zealand Wine Growers can make a justifiable claim for direct governmental support. To maximize returns associated with enforced standards of an Geographical Indicators, an economic argument can be made for a subsidy equivalent to any extra cost incurred in

production to achieve production in a Pareto efficient manner[39].

Production increase is only one potential methods for wineries to improve their financial viability. Indeed a striking features of the growth in the wine industry internationally is the trend away from production, cellar door tasting and sales to all inclusive experiences. Growth in tourism and associated activities has transformed some wineries into destinations in their own right. Traditional cellars are now accompanied by fine dining restaurants, premier accommodation, musical concert venues, and gallery spaces for artistic displays. Marlborough, Martinborough and Hawke's Bay have all created major weekend tourist events based around sampling the regions faire. In Hawke's Bay for example, the Mission Estate Winery is famed not only for its wine and restaurant but more recently for its annual "big name" outdoor summer concerts. In 2007, Eric Clapton (who some regard as the worlds greatest guitarist) played to a sell out crowd, other musicians of note have included Dionne Warwick, Ray Charles, Kenny Rogers, Shirley Bassey, Julio Iglesias, Rod Stewart, and New Zealand's own Kiri Te Kanawa. Virtually next door to the Mission Estate, the Church Road winery competes with its own summer jazz concert, while just a few miles away Sileni Estates promotes itself as "much more than just a winery - it is an Epicurean Centre". It features both alfresco and indoor dining along with its own culinary school and a gourmet food store. In addition they provide space for sculptors to exhibit their latest creations. This 'wine event tourism' is a model reflected in many New Zealand wine growing districts and many consider critical to survival. Several regions have developed single, and in some cases multi level marketing bodies to unify their wine growing districts as the industry continues to proliferate with boutique wineries and New Zealand competes for the ever lucrative tourist dollar. While tourist diversification can be highly profitable it requires considerable initial capital to establish.

To counter the needs for additional capital outlay and achieving industry success the New Zealand wine industry has rightly identified the imperative of a "co-operative and innovative mindset" [40]. What is not identified is that this can also create a robust and economically viable business model. To reduce capital outlay and achieve economies of scale it would behove New Zealand's small to medium sized vineyards to adopt the dairy industry's co-operative business model. Experimentation in wine industry co-operatives has already highlighted its economic advantages [41]. One of the most successful, is the well established "Cellars of Canterbury" co-operative. Utilising a business network grant from the New Zealand Trade and Development Board, and an initial investment of \$540 per winery per month to cover expenses, the "Cellars of Canterbury" was established in 1996. Five independent vineyards created the co-operative which has purchased a bottling plant, traded fruit, shared storage and marketed 'six packs' of their wine by mail order. To meet increased demand, the co-operative has also purchased additional grapes from independent grape growers

for pressing. While acting as a co-operative and creating a successful shared label, the five wineries have also maintained their original brands. Their approach has ensured they are not over capitalised on plant and equipment, and has led to economies of scale with significant cost savings. In bottle filling alone, each co-operative member has managed to shave 25cents per bottle in costs averaging \$50,000 in savings per year. This is an impressive return on the one-off cost of \$40,000 for the bottling equipment [42].

Though the New Zealand Wine Industry has yet to fully appreciate the economic advantages of a co-operative business model for is 483 small to medium sized vineyards it is alert to the threat posed by the restrictive trade argument cantered around the emotive notion of "food miles". Essentially protectionist European lobbyists have endeavoured to argue that the carbon costs of importing are proportional to the distance that goods have travelled. The ploy is to create the notion that locally produced products will have a significantly smaller carbon footprint than goods sourced at a distance.

As global warming and the need to reduce carbon emissions become central in international politics, neutralising the threat posed by the concept of "food miles" has become a priority for New Zealand. Fortunately the pioneering efforts of the "Sustainable Winegrowing New Zealand"(SWNZ) scheme positions the industry to more than meet the new challenge.

The SWNZ initiative was established in 1995 as three year trial to enhance integration of wine production evaluation and monitoring [43]. After reviewing current best international practise the Winegrowers adapted the Swiss triple bottom line "Wadenswill" scheme which focused on Environmentally Sound, Social Responsible, Economically Viable best practises. Though initially based on the Swiss scheme it has evolved into a unique New Zealand process [44]. It is a self audited independently analysed, world-leading, environment management system for sustainable winery practises that assists growers, wineries and consumers. It formalises feedback reporting and continuous improvement by reporting on national regional and individual best practise. As a self auditing exercise it demands that producers be conscious of individual practises and consequences. A direct beneficial outcome is its counter to the argument of "food miles" and places New Zealand at the forefront of 'green' economic, best business, practise. More importantly it is not simply spin doctoring or marketing hype. In its thirteen years of existence the membership in the scheme has been adopted in 60% of planted area and 70% of wine production [45].

In addition, there are a number of environmental programs now being adopted by New Zealand wineries, including Greenglobe, Environmark and New Zealand's own CarboNZero. Utilisation of these programs is in response growing consumer demand for ethical production. Although proving carbon neutrality is a lengthy process, it is affording wineries using the brand a significant increase in shelf spacing in European markets, in particular in New Zealand's biggest export market Britain [46].

IV. CONCLUSION

The success of "Sustainable Winegrowing New Zealand" and adoption of environmentally friendly practices is beginning to be recognised by industry players as providing a model for emulating economic sustainability. This suggests that the industry is aware of its perilous state despite the endeavour to portray robustness and vitality. The wine industry currently is not an economic force. When 90% of its participants are not producing a profit it would be false to portray it as such. rather it is acting as a drag with fundamental flaws that need to be addressed.

Reviewing the public domain reports and interviewing industry participants it is clear that the first priority for long term success is an objective view of industry strengths and weaknesses. It must be accepted that New Zealand is a small scale producer of high quality wines that is vulnerable due to fickle consumer tastes, distance to markets, and overcapitalisation of the majority of producers. Viability and true sustainability will not come with tinkering of regulatory frameworks, but collaboration, economies of scale and real market differences. Nationally the industry needs to embrace co-operative production and ensure it protects and enhances domestic market share. Internationally it needs to promote its distinctive regions, have a greater diversity in varietal types and have goals which truly stretch all involved.

REFERENCES

- [1] New Zealand winegrowers annual report year end June 2007. page 5 available: http://www.nzwine.com/wineries
- [2] New Zealand winegrowers annual report year end June 2007.pages 4-5 available: http://www.nzwine.com/wineries
- [3] available: http://www.med.govt.nz ISSN1178-2811
- [4] available: http://www.stats.govt.nz/products_and_services/info.release
- [5] New Zealand winegrowers annual report year end June 2007. available: http://www.nzwine.com/wineries
- [6] New Zealand winegrowers annual report year end June 2007. pages 24-25 available: http://www.nzwine.com/wineries
- [7] Burgess, N Rabobank Global Focus: New Zealand Still riding the wave. (Food and Agribusiness Research, Auckland) Winter 2006. and Turvey, M. "Oral Interview" with Garry Clayton and Natalie Stevens at Sacred Hill Winery, Puketapu 12 December 2006
- [8] New Zealand winegrowers annual report year end June 2007. available: http://www.nzwine.com/wineries
- [9] New Zealand winegrowers annual report year end June 2007 pages 4-5. available: http://www.nzwine.com/wineries
- [10] New Zealand wine –Retaining its focus: Industry Report (2005). available: http://www.rabobank.co.nz/inside-rabobank/news/media-release-240805.html
- [11] Available: http://www.maf.govt.nz/statistics/primaryindustries
- [12] Marlborough could be producing 70% of NZ wine (December 2006). available: http://www.scoop.co.nz/stories
- [13] Druzianic, D. "Oral Interview" Natalie Stevens at Markhams MRI Hastings New Zealand, December 7, 2007
- [14] Sheales, T. Apted, S. Dickenson, A.Kendall, R.and French, S. Australian Wine Industry: Challenges for the Future. ABER Research Report 06.16 October 2006

- [15] Deloitte New Zealand Wine Industry Benchmarking Survey:Vintage 2006 page 6 and New Zealand winegrowers annual report year end June 2007. pages 6,26-31. available: http://www.nzwine.com/wineries
- [16] Deloitte New Zealand Wine Industry Benchmarking Survey:Vintage 2006 page 11 and New Zealand winegrowers annual report year end June 2007. pages 8-9. available: http://www.nzwine.com/wineries
- [17] New Zealand Parliamentary Debates;15 December 2005,3 August 2006,7 November 2006 14 November 2006
- [18] Deloitte New Zealand Wine Industry Benchmarking Survey: Vintage 2006 pages 11,18
- [19] Deloitte New Zealand Wine Industry Benchmarking Survey:Vintage 2006 pages 10,12
- [20] Deloitte New Zealand Wine Industry Benchmarking Survey: Vintage 2006 page 18
- [21] New Zealand winegrowers annual report year end June 2007. pages 4-5. available: http://www.nzwine.com/wineries
- [22] New Zealand winegrowers annual report year end June 2007. pages 24-25. available: http://www.nzwine.com/wineries
- [23] New Zealand winegrowers annual report year end June 2007. pages 24-25,32-33. available: http://www.nzwine.com/wineries
- [24] New Zealand winegrowers annual report year end June 2007. pages 8-9. Available: http://www.nzwine.com/wineries
- [25] McGregor, D. Laird, L. and Newland, K. Cool climates: making meanings from vineyard to table. (Bell Gully, Auckland and Wellington) February 2006
- [26] New Zealand Parliamentary Debates (NZPD) 15 December 2005.
- [27] McGregor, Laird and Newland 2006
- [28] GI Act 1994
- [29] NZPD 15 December 2005.
- [30] Helliwell, Interview 2007
- [31] NZPD 15 December 2005
- [32] NZPD 15 December 2005
- [33] NZPD 14 November 2006
- [34] McGregor, Laird and Newland 2006
- [35] Helliwell, A. "Oral Interview" with Garry Clayton and Natalie Stevens at Triangle Red, Bridge Pa, Hastings, 7 February 2007
- [36] Chaney, I Promoting Wine by Country. in International Journal of Wine Marketing 2002, vol 4 Iss 1 pp34-42
- [37] Taplin,I (2006)Competitive pressures and strategic repositioning in the California premium wine industry. In *International Journal of Wine Marketing*, vol 18 no 1 pp61-7
- [38] Schamel, G and Anderson, K Wine Quality and Varietal, Regional and Winery reputation. Hedonic Prices for Australia and New Zealand Wines. VDQS Enometrics VIII Conference, Napa Valley, 21-22 May 2001
- [39] Moschini, G.C., Menapace, L. and Pick, D. Geographical Indications and the Competitive Provision of Quality in Agricultural Markets Working Paper 08-WP 458 January 2008 Center for Agricultural and Rural Development, Iowa State University
- [40] New Zealand winegrowers annual report year end June 2007. pages 4-5. available: http://www.nzwine.com/wineries
- [41] Blanc, J "Telephone Interview" with Garry Clayton and Natalie Stevens at Central Otago Wine Company Cromwell/ Eastern Institute of Technology Napier, 9 November 2006
- [42] Mckinnon L. Small pond, bigger fish. New Zealand Grape Grower Autumn 2002, 25-27
- [43] Manktelow, D, Renton, T Gurnsey, S "Technical developments in Sustainable Winegrowing New Zealand" presentation to Romeo Bragato Conference Christchurch 2002
- [44] Renton, T, Manktelow, D Kingston, C "Sustainable Winegrowing: New Zealand's place in the world presentation to Romeo Bragato Conference Christchurch 2002
- [45] New Zealand winegrowers annual report year end June 2007. pages 4-5. available: http://www.nzwine.com/wineries
- [46] Smith, N. 'Green Business' *The Independent* September 19, 2007

Garry J. Clayton earned a doctorate in military history in 1990 from the University of Waikato in New Zealand, a postgraduate diploma in business in 2005 from the University of Auckland in New Zealand and a postgraduate diploma in public policy in 2004 from Victoria University of Wellington in

New Zealand. He is also a 1992 graduate of thre New Zealand Defence Force Staff College.

He is currently the Director of Charlton College of Business at Cape Cod for University of Massachusetts Darmouth. He has previously held senior appointments in the New Zealand Army, Waikato Museum, the University of Auckland, Waikato University, and the Eastern Institute of Technology in New Zealand.

Dr Clayton has published and consulted in economic development, creativity, sustainability, professional education, military history, strategy, leadership and more recently the New Zealand wine industry.