

AUSTRALIA'S WINE INDUSTRY:

**Collaboration and Learning
as Causes of Competitive Success**

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Executive Summary

The Australian wine industry has experienced remarkable change since the mid-1980s. In the mid 1980s, Australia exported 2% of total production and was a net importer of wine. Since this time, industry performance has been spectacular. Exports now total 32% of total production (compared to 17% for the major producers, France and Italy). Australia produces only 2% of world wine, but now holds 2.4% of the world wine market by volume and 3.5% by value.

How is this performance to be explained? A decline in the value of the Australian dollar was one stimulus. Another factor was change in industry ownership affecting the structure and scale of individual firms. Other changes affected the industry's overall business orientation, its general engagement with international markets and its commitment to innovation.

Industry collaboration has facilitated, or contributed to, the last three of these changes. In the process, the wine industry has transformed itself. It has ceased to be composed solely of rivalrous, competitive firms. Fierce competitive rivalry between individual producers persists. But this has been supplemented by industry collaboration around matters of shared concern. The industry has raised its level of integration and is developing into a knowledge-driven cluster.

This achievement may embody experience of wider significance. Australia's past economic prosperity was essentially grounded on commodities and mineral products that were exported to world markets. Human skills were not insignificant in these activities - but they were secondary to what were seen to be naturally occurring comparative advantages.

The wine industry's success is based on a reversal of these relationships. Natural advantages still count. But humanly created advantages predominate. These have been amplified through collaborative action. A combination of collaboration and competition has replaced solely competitive relationships. This combination has been decisive in sustained success.

Three issues arise:

- What are the lessons for other business areas where similar international orientations need to be cultivated?
- What are the lessons for other areas where the transforming application of knowledge and innovation is essential to growth and competitive success?
- Can public policy contribute to these outcomes?

Answering these questions is the broad purpose of this study.

Recent scholarly theories about the conditions for industry growth are affirmed in wine industry practice. These theories concern the power of clustering, and the role of collaboration, in industry development. These literatures qualify, or amplify, neo-classical findings, which currently dominate public policy. In neo-classical perspectives, market failure and 'externalities' are to be corrected by market or quasi-market remedies. Collaboration is seen as an inhibitor, not facilitator, of competitive success. Action by governments is discounted - it encourages 'rent seeking.'

Recent literatures shift the focus of attention in two significant ways. First, they look behind markets to the conditions for their establishment. They look to conditions which are prior to market activity – conditions which rather create its possibility. Where innovation and global markets are critical to competitive success, these conditions cannot be taken for granted. Second, they give equal place to both transaction and production costs – and explore the resulting implications for firm success.

One of the conditions for the establishment of markets involves *economic learning* – that is, the recognition of opportunities and interdependencies by relevant firms and other players. The Strategy 2025 exercise, the keystone of Australian wine industry collaboration, was a classic example of this approach. This established an export objective and growth target for the industry, and identified the actions necessary for these outcomes to be realised. It broadened recognition of new growth opportunities and deepened recognition of the sources of competitive strength.

Once opportunities are recognised, other inhibiting conditions to businesses performance can arise from *transaction costs*, the costs involved in undertaking productive economic activity. Both exporting and innovation involve high transaction costs. Transaction costs are a distinct category, different from production costs, and gain in significance as firms are required to operate in distant markets or to base competitive advantage on innovation or knowledge.

Transaction costs can include those associated with searching for trading partners and markets and doing business effectively and efficiently. Transaction costs also arise in pursuing innovation and investing in research and development. There are costs involved in answering business questions like: will research address industry priorities, not just those of researcher? Will necessary interaction while research is in progress be facilitated? Will innovations be disseminated?

Without deliberate amelioration, the costs of gaining assurance about such matters readily deter firms from appropriate action.

The emergence of networking and collaboration is an organisational arrangement for managing such transaction costs.

Wine industry experience demonstrates conclusively the synergies that can be gained, and the energies that can be liberated, through a combination of collaboration and competition. It illustrates the challenge in sustaining collaboration - as a complement to, and facilitator of, competitive strengths amongst producers.

This experience has important lessons for other Australian sectors - and for government. One possibility is for groups of firms to emulate the wine industry approach. Other clusters or industries could act in concert to enhance their own efforts at marketing, innovation and overall industry strategy.

Another possibility is for industry associations to act as change agents. They could help their member businesses identify the additional competitive synergies available through collaboration and put in place the mechanisms to allow firms to pursue joint endeavours and strategic alliances.

Finally, the wine industry also suggests a catalytic role for government in encouraging other sectors to collaborate, to identify new opportunities, and to enhance their own performance.

Well orchestrated collaboration offers a way to create an '*export culture*.' It offers a way to identify shared economic interests and to overcome otherwise prohibitive transaction costs. It shows how clusters can ground their continued growth and success on distant markets and on innovation.

The approach adopted in the wine industry suggests a pattern for other Australian sectors. It shows how static commodity or production focussed businesses might be renewed - through the synergies of association that enhance the competitive power of human creativity and ambition.

Preface

This report, *Australia's Wine Industry: Collaboration and Learning as Causes of Competitive Success*, was commissioned by the Australian Business Foundation to explore the recent performance and export success of the Australian wine industry and to investigate the lessons it has for other sectors of Australian business and industry.

The Australian Business Foundation is an independent, private sector think-tank. Its mission is to strengthen Australian enterprise through research and policy innovation. It does this by conducting ground-breaking research, which it uses to foster informed and well-argued debates and imaginative policy solutions and initiatives.

The Australian Business Foundation was created at arm's length from its founder and sponsor, the eminent business services organisation, Australian Business Limited. The end goal is to advance the store of knowledge about how best to generate future growth, prosperity and jobs for the widest reach of the Australian community.

This is what prompted the Australian Business Foundation to commission this investigation, led by Professor Ian Marsh of the Australian Graduate School of Management, into the Australian wine industry's experience of collaboration and learning as the causes of competitive success.

The study provides an analysis of recent developments and successful performance of the Australian wine industry and with the backdrop of current economic literature, tests the proposition that it was the wine industry's efforts in strategic collaboration that were the cornerstone of its remarkable business growth and export achievements. The study also comments on whether the approach followed by the wine industry could be readily replicated by other firms and industries in Australia.

The investigation was undertaken and the report authored by Ian Marsh and Brendan Shaw. Ian Marsh is an Associate Professor at the Australian Graduate School of Management. His books include: *Beyond the Two Party System* (Cambridge University Press, Melbourne, 1995) and with Takashi Inoguchi and Jean Blondel, *Democracy, Governance and Economic Performance, East & South East Asia* (United Nations University Press, Tokyo, 1999). Brendan Shaw is a Doctoral candidate at Monash University. He was formally a Research Analyst with the Department of Industry, Science and Technology.

It is hoped that *Australia's Wine Industry: Collaboration and Learning as Causes of Competitive Success* will provide new understandings of contemporary economic literature and more importantly, will throw light on how such theory can be applied by firms in Australia as they seek to compete in an increasingly competitive and volatile business environment.

Narelle Kennedy

Chief Executive
Australian Business Foundation

Introduction

The Australian wine industry has performed remarkably in recent years. Australia produces only 2% of world wine. In the mid 1980s, Australia was a net importer of wine. Exports now total 32% of total production. Australia now holds 2.4% of the world wine market by volume and 3.5% by value. Australian wineries hold 11% of the U.K. market, 7% of the Japanese market and 4% of the German and US markets. Exports go to a total of 82 countries. Thirty-eight per cent of the 1431 winemakers in the Australian and New Zealand Wine Industry Directory (ANZWID) export.

Over this same period, sales have shifted from bulk and cask to semi-premium (\$7-10 per bottle) and premium (\$10-15) segments. For the third time, in January 1999, Penfold's Grange appeared on the front cover of the US *Wine Spectator*, arguably the most influential wine magazine in the world. In this issue, three Grange vintages were included in its 'dream dozen.'

How are these developments to be explained? The decline in the Australian exchange rate in the mid-1980s influenced demand. Australia's natural endowments or advantages might also be cited - as in the theory of comparative advantage. Tastes and incomes in consuming markets may have moved in favour of Australian styles - although the speed and ubiquity of the supply response would remain to be explained.

In an analysis of industry growth in the 1986-96 period, Wittwer and Anderson note the key role of the switch from non-premium to premium grades and the consequent increase in price and revenues (43% for wine and 116% for wine grapes).¹ This switch occurred in the early 1990s - seven years after the fall in exchange rates. They conclude that export demand accounted for half of the industry's premium output growth and domestic income growth a further 20%. The extensive adoption of mechanical harvesting and pruning is also cited as an influence.

But premium wines are highly differentiated products. How did the industry make the (rapid) switch from a commodity to what might be described as a knowledge-based product?

How did the industry in an apparently short period establish reputation and brands in remote markets?

How did exporting become so ubiquitous amongst producers? Why - and how - was mechanical harvesting and pruning invented; how was it commercialised; and how was its adoption accomplished in such a seemingly short period of time?

¹ Glyn Wittwer and Kym Anderson, Accounting for Growth in Australia's Grape and Wine Industries, 1986-2003, *Seminar paper 99-02*, Centre for International Economic Studies, University of Adelaide, March, 1999.

In sum, how has the industry changed its mind-set and processes from those of an agricultural producer to a high value-added, knowledge-intensive, globally competitive manufacturing and service industry?

Over the period of industry growth through reorientation to world markets, a high level of intra-industry collaboration has also developed. Its particular contribution to industry success is the focus of this study. The purpose of the following analysis is threefold: first, to analyse the scope and sources of collaboration; second, to evaluate its contribution to industry success; and third, to assess the implications for industry policy more generally.

The analysis is organised in five sections:

- *Frameworks*: The first section reviews alternative theoretical frameworks for evaluating the causes of industry success.
- *The Development of Collaboration*: The second section reviews changes in industry structure from the late 1980s, covering changes at both firm and associational levels and the development of collaborative planning at the industry level.
- *The Impact of Collaboration*: The third section reviews evidence of the contribution of collaboration to industry success.
- *Wine Industry Implications*: Fourth, on-going issues in sustaining integrated arrangements in the wine industry are identified.
- *Implications for Other Industries & Governments*: The final section assesses the broader implications of this experience for other industry sectors and for public policy towards industry more generally.

I. Frameworks

A threshold step involves establishing relevant theories. Theory provides the framework within which facts and causes can be identified. This section introduces two broad families of theory. One, the neo classical group, currently dominates public policy formation. The second group, which has only emerged in recent years, might be broadly described as institutionalist.

Neo-Classical Perspectives

The current predominant perspective in public policy emphasises the positive contribution of market forces. A market is constituted by an exchange, which is mediated by a price. According to neo-classical theory, interdependence between markets patterns resource allocation in value-adding production systems. Price-based exchange facilitates flexibility in resource allocation and induces innovation in products and processes. The theory implies that the removal of impediments to market exchange is the right path to achieve both economic growth and consumer well-being.

Expanding the role of market forces, and removing distortions or inhibitions to their operation, is seen to be the best foundation for industry growth and competitive success. The consequent stimulus to efficiency and innovation is seen to transcend any possible outcome based on even limited collaboration. The impersonal character of market operations facilitates adjustments. Indeed interventions that attempt to anticipate market decisions are seen to risk substantial opportunity costs and/or to encourage dysfunctional rent seeking.² However, these judgements presume necessary information is freely available and that its significance is sufficiently recognised. They presume that related and supporting markets (eg. capital markets, overseas markets) are appropriately undistorted. They also assume transaction costs (as distinct from production costs) are not a significant influence on firm decisions.

Meantime, comparative advantage theory, which underpins official thinking about trade policy, assumes natural endowments, not created advantages, are fundamental to levels of trade, and to the competitive success of individual firms in international markets. Since the basis for trade is relative (not absolute) advantages, all participants can benefit.³ This theory has been the basis for trade liberalisation, which has contributed significantly to the spread of economic prosperity. However comparative advantage theory is static. It assumes the advantages that any country has at a particular point in time are fixed. In Ricardo's classic example, Britain trades cloth for Portuguese wine. Both countries gain from the exchange.

² Matthias Kelm, *Evolutionary and New Institutional Economics: Some Implications for Industrial Policy*, ESRC Centre for Business Research, University of Cambridge, *Working Paper 46*, December 1996; also, *Economic Growth as an Evolutionary Process*, ESRC Centre for Business Research, University of Cambridge, *Working Paper No. 17*, September, 1995.

³ Paul Krugman, *Competitiveness: A Dangerous Obsession*, in *Pop Internationalism*, MIT Press, Cambridge, 1996.

But cloth making was then the high technology, high growth, high value added industry. If Portugal persisted in producing only wine, she would be permanently locked in to lower levels of national income. In a dynamic perspective, trade liberalisation may be problematic for a country that is trying to shift its business structure to new, higher-value activities.

The movement of neo-classical theory to the status of conventional wisdom in recent years has been buttressed by a general flowering of its sub-fields. A variety of new applications have emerged - for example, contestable markets theory, agency theory, public choice theory, transaction cost economics, and information economics. These theories are united by their grounding assumptions which involve methodological individualism and instrumental rationality. Methodological individualism holds that the ideas, motives and preferences of entrepreneurs and consumers are determined independently, or, in the jargon, exogenously. Instrumental rationality holds all participants base their decisions on the maximisation of these independently determined preferences. These simplifying premises have permitted high levels of methodological rigour. But recent theoretical developments challenge the validity of these assumptions. These are briefly summarised in the next section.

At a policy level, neo-classical and comparative advantage perspectives have driven a variety of changes in frameworks over the past decade. These changes include: exchange rate flexibility; financial liberalisation; trade liberalisation; reduction of protection; labour market deregulation; competition policy; and the termination or contraction of targeted industry incentive schemes. Neo-classical perspectives continue to dominate official and political thinking about industry policy.

Institutional Perspectives

Institutional theories have emerged in recent years as a supplement to neo-classical perspectives. Interest in institutions has burgeoned, spreading across a variety of disciplines, including economics, political science and sociology.⁴ Institutional theories start from the inter-subjective character of social, economic and political interaction and calculation.⁵ They thus abandon the neo-classical premises of methodological individualism and instrumental rationality.

Institutional analysis directs attention back from firms, towards the institutions or systems in which they are embedded. Markets are one important institutional setting - but they are not the only ensemble that is relevant to competitiveness. Political, financial, education and innovation systems may all contribute resources or capabilities that are more or less pertinent to the competitiveness of a particular sector.

⁴ R. Scott, *Institutions and Organisations*, Sage Publications, California, 1995; Peter Hall and Rosemary Taylor, Political Science and Three New Institutionalisms, *Political Studies*, XLIV, 1996, pp. 936-957; E. Immergut, The Theoretical Core of the New Institutionalism, *Politics and Society*, Vol. 26, No. 1, March, 1998, pp. 5-34.

⁵ J. G. Ruggie, What makes the World Hang Together? Neo-utilitarian and Social Constructivist Challenges, *International Organisation*, 52, 4, Autumn, 1998, pp. 855-885.

Further, the historically derived pattern of any of these systems may be more or less consistent with present competitive requirements. In general, this approach shifts attention from an exclusive focus on markets to the wider institutional ensemble in which particular firms and industries are embedded.

Institutional theory is especially associated with the work of Douglas North. His approach is pertinent to this study because of its focus on economic performance. North defines institutions as:

*'the humanly devised constraints imposed on human interaction. They consist of the formal rules, informal constraints (norms of behaviour, conventions and self-imposed codes of conduct), and their enforcement characteristics. In short, they consist of the structure that humans impose on their dealings with each other.'*⁶

Elsewhere, they are defined as 'regularities in repetitive interactions among individuals. They provide a framework within which people have some confidence as to how outcomes will be determined.'⁷ There are both formal and informal institutions. Formal institutions include laws, regulations, states and constitutions. Informal institutions include social norms, conventions, personal habits, organisational routines and the like.

The institutional framework is a fundamental determinant of a society's economic performance. Institutions organise economic activity by reducing uncertainty in interactions and by simplifying decision-making. North proposes the norm of 'adaptive efficiency' as the dynamic benchmark for institutional effectiveness. This is the pivotal concept in his theory of longer run economic growth and contrasts with other norms of efficiency (eg. allocative or productive efficiency). Adaptive efficiency is created by institutions. It embodies 'the willingness of a society to acquire knowledge and learning, to induce innovation, to undertake risk and creative activity of all sorts, as well as resolve problems and bottlenecks of the society through time.'⁸

Particular historic decisions can embed patterns of economic (or other) activity that may be dysfunctional from the perspective of present economic opportunities. The (mostly unconscious) projection of past determinations into current practices, attitudes and decisions is termed path dependence.

⁶ Douglas North, Towards a Theory of Institutional Change, *Quarterly Review of Economics and Business*, Vol. 31, No. 4, Winter, 1991, p. 4.

⁷ D. North, The New Institutional Economics, *Journal of Institutional and Theoretical Economics*, 142, 1986, p. 231.

⁸ D. North, *Institutions, Institutional Change and Economic Performance*, Cambridge University Press, 1992, p. 80.

Once a development path is set on a particular course, the network externalities, the learning processes of organisations, and the historically derived subjective modelling of the issue reinforces the course.’⁹ Path dependence makes economic adaptation processes much more problematic than is suggested by neo-classical theory.

In general, in an institutional perspective, prices have specific limitations as transmitters of information, transaction costs are pervasive and of equal importance to transformation costs, and market forces are deficient mediators of innovation. These findings attack the foundations of neo-classical theories and thereby undermine conventional wisdom about the role of the State in the economy. They qualify substantially the exclusive focus on market forces that is the hallmark of neo-classical analysis.

North’s highly abstract, but encompassing, analysis invites attention to arrangements that might enhance collaboration, supplement market based coordination and reduce transaction costs. This provides a general theoretical framework within which particular patterns of collaborative activity - such as those to be considered later in the wine industry - can be evaluated.

Economic Learning and 'Economic Rationality'

One fundamental facet of institutional theory involves the genesis of the ‘ideas, choice sets and motives’ that animate economic actors - such as business managers and consumers. These are held to be seeded and propagated by institutions. Preferences, motives and information are not assumed to germinate independently or exogenously – rather they are incubated by institutions.

This introduces the concept of economic learning as an alternative to the neo-classical concept of economic rationality. Economic rationality assumes that relevant information is available and that preferences are determined autonomously. It assumes all agents will follow a common choice process. It assumes they will maximise the satisfaction of their (independently derived) preferences. Institutional theory relaxes each of these assumptions. Preferences, choice metrics and information are dependent, not autonomous variables - and thus are contingent outcomes, determined by the institutional environments within which firms and industries are embedded. Hence, in an institutional perspective, economic learning is a contingent concept and a problematic process.

Drawing on recent cognitive literature, North and Dentsau suggest choice is framed by mental models that are widely shared, that are established collectively, and that are inherently partial (‘ideologies’).¹⁰ As a medium for decision making, shared mental models have inherent limitations. Further, feedback may not be corrective since this process is itself governed by the same (contingent) shared mental model.

⁹ D. North, *Institutions, Institutional Change and Economic Performance*, p. 99.

¹⁰ D. North and A. Dentzau, Shared Mental Models, Ideologies and Institutions, *Kyklos*, Vol. 47, 1994, pp.3-31.

Institutional theory is thus much less sanguine about the likely consistency between current economic decisions and longer term, adaptive outcomes. This contrasts with the optimism of neo classical theory.

Because widely shared mental models are established collectively, by and through institutions, the latter's effectiveness in generating economic learning is critical to the competitiveness of organisations. This analysis suggests a wholly novel perspective from which the effectiveness of institutions might be judged - namely their impact on, and contribution to, economic learning.

The idea of learning has come to play an increasing role in management and strategy literature in recent years.¹¹ Some literatures explore the structures through which this outcome can be best advanced.¹² Others consider learning processes. For example, scenario analysis has gained currency as one methodology for anticipating discontinuities in complex, interdependent systems.¹³ We will see later, the wine industry itself placed particular emphasis on collaborative planning through a visioning process. Such approaches invite attention to ways ideas become influential for practice. In this context, Schon and Rein's work on what they term 'framing' is pertinent.¹⁴

Framing

The concept of 'framing' was developed in the context of intractable policy problems. It draws attention to the role of narrative in 'defining' reality. Framing involves the development of narratives of explanation. In Schon and Rein's words: (Narratives)

'carry out the essential problem-setting functions. They select for attention a few salient features out of what would otherwise be an overwhelmingly complex reality. They give these elements a coherent organisation, and they

¹¹ Ikujiro Nonaka and Hirotaka Takeuchi, *The Knowledge Creating Company*, Harvard Business School Press, Cambridge, 1999; David A. Garvin, Building a Learning Organisation, *Harvard Business Review*, July, 1993, pp. 78-91; Peter Senge, The Leaders New Work: Building Learning Organisations, *Sloan Management Review*, Fall, 1990, pp 7-23; John Kay, *Foundations of Corporate Success*, Oxford University Press, Oxford, 1995; Arie de Geus, *The Living Company*, Nicholas Brearley Publishing, London, 1998, also Planning as Learning, *Harvard Business Review*, March, 1988, pp. 70-74.

¹² I review some aspects of this process at the sectoral and national level in: The State and the Economy: Opinion Formation and Collaboration as Facets of Economic Management, *Political Studies*, Vol 47, No. 4, November, 1999, pp.

¹³ Kees van der Heijden, *Scenarios: The Art of Strategic Conversation*, John Wiley, Chichester, 1996; Gary Hamel and C. K. Prahalad, Seeing the Future First, *Fortune*, September 5th, 1994, pp. 73-76; Paul J. Schoemaker, Scenario Planning: A Tool for Strategic Thinking, *Sloan Management Review*, Winter, 1995, pp. 25-40.

¹⁴ D. Schon and M. Rein, *Frame Reflection, Towards the Resolution of Intractable Policy Conflicts*, Basic Books, New York, 1994; J. Richardson and S. Mezey, Framing and Reframing Public Policy in the EU: Ideas, Interest and Institutions in Sex Equality and Environmental Politics, Paper for presentation at the *Workshop on the Role of Ideas in Policy-making*, European Consortium for Political research, Warwick University, March, 1998.

describe what is wrong with the present situation in such a way as to set the direction for its future transformation.

Through the process of naming and framing the stories make the "normative leap" from data to recommendations, from fact to values, from "is" to "ought." It is typical of such diagnostic-prescriptive stories, that they execute the normative leap in such a way as to make it seem graceful, compelling, even obvious.¹⁵

Levels of Learning

Through Strategy 2025, the wine industry sought to shift producer orientations from domestic to global markets. This form of learning points to a distinction between the various 'levels' at which economic learning might be aimed. Two basic levels can be identified:¹⁶

- *First order learning* might involve adapting to constraints, imitating the successful or undertaking a bounded search process. This involves adaptation within given strategic parameters. It involves non-routine, operational decision making.
- *Second order learning*, by contrast, involves more profound reconceptualisation eg. recognising a new systemic pattern. Second order learning involves picturing a world that might be: it is the projection of empirically grounded aspirations. A visioning process is one means of stimulating second order learning. This is designed to lift ambitions (ie. motives and preferences) to a new level and to facilitate collaboration and the recognition of shared interests - in other words, to enlist new commitment and to mobilise new energies. It is not a linear projection of developments.

What Makes Ideas Powerful?

Many ideas, later vindicated by events, languish unacknowledged. What distinguishes influential from non-influential ideas? There are both empirical and theoretical analyses of pertinent conditions and processes.¹⁷ Garret and Weingast propose three causal pathways that link ideas to perceived needs for explanations:¹⁸

1. Ideas can serve as *road maps*, a role that 'derives from the need of individuals to determine their own preferences or to understand the causal relationship between their goals and alternative strategies by which to reach these goals.'

¹⁵ Schon and Rein, p. 26.

¹⁶ Peter Senge, *The Leaders New Work: Building Learning Organisations*, op. cit.

¹⁷ Eg. Robert Reich, *The Power of Public Ideas*, Harvard University Press, Cambridge, 1992; Daniel Yankelovitch, *Coming to Public Judgement*, Syracuse University Press, 1988; John Kingdom, *Ideas, Institutions and Public Policies*, ; James Q. Wilson, 'Policy Intellectuals and Public Policy', *Public Interest*, vol. 64, Summer, 1981, pp. 31-47.; James March, *The Pursuit of Organisational Intelligence*, Blackwells, London, 1999.

¹⁸ quoted in Ruggie, op. cit., p.866.

2. Ideas can serve as *focal points* 'in strategic situations of multiple equilibria, that is several equally "efficient" outcomes.' Here ideas can help individuals select one from among the set of viable outcomes.
3. Ideas can become causes of behaviour through *institutionalisation*, 'whereby ideas, once they have become encrusted in institutions, continue to specify policy in the absence of innovation'.

Goldstein and Keohane offer another perspective.¹⁹ They suggest influential ideas fall into one of three categories: world views; principled beliefs; and causal beliefs:

- World views are 'entwined with people's conceptions of their identities, evoking deep emotions and loyalties.'
- Principled beliefs 'specify criteria for distinguishing right from wrong and just from unjust.'
- Causal beliefs are 'beliefs about cause-effect relations derived from the shared consensus of recognised authorities.'

An official report, following an enquiry chaired by Professor Helen Hughes, identified Australia's need for 'a new export culture,' but declared its ignorance about how such an orientation might be seeded, much less embedded.²⁰ Recent scholarly work on the role of institutions, the categorisation of ideas, and on processes of economic learning begin to fill this gap. We will see in the next section how economic learning was deliberately seeded and propagated in the wine industry.

Innovation

Knowledge-based innovation theories provide another contrast with neo-classical approaches. Proponents argue neo-classical theories are a poor guide to its requirements. In 1947, Schumpeter identified what has since been termed the paradox of competition:

*A system...that at every point of time fully utilises its possibilities to the best advantage may yet in the long run be inferior to a system that does so at no given point of time, because the latter's failure to do so may be a condition for the level or speed of long run performance.*²¹

¹⁹ Ideas, Interests and Institutions, in J. Goldstein and R. Keohane, (eds), *Ideas and Foreign Policy*, Cornell University Press, Ithaca, 1993, pp 203-205.

²⁰ Helen Hughes (chair), *Australian Exports: Performance, Obstacles, and Issues of Assistance*, Australian Government Publishing Service, Canberra, 1989.

²¹ J. Michie and R. Prendergast, Competition and Competitive Advantage, ESRC Centre for Business Research, University of Cambridge, *Working Paper 41*, September, 1996, p. 8.

Whereas, from the point of view of static efficiency, 'restrictive practices may seem to serve only to enrich the sellers at the expense of the buyers, in the context of long run expansion, these same practices may have important stabilising and incentive functions.' The contribution of imperfect markets to long run innovation and growth has been one stimulus to the development of evolutionary or knowledge based theories of innovation, in contrast to neo-classical information-based theories.

A key distinction between these approaches concerns the nature and role of knowledge. Neo-classical or information based theories recognise two distinct forms of knowledge: basic research and information. The former is a public good, and the latter a tradeable good. It is distinguished by being codified, quantifiable and transmissible.

Knowledge based theories, on the other hand, treat this key variable as a more complex and less sharply differentiated phenomenon. In this perspective, knowledge creation is distinguished by one or more of the following features: tacitness, heterogeneity and specificity. According to Blankenburg, these features might be defined as follows:

*'Tacit knowledge resides either in the heads of people engaged in particular transformation processes or in the organisational routines and institutional rules underlying such processes, and cannot be copied or acquired through any explicit transfer of information.....Knowledge is heterogeneous in that a multiplicity of skills, experiences and information from a variety of primary sources are combined in the search for solutions to specific problems. Knowledge accumulation therefore requires a high level of organisational diversity to accommodate the multiplicity of combinations of different elements of knowledge.....The increasing technological division of labour, resulting in a high degree of specificity of knowledge, reinforces both the importance of tacit knowledge as well as the heterogeneity of knowledge in general.'*²²

This implies innovation is a more interdependent, reciprocal and differentiated process than is recognised in information economics. Table 1.1 contrasts neo-classical and knowledge based approaches to the conceptualisation of innovation. The contrast is in twelve dimensions.

In this evolutionary perspective, processes that generate variation and selection, and that sustain transmission and dissemination all become critical. In evolutionary theory, firms are agencies for transforming technological knowledge into knowledge about products. Blankenburg defines this process as 'drawing on the present state of technological knowledge and projecting it in a direction that brings about a coupling with some substantial

²² Stephanie Blankenburg, University-Industry Relations, Innovation and Power: A Theoretical Framework for the Study of Technology Transfer from the Science Base, ESRC Centre for Business Research, University of Cambridge, *Working Paper 102*, September, 1998, p. 19; also J. S. Metcalfe, Technology Systems and Technology Policy in an Evolutionary Framework, *Cambridge Journal of Economics*, 19, 1995, pp. 25-46; R. Nelson, The Sources of Industrial Leadership: A Perspective on Industrial Policy, *De Economist*, Vol. 147, No. 1, 1999, pp. 1-18.

category of consumer needs and desires'. This directs attention to systems or structures of collaboration, and to tests of their effectiveness: for example, in reconciling variation and selection, prime mover advantage without premature lock-in etc. Imagining innovation as a flow involving interactions between multiple agents also directs attention to the key role of what are termed transaction costs.

Table 1.1 Information Economics and Knowledge Based Approaches to the Conceptualisation of Innovation

Approach Conceptualisation of:	Neoclassical / Informational	Knowledge-Theoretic / Evolutionary
Innovation	Linear sequential stage-model, one-time transfer from science downstream to technology / engineering and the market	Ongoing search activity, involving nonlinearities, cumulateness, path-dependency and feedback loops from "downstream" sources, therefore two-directional
Main Source of Innovation	R&D, science	Capabilities and competencies built up from R&D and science as well as from other economic, technological and institutional sources, such as education, training, production engineering, design, quality control, accident
Technology	Blueprint, applied science	Embodied knowledge of various types: tacit, locally bounded, formal, informal, interdisciplinary, scientific, engineering, organised in paradigms and evolving along trajectories
Knowledge	Codified, homogenous, freely accessible (public good), often equated with information	Socially embedded, context-specific, non-homogenous, both codified and non-codified
Productive Unit	Individual profit-maximising firm	(Learning) Networks / National System of Innovation / productive systems
Organisational Principle	(Constrained) Optimisation	Adaptation through self-organised processes
Time	Reversible	Irreversible
Uncertainty	Probabilistic (risk), arising due to absence of complete set of markets	Non-probabilistic ("true, genuine")
Process of Accumulation of Technological Capabilities	Comparative-static; movement towards innovative possibility frontier through increased innovative effort translated through regular input-output relations of "knowledge" production function	Evolutionary (learning) process, involving creation of variety (from both "blind" and purposeful action/sources), selection (of technologies through markets and coordinated choice), and feedback loop from selected outcomes to re-generation of variety
Change / Diffusion	Exogenous invention plus endogenous incremental improvements, costless imitation	Endogenous relation between incremental changes and radical ruptures, diffusion non-separable from innovation and not costless

Competition	Price / oligopolistic	Technological, product based, conceptualised as process of discovery based on differential behaviour
Policy Objectives	"Picking the winner" / getting the incentive structure right for efficient use of productive resources	Adaptive government support for enhancement of national and regional competence base(s), creation of new resources

Source: Blankenburg, op.cit. pp 33

The policy implications of these divergent accounts of the dynamics of innovation are very different. Neo-classical theories focus on innovation as an accomplished discovery, and thus on appropriability and tradeability. This involves attention to property rights, patents and individual incentives. By contrast, knowledge based theories image technical development as a flow, organised around a reciprocal process of interaction, involving priority-setting, design, feedback and redesign. Markets are not the only medium in which such exchanges occur. Rather innovation develops through a variety of channels, prior to, or supplementary to, market exchange - for example, academic and technical journals, training, personnel transfer, informal communication networks.

Transaction Costs

The general significance of transaction costs for competitiveness was noted earlier. The contemporary emergence of networking and collaboration can be conceived as an organisational arrangement for managing such costs.²³

Transaction costs are defined as 'the costs of running the economic system'.²⁴ These include:

- Search costs in finding new trading partners;
- Costs of negotiating and drafting agreements or other less formal connections;
- Costs associated with flows between firms and with non-firm organisations (eg. independent research centres);
- Costs associated with servicing on-going relationships;
- Costs of adjustment associated with changing business or technological conditions;
- Costs of monitoring existing contracts and of enforcing contracts when parties renege.

These costs can be contrasted with transformation or production costs - the primary focus of the theory of the firm and of micro economics more generally.

There is no theory of transactional efficiency to match the notion of allocative efficiency in neo-classical theory. Milgrom and Roberts propose a contingent norm: 'As suggested by the efficiency principle, transactions tend to occur in the market when doing so is most efficient, and they are brought within firms or some other formal organisation when doing so minimises the costs of carrying them out.'²⁵

²³ eg Peter Dicken, *Global Shift, The Internationalisation of Economic Activity*, Paul Chapman Publishing, London, 2nd Edition, pp. 212-221.

²⁴ Arrow, quoted by M. Sako, 1992, p.33.

²⁵ Paul Milgrom and John Roberts, *Economic Organisation and Management*, Prentice Hall, Englewood Cliffs, NJ, 1992, p. 29.

Coordination costs are a specific sub-set of transaction costs and express the costs of bringing relevant parties together. The formation and maintenance of industry associations, or other institutions that express the aspiration to collaborate amongst relevant parties, might be classified as coordination costs.

At least five features of transaction costs determine their significance and complexity:

- The specificity of the investment required to conduct the transaction – the larger the investment the more likely the transaction will be internalised, managed collaboratively, or will constitute a barrier to action;
- The frequency and duration of the transaction – the more frequent or the longer the duration, the more likely on-going organisations will be established;
- Uncertainty and complexity of the transaction - for example in relation to market data and technological assessments;
- The difficulty of measuring performance;
- The connectedness of transactions to other transactions, involving other participants.²⁶

When not internalised within organisations or networks, transaction costs are determined by institutions.

Transaction costs are especially salient in current competitive environments. Business growth is now substantially driven by innovation and participation in the global economy. Both these activities are suffused with transaction costs.²⁷ For example, participation in global markets magnifies the complexities and risks for any single firm in strategy, marketing, and distribution. These complexities and risks can be addressed through internalisation and development of scale and/or through networks, alliances and other forms of collaboration.

²⁶ Paul Milgrom and John Roberts, *Economic Organisation and Management*, Prentice Hall, Englewood Cliffs, NJ, 1992, p. 30.

²⁷ John Dunning, Governments and the Macro-Organisation of Economic Activity: A Historical and Spatial Perspective, in J. H. Dunning (ed), *Governments, Globalisation and International Business*, Oxford University press, Oxford, 1997, pp. 31-73; also *Alliance Capitalism and Global Business*, Routledge, London, 1997.

Clusters

Clustering as a foundation of competitiveness has a considerable theoretical provenance.²⁸ Contemporary attention to this structural pattern has developed in response to the observed sustained superior performance of particular countries or regions - for example, northern Italian regions in leather shoes, fashion and electrical machinery.²⁹ In Australia's case, Marceau, and Marceau, Sicklen and Manley, have used aggregate data to estimate the presence of such linkages.³⁰ Michael Porter provides perhaps the most comprehensive (inductive) account of their character and competitive contribution.³¹

According to Porter: 'A cluster is a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities.' He nominates as potential elements: end-product or service companies; suppliers of specialised inputs, components, machinery and services; financial institutions; firms in related industries; firms in downstream industries; producers of complementary products; specialised infrastructure providers; government and other institutions providing specialised training, education, information and technical support; and finally, trade associations.³²

Germane to this study, Porter illustrates the latter's architecture through an image of the California wine cluster (Fig.1.1). He comments: 'The California wine cluster includes an extensive complement of supporting industries to both winemaking and grape growing. On the growing side, there are strong connections to the larger California agriculture cluster. On the winemaking side, the cluster enjoys strong links to both the California restaurant and food preparation industries and the tourism cluster in Napa and other wine-producing regions of the state....(Other institutions) involved with wine include the world-renowned viticulture and oenology program at the University of California, Davis and special committees of the California Senate and Assembly.'

²⁸ Michael E. Porter, Historical and Intellectual Antecedents of Cluster Theory, in *On Competition*, Harvard Business Review Press, Cambridge, Mass., 1998, p. 206-208; and Clusters and the New Economics of Competition, *Harvard Business Review*, December, 1998, pp. 77-90; also Theo A. Roelandt, Cluster Analysis and the System of Innovation Approach, paper presented at the OECD Conference on *Innovation Systems, Growth Engines of the 21st Century*, Sydney, 19-20 November, 1998; L. Nachum and D. Keeble, Neo-Marshallian Nodes, Global Networks and Firm Competitiveness: The Media Cluster of Central London, Working Paper 138, September, 1999, *ESRC Centre for Business Research*, University of Cambridge.

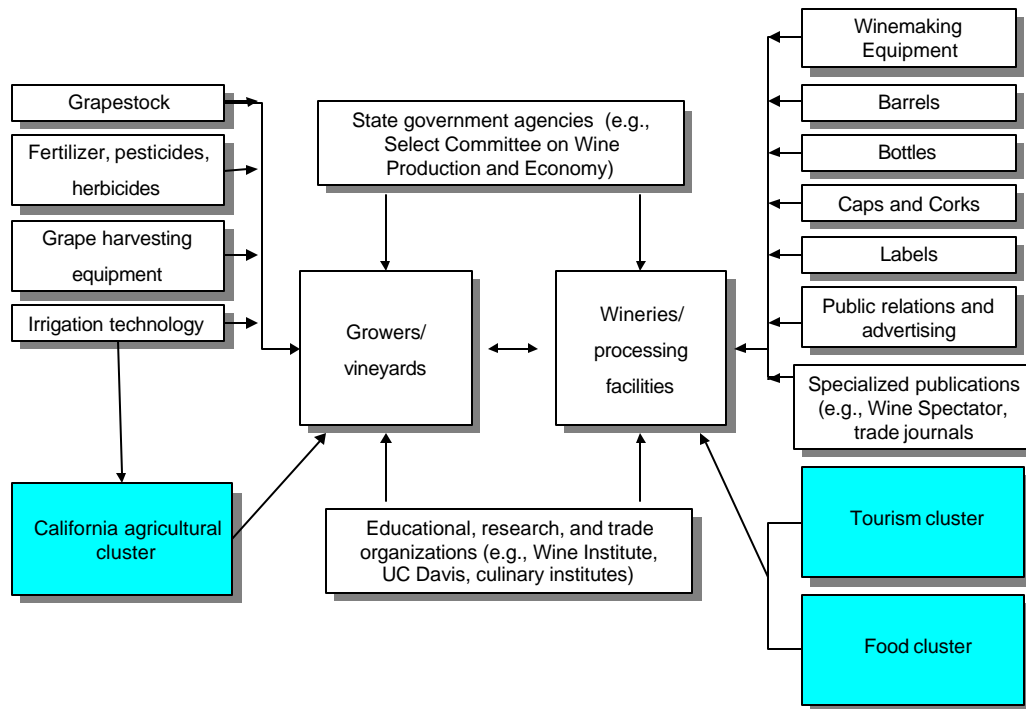
²⁹ Michael Porter, *The Competitive Advantage of Nations*, Macmillan, London, 1990.

³⁰ Jane Marceau, Derek Sicklen and Karen Manley, *The High Road or the Low Road, Alternatives for Australia's Future*, Australian Business Foundation, Sydney, 1997; also Jane Marceau, The Disappearing Trick: Clusters in the Australian Economy, *Paper prepared for the OECD conference on clusters*, Amsterdam, October, 1997.

³¹ Michael E. Porter, Clusters and Competition: New Agendas for Companies, Governments and Institutions, in *On Competition*, *ibid.* pp. 197-289.

³² There is also an extensive literature on the role of industry associations in Japan, for example, M. Sako, Suppliers' Associations in the Japanese Automobile Industry, *Cambridge Journal of Economics*, 1996, Vol. 20, pp. 651-671; T. Horiuchi, Structure and Information Sharing Function of the Japanese Optoelectronics Industry, *Rivista Internazionale di Scienze Economiche e Commerciali*, Vol. 37, No. 12, 1990, pp. 1083-1103.

Figure 1.1 The Californian Wine Cluster



Sources: Based on research by Harvard MBA students R. Alexander, R. Arney, N. Black, E. Frost, and A. Shivananda. Illustration from M. Porter, *On Competition*, p.201

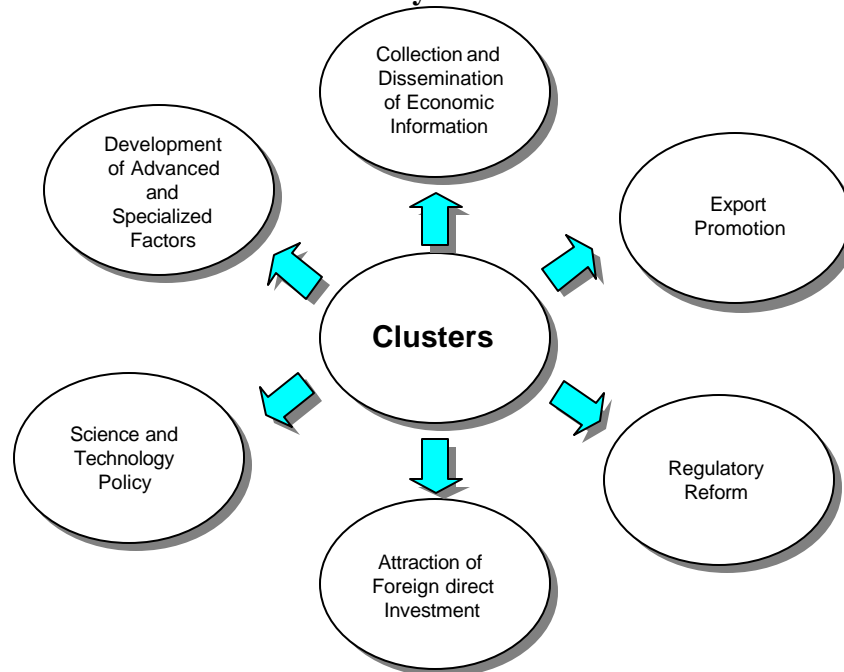
The boundaries of clusters are defined contingently. They rarely follow the traditional categories used for classifying industrial and economic statistics. They are driven rather by an understanding of the most important linkages from the perspective of competitive success. They can link traditional and newer sectors and can evolve in step with markets or particular segments of markets and/or technology. They can vary in size, breadth and state of development and can be evaluated at varying levels of aggregation.

In discussing the advantage of this concept over a focus on sectors or individual firms, Porter comments:

‘Clusters align better with the nature of competition and the sources of competitive advantage. Clusters, broader than industries, capture important linkages, complementarities, and spillovers of technology, skills, information, marketing and customer needs that cut across firms and industries....Such connections are fundamental to competition, to productivity, and especially, to the direction and pace of new business formation and innovation.....Viewing a group of companies and institutions as a cluster highlights opportunities for coordination and mutual improvement in areas of common concern without threatening or distorting competition or limiting the intensity of rivalry.’ (p.205)

Clusters offer an especially powerful medium for linking specific firms to wider economic policy objectives (Fig. 1.2).

Figure 1.2 Clusters and Economic Policy



Source: M. Porter, *On Competition*, p. 254

'Alliance Capitalism'

These varied theoretical developments - institutional theory, learning, the new role of transaction costs, attention to innovation systems, and clustering - are symptomatic of the changing contexts confronting firms and of the new requirements for competitive success. Working at the intersection of economics and business strategy, John Dunning suggests these contexts and requirements can be summarised in a new competitive paradigm which he terms 'alliance or flexible capitalism.'³³ He contrasts this with two earlier economic phases, entitled respectively 'entrepreneurial capitalism' and 'hierarchical capitalism' (Table 1.2). The contrast is based on changes in seven core dimensions of the economic system: markets, specialisation, key resources, asset mobility, organisation, production system and government role.

Four features of alliance or flexible capitalism might be especially noted.

- First, the emergence of alliance capitalism is partly a response to the redefinition of markets as regional or global in character. This involves operations at a distance with augmented complexity and risk in all aspects of operations but especially control, distribution, and marketing.
- Second, innovation in products or processes is increasingly decisive in sustained superior performance. This raises by a quantum step the significance of transaction

³³ John Dunning, pp. 31-73, op, cit.

costs in firm decision-making and affects traditional as well as so-called high technology industries.

Table 1.2 Three Patterns of Capitalism

	Phase 1. ENTREPRENEURIAL CAPITALISM (1770-1875)	Phase 2. HIERARCHICAL CAPITALISM (1875-1980)	Phase 3. ALLIANCE OR FLEXIBLE CAPITALISM (1980-?)
Markets	Small and fragmentary, local and national: mainly competitive	National or international: increasingly oligopolistic	Regional and global: dynamic and more competitive
Specialisation	Simple and modest, based mainly on distribution of natural assets	Becoming more complex: both national and international	Extensive and interdependent: the paradox of an increasing global division of labour based on location of created assets, together with sub-national specialised clusters of economic activity
Key Resources	Natural assets, e.g., fruits of the land and relatively unskilled labour	Physical and some knowledge capital	Intangible assets, e.g. human competence and knowledge, information, organisational and learning capability
Mobility of Assets	Little except for finance capital, and some emigration	Gradually increasing via MNE operations	Substantial mobility of <i>firm specific</i> created assets. But less mobility of some <i>location specific</i> created assets
Organisation	Factory, small firms	Large integrated corporate hierarchies	More inter-firm alliances, single firm hierarchies, corporate networks
Production System	D form, batch	M form, mass or scale	Innovation driven: flexible
Government Role	Limited involvement: active	Growing intervention: growth	More systemic and market enabling

Source: John Dunning, Governments and the Macro-Organisation of Economic Activities, pp 33

- Third, as a consequence of the enhanced mobility of firm specific assets, relatively immobile location specific assets have attained a new importance. These include such ‘constructed’ factors as: skills, the extra competitive leverage provided by access to complementary and supporting firms, the availability of sophisticated business services,

political stability, a transparent legal regime, and a government alive to its systemic responsibilities.

- Fourth, in the context of all the foregoing, networks, alliances and collaboration have attained a new prominence. There is clear evidence of the more extensive reliance on inter- firm networks and other forms of linkage and collaboration.³⁴

In relation to innovation, as already noted, the potential disjunction between social costs and benefits, cluster costs and benefits, and firm level costs, has been widely recognised. Institutions determine the incentive effects. They determine whether ‘the social externalities of markets for dynamic goods are fully realised, and whether the social assets necessary for the efficient upgrading and exploitation of the core competencies of firms and industries are adequately provided.’³⁵

Similarly, economic globalisation enhances the significance of spatially related coordination and transaction costs. These increase as markets become more uncertain and volatile, more specialised, complex and interdependent, or characterised by externalities, information asymmetries and opportunism.

Further, according to Dunning, the withdrawal of the State from many operational roles in the 1980s has been matched by the need to enhance its effectiveness in systemic roles. This is because of the new salience of transaction costs to business competitiveness. Transaction costs are caused by public policy structures and frameworks. Their new salience introduces a new dimension to the management of public policy systems (eg. the tax, education or research systems).

This provides an overarching framework for evaluating the new challenges faced not just by the wine industry - but by all industries whose competitive success involves participation in global markets and/or continuous innovation. It also provides a practical justification for attention to institutional theory and its various progeny. By contrast, neo-classical theory is increasingly less applicable to the actual competitive circumstances confronting firms in a globalised economy.

Evaluating the Causes of Wine Industry Performance

In evaluating the performance of the wine industry, two broad families of theory are thus pertinent. First, neo-classical approaches invite a focus on market conditions and market forces. At a normative level, this theory implies competitiveness is best enhanced through the operation of market forces: the less fettered or distorted their operation, the better will allocative efficiency be realised.

³⁴ For example, M. Sako, *Prices, Quality and Trust, Inter Firm Relations in Britain and Japan*, Cambridge University Press, 1992.

³⁵ Dunning, 1997, p.124-129.

However, the wine industry has succeeded in remote global markets, has adjusted rapidly in supply and production capacity to changed conditions, has raised its profile in consumer and financial markets and has, at least in its own self-understanding, based its success on projection of an image of quality, which is grounded in a superior willingness to innovate. In the process of accomplishing these outcomes, extensive collaborative arrangements have been established.

This suggests the merit of considering industry experience through the lens of the second broad family of theories - those concerned with innovation, transaction costs, 'learning' and clustering. Their common ground lies in an emphasis on market-enhancing collaboration as a complement to robust competition in product markets. In these perspectives, market conditions are the ultimate determinants of action and market outcomes the ultimate arbiters of performance. But within this framework, collaboration and competition, mixed according to relevant contingencies, constitute a performance-enhancing strategy.

In the case of the wine industry, we will want to see if more ambitious ideas, choice sets and motives have been seeded amongst industry participants, and if transaction costs, associated with entry to overseas markets and with innovation, have been ameliorated. Finally, we will want to establish if these explanations for industry success are more plausible than competing accounts. First however, the evolution of the wine industry structure and the development of collaboration are reviewed.

II. The Development of Collaboration

The wine industry has experienced substantial structural change in the past ten years. This has affected both the pattern of firms and the pattern of industry associations. These developments were a prelude to the development of collaboration. The present pattern of firms originated in the mid 1980s when international investors exited the Australian industry.

Extensive structural change has also occurred at the Association level. The development of collaboration has been a signal achievement of the past ten years.³⁶ In the mid-1980s the industry was divided and fragmented. Large producers saw their interests as distinct from those of small producers, growers saw their interests to be distinct from producers, and a plethora of state and national associations enjoyed separate existence and advanced different and/or uncoordinated claims. By 1992, all but one of the nine national bodies that now define and manage shared interests in research, marketing, exporting, and government and institutional liaison, had either been newly established or had adopted new roles.

Industry associations provided the context within which collaboration germinated. Collaboration extended progressively from exporting to research and development, culminating in 1996, in Strategy 2025. This was the critical step, introducing a vision of the industry's potential. Through this process, the mutually antagonistic relationships evident in the mid-1980s gave way to a progressively expanding conception of synergies and shared interests. Developments in firm and associational structure, and in collaboration and learning are described in turn.³⁷

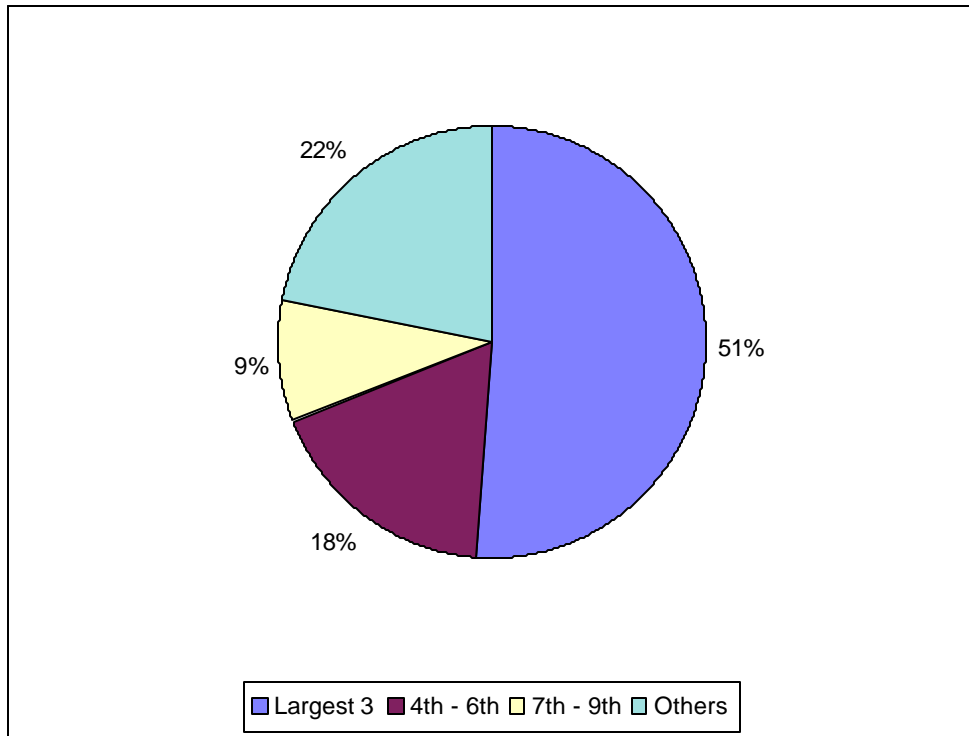
Structure and Ownership Patterns

The pattern of ownership and participation in the Australian wine industry has undergone substantial change since the mid-1980s. Production is now concentrated in three major firms - Southcorp, BRL-Hardy and Orlando-Wyndham Group - all exceeded 100,000 tons production in 1997. Together, these three firms accounted for 51% of total production (Figure 2.1). The next biggest firm, Mildara-Blass, had total production of 52,000 tons. The top 9 companies accounted for 78% of total production. There are over 1000 wine producers in Australia and an additional 4000 winegrape growers. Concentration in the Australian industry is reflected in an even greater extent in export shares with the top three companies accounting for 70% of total exports (Figure 2.2).

³⁶ The following section draws extensively on the invaluable history of the industry by James Halliday, *A History of the Australian Wine industry, 1949-1994*, Australian Wine and Brandy Corporation/Winetitles, Adelaide, 1994.

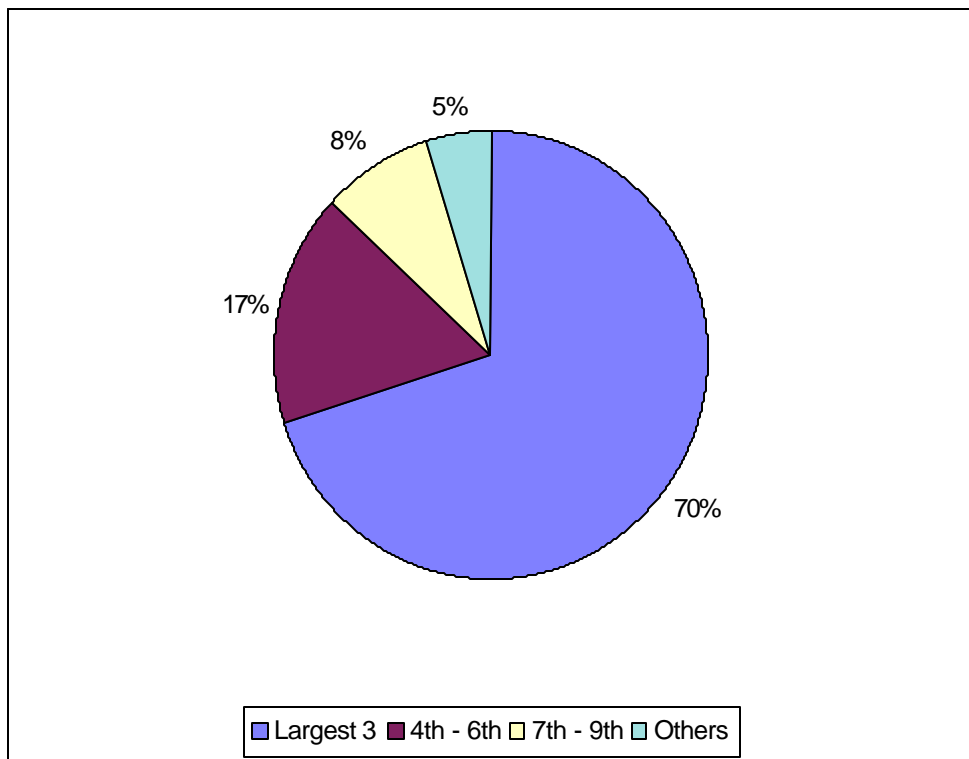
³⁷ All statistical data for this paper is current at 31st July, 1999 and all value data is in current prices – that is not adjusted for inflation unless otherwise indicated.

Figure 2.1 Concentration in Australian Wine Production 1996 (by company rank, by value)



Source: Derived from Osmond & Anderson (1998), p. 83.

Figure 2.2 Concentration in Australian Wine Exports, 1996 (by company rank, by value)



Source: Derived from Osmond & Anderson (1998), p. 83.

The top twenty Australian firms are listed in Table 2.1. The major firms are not large by international standards. Measured by wine sales, the top three Australian firms rank 13th, 16th and 18th respectively.³⁸

Table 2.1 Australia's 20 Largest Wine Producers by Tonnes Processed – 1997.

Company	Tonnes
Southcorp Wines Pty Ltd (group total)	165,000
BRL Hardy Ltd (group total)	142,000
Orlando-Wyndham Group Pty Ltd	104,000
Mildara-Blass Ltd (group total)	52,000
McWilliams Wines Pty Ltd (group total)	44,000
De Bortoli Wines Pty Ltd (group total)	42,000
Australian Vintage Ltd*	31,000
Miranda Wines Pty Ltd (group total)	26,000
Riverina Wines Pty Ltd*	23,000
Yalumba (S. Smith & Son Pty Ltd.)*	16,500
Kingston Estate Wines Pty Ltd*	16,200
The Alambie Wine Co. (Aust. Premium Wines)*	15,500
Rosemount Estates Pty Ltd	15,500
Angoves Wines Pty Ltd	15,000
Brown Bros. Milawa Pty Ltd	14,000
Normans Wines Ltd*	13,500
Peter Lehmann Wines Ltd*	12,400
Wingara Wine Group Pty Ltd*	12,000
Rosetto Wines (Griffith) Pty Ltd*	11,500
Cranswick Smith & Son Pty Ltd	11,000

Source: "Australian Wine Online" <http://www.winetitles.com.au/overview/index.html>, accessed 4/2/99

Note: Total grape tonnage processed in 1997 for company own branded and bottled products, incl. distillation, and inter-winery bulk grape juice/wine sales as indicated by asterisk

Note: Figures are based on group crush and include subsidiary companies.

The development of the major groups is depicted in Table 2.2. These groups were formed or consolidated in the late 1980s. For example, Southcorp grew out of South Australian Brewing (SAB), which had initially acquired the Seppelts vineyard in the late 1980s. SABs initial ambition to extend into wine in the late 1980s, was thwarted by the conglomerate Adsteam, which took over Lindemans and Penfolds in 1990. When the Adsteam empire imploded later that year, its wine interests were acquired by SAB. This was followed by the change of name. In 1991 Southcorp deliberately focussed its expansion on global markets and began the creation of an international selling, marketing and distribution network. Offices were established in Richmond (U.K.), Monterey (California) and Singapore. Southcorp joined other makers to establish brand identification through participation in international competitions and in 1995 *Wine Spectator* named the 1990 Grange Vintage 'Wine of the Year.'³⁹

³⁸ Rabobank, *The World Wine Business*, May, 1999, p. 11.

³⁹ David Combe, *Grapes of Success, Australian to International – the Southcorp Story*, *Monash – Mt. Eliza Review*, November, 1998.

Table 2.2 Rationalisation in the Wine Industry

	Southcorp	BRL Hardy	Orlando Wyndham	Mildara Blass
1994				Yalamba's GalwayPipe/ Fortified Wines
1993				51% Yarra Ridge
1992		Thomas Hardy Berri Renmano		
1991				Wolf Blass
1990	Lindemans, Leo Buring, Rouge Homme, Matthew Lang, Seppelt, Queen Adelaide, Hungerford Hill	Wyndham Estate		
1988		Clarevale Co- operative	Montrose	
1987	Tollana, Loxton	Stanley Leasingham	Saxonville	
1986				Krondorf
1985	Tulloch, Seaview Wynns, Kilawarra		Balgownie	
1984			Craigmoor	Yellowglen
1982	Kaiser Stuhl	Chateau Reynella, Rhinecastle		
Previous	Penfolds, Minchinbury	Houghton	Hermitage Estate, Richmond Grove	

Source: James Halliday, *A History of the Australian Wine Industry*, p.59.

Industry Associations

The development of industry associations occurred progressively, primarily under the stimulus of government initiatives. On the positive side, and as part of its review of the role and function of primary industry statutory authorities, the government established the *Australian Wine and Brandy Corporation* (AWBC) in 1981.

This change reflected a new emphasis on user pays.⁴⁰ The Corporation was given responsibility for export marketing and the power to levy growers and producers. This brought into focus the conflict between representative organisations for large and small producers. It also exposed the absence of a national body representing the interests of small and medium producers. Thus, in 1984, the Australian Winemakers Forum was established.

Meantime, to bring the contending factions together, the government proposed the establishment of an interim Wine Industry Advisory Council. This was also established in 1984. After the government proposed an increase in AWBC levies in 1986, disagreement intensified. The increase was finally endorsed. Meantime the Advisory Council was funded for a further three years. Changes in personnel at a number of large wineries helped to induce a new atmosphere and, at the conclusion of its three year funding in 1989, the Advisory Council was replaced by a new industry association, the *Winemakers Federation of Australia* (WFA) which constituted a single voice for producers.

This is an umbrella organisation with a 1998 budget of some \$1.5 million. It unites ten associated or affiliated bodies (eg. four state level industry associations, and four regional industry associations) and has links (eg through overlapping governance structures) with eight related industry bodies (eg. Australian Wine Research Institute, Australian Council of Viticulture etc).

A variety of other organisational developments occurred between 1988 and 1992. First, the *Australian Wine Foundation* was established in 1988 by donation to focus on the wine-health relationship. The Foundation subsequently expanded its role. It funded a variety of special projects: Strategy 2025; the Five Year Plan; seed funding for the *Australian Society of Wine Educators* (ASWE), established in 1990 to respond to burgeoning consumer interest in wine; the Wine Industry Outlook Conferences; and particular research activities of the long established *Australian Wine Research Institute* (AWRI) – eg. Drug Strategy Review Committee, National Partnership on Alcohol, Advertising etc. The Foundation was abolished in September 1999 and its activities were absorbed back into the WFA.

The Grape and Wine Research and Development Corporation (GWRDC) was established in 1991 to manage the (partial user pays) statutory levy introduced to fund research and development. This organisation built on the long established research tradition in the industry. For example, specialist wine training commenced with the establishment of Roseworthy Agricultural College in 1883. Meantime the Australian Wine Board initiated research in 1934 and the Australian Wine Research Institute was established in 1955. In 1975 a triennial technical conference was initiated. In that year Wine Science and Viticulture was also introduced at the Wagga Wagga campus of what is now the Charles Sturt University.

⁴⁰ Siwan Lovett, *Revitalising Rural Research and Development in Australia*, Land and Water Resources Research and Development Corporation, Canberra, 1997.

The GWRDC was intended to increase user contributions and to link researchers more closely to growers. The Corporation is funded by compulsory levy and matching Commonwealth funds up to 0.5% of the Gross Value of Production (GVP).

The Australian Wine Export Council was established in 1992 to separate the promotion activities of the AWBC from its regulatory, information and certification activities. In 1993 a Wine Agreement with the European Community was concluded. This was followed by the establishment of a Geographical Indications Committee within the AWBC, and by the phasing out of European expressions. The industry had established its domestic market by the use of these names. Their abandonment thus reflected its new international orientation.

The Australian Council of Viticulture was established in 1991. It allows liaison between wine educators and industry representatives, including CSIRO Division of Horticulture, and the South Australian, Victorian, New South Wales and Western Australian Departments of Agriculture. This became the basis for the establishment of a CRC in Viticulture with total funds of nearly \$40 million - made up of a \$12.5 million federal grant, supplementing the established \$26.3 million research programs of the other parties.

Finally, two educational institutions - Wagga and Roseworthy – have played significant roles in socialising common perspectives among industry participants.

Thus by 1992 eight of the current nine industry bodies were established. Grape growers are represented by another body, the *Winegrape Growers Council of Australia*. These arrangements were a rationalisation of the plethora of bodies that existed previously. Further, all these bodies operate from adjacent offices in one building at Magill, South Australia. Organisational arrangements, including scope, budget and governance arrangements for the nine principal industry bodies, are listed in Table 2.3.

One stimulus to deeper collaboration was provided by a proposal in the 1993 Federal Budget to increase the sales tax on wine. A bitter public campaign followed. This experience convinced industry leaders that more needed to be done to develop recognition of the industry's special circumstances and vulnerability. A special report by the Industry Commission on industry tax issues followed.⁴¹

⁴¹ *Winegrape and Wine Industry in Australia: a Report by the Committee of Inquiry into the Winegrape and Wine Industry*, Draft Report, March, 1995, Industry Commission: Canberra.

Table 2.3 Nine Principal Industry Associations

	WINE MAKERS FEDERATION OF AUSTRALIA (WFA)	WINE GRAPE GROWERS COUNCIL OF AUSTRALIA (WGCA)	AUSTRALIAN WINE & BRANDY CORPORATION (AWBC)	GRAPE & WINE RESEARCH & DEVELOPMENT CORPORATION (GWRDC)	AUSTRALIAN SOCIETY FOR WINE EDUCATION	AUSTRALIAN WINE RESEARCH INSTITUTE	CO-OP RESEARCH CENTRE FOR VITICULTURE	WINE INDUSTRY EDUCATION & TRAINING GROUP	WINE AUSTRALIA
MISSION	<ul style="list-style-type: none"> • Represent producers 	<ul style="list-style-type: none"> • Represent growers 	<ul style="list-style-type: none"> • Statutory Authority • Quality regulation / Export promotion 	<ul style="list-style-type: none"> • Statutory Authority • Determine R&D strategy; fund R&D 	<ul style="list-style-type: none"> • Facilitate domestic wine education / promotion 	<ul style="list-style-type: none"> • Research & development 	<ul style="list-style-type: none"> • Research & development 	<ul style="list-style-type: none"> • Coordination between industry & educational institutions 	<ul style="list-style-type: none"> • Stage exposition every 2 years
FUNDING 1997/98	\$1.4m	\$2.0m	\$6.4m (1998)	\$4.9m	\$200,000	\$4.0m	\$6.0m		\$5 m
SOURCES	<ul style="list-style-type: none"> • Member subscriptions & special levies (graduated scale) 	<ul style="list-style-type: none"> • Member subscription 	<ul style="list-style-type: none"> • Statutory levy 	<ul style="list-style-type: none"> • Statutory levy 	<ul style="list-style-type: none"> • Subscriptions & levies (\$50,000 W.F.A.) 	<ul style="list-style-type: none"> • GWRDC • Contract research 	<ul style="list-style-type: none"> • GWRDC • Contract research 		<ul style="list-style-type: none"> • Exhibitor contributions
GOVERNANCE	<ul style="list-style-type: none"> • Elected board (11 members) 	<ul style="list-style-type: none"> • Elected board (9 members) • Federal organisation (3 State Councils) 	<ul style="list-style-type: none"> • Mixed nominee / elected board 	<ul style="list-style-type: none"> • 9 members appointed by minister 	<ul style="list-style-type: none"> • Subsidiary of W.F.A. 	<ul style="list-style-type: none"> • Nominated board 	<ul style="list-style-type: none"> • Nominated board 	<ul style="list-style-type: none"> • Industry reps nominated by associations 	<ul style="list-style-type: none"> • 6 member board (W.F.A. Sponsored)
STAFF	5	1	26	2.5	1	45 (15 PhD)	45	1 P/T provided by S.A. Wine Corp.	2

OUTREACH	<ul style="list-style-type: none"> • Annual Report 	<ul style="list-style-type: none"> • Periodic newsletter 	<ul style="list-style-type: none"> • Annual report • Newsletters 	<ul style="list-style-type: none"> • Annual report 		<ul style="list-style-type: none"> • Annual report • Newsletter • Technical bulletin 	<ul style="list-style-type: none"> • Conference s / training • Newsletter • Annual report 		
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Source: Industry interviews, Annual Reports

This led to consideration in the industry about how best to develop broader awareness of its needs and opportunities, culminating in the decision in 1995, to proceed to development of the Strategy 2025 project.

Scale differences between firms in the industry create differential stakes in collaboration. As noted earlier, output is dominated by four companies. They gain from collaboration in at least seven business areas: trade issues, government relations generally, taxation issues, education and training, generic marketing, research and development and investor awareness.

Whole-industry advocacy provides more leverage than would be available to a single company. On research and development, large organisations have greater stakes in linkage than smaller enterprises.

Meantime, the statutory levy arrangements eliminate the possibility of free riding - whilst the differential level of levies recognises the different stakes of producers and growers of differing size.

Collaboration and Economic Learning

Collaborative action and learning was pioneered in exporting. The development of Australia's exports was initially stimulated by a fortuitous conjunction of developments, involving both marketing efforts and the devaluation of the \$A.⁴² The first export target was established in 1990. This was for export sales of \$200 million by 1993.

The AWBC matched this with increased promotional expenditure. A transfiguring target was established in 1991. This was for \$1 billion of export sales by 2000.⁴³ The adoption of this target marked a particularly significant step. It focussed the industry on new market opportunities – and created awareness of a potential that many had not recognised or had dismissed as unrealistic.

The Australian Wine Export Council was then officially launched. Initial promotional activities are summarised in Table 2.4. Collaborative learning attained a new level with the development and launch of Strategy 2025 in 1996.

⁴² James Halliday, *A History of the Australian Wine industry, 1949-1994*, Australian Wine and Brandy Corporation/Winetitles, Adelaide, 1994, pp. 96-106.

⁴³ This report was commissioned by Southcorp from the strategy consultancy LEK.

Table 2.4 Development of Collaborative Marketing Major Markets – 1982 – 1994

Year	United Kingdom	United States*	Other
1982	<ul style="list-style-type: none"> Hazel Murphy (Austrade) organises all Australian Wine Tasting 		
1984	<ul style="list-style-type: none"> First Australian tour by English Masters of Wine 		
1986	<ul style="list-style-type: none"> \$Aust. Depreciated x% AWBC levy increased: \$220k, UK program endorsed Hazel Murphy appointed resident Promotions Manager for AWBC 	<ul style="list-style-type: none"> Growth commences under impetus decline in \$Aust. And Paul Hogan advertising campaign 	<ul style="list-style-type: none"> Canadian market grew from 1985/86. Each province monopolises liquor sales / distribution. Large cos only participants
1987	<ul style="list-style-type: none"> Export Area campaign initiated: 19 wineries, \$220k budget 	<ul style="list-style-type: none"> Australian Wine Importers Association formed. Promotional expenditure \$150,000 	<ul style="list-style-type: none"> Swedish market expanded following Chernobyl. Largest market by volume until 1990/91. Mainly bulk sales
1988 – 1990	<ul style="list-style-type: none"> Sales growth continued 1987-1988. Bulk wines accounted 33% exports 	<ul style="list-style-type: none"> Great Australian Wine Tasting (N.Y., Boston, Chicago) – October 1988 Repeated in different cities 1989 - 1990 	
1990	<ul style="list-style-type: none"> Oddbins (retail chain) promotes Australian wines AWBC formulated corporate plan with sales target of \$200 million by 1993. Promotional expenditure doubled from \$635k to \$1.15 million Growth resumed premium categories Export Area campaign: participation 37 wineries 		
1992	<ul style="list-style-type: none"> AWEC established 	<ul style="list-style-type: none"> Full-time manager appointed Australian Wine Importers Association 	
1992	<ul style="list-style-type: none"> Wine Flight initiated – 120 members U.K. trade and press 		

1994	<ul style="list-style-type: none"> • Export Area campaign enrolled 45 producers • Second Wine Flight conducted • Australian product 20% of above L5 segment; 6% total market 		
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*State level distribution complicates market access for small/medium producers

Source: James Halliday, *A History of the Australian Wine Industry*, 1949–1994, pp 94-106

Strategy 2025

The decision to initiate a visioning exercise for the whole industry grew partly out of the success of the export effort, partly out of the 1994 tax proposal, and partly from long held ambitions of industry leaders such as Brian Croser and Len Evans.

Strategy 2025 articulated the opportunity inherent in the orientation to world markets and the move from non-premium to premium segments. By 1995, these had clearly emerged as drivers of industry growth and profitability. Brian Croser commented on this trend at the 1997 Wine Outlook conference:

‘Whether a profound structural change occurred in the world’s affluent, sophisticated wine markets from about the middle of 1993 is yet to be proven in longer term events. However, in the four years since June 1993, bottled table wine consumption has quadrupled the long term growth rate and is accelerating in many markets, perhaps driven by the emerging story of wine’s health benefits.’

The Winemakers Federation was the catalyst. Overlapping governance and co-location with the WGGA, GWRDC and AWBC facilitated the coordination exercise, as did their relatively small professional staffs (approximately 15 people). The first step involved the recruitment of Paul van der Lee, a professional economist with experience of industry planning approaches.

A longer-term vision marked a deliberate move to what can be termed ‘second order’ learning. In other growth cycles, the domestic market had been the primary focus. The vision sought to shift producer focus to the world market. It attempted to lift Australian producers’ awareness of competitors in other regions - particularly California, Chile and South Africa. Finally, it attempted to shift from a primary concern with the product to a focus on business courses marketing. According to van der Lee: ‘It was the application of new technology which played the critical role in enabling new world producers to reformulate wine as a consumer proposition.’⁴⁴

⁴⁴ 2025 – Meeting the Technical Challenge, address to Tenth Australian Wine Industry Technical Conference, Sydney, August, 1998. According to Peter Dawson, BRL-Hardy’s chief winemaker: ‘Generally, Australian winemakers have a greater awareness of what consumers and the trade are

The Strategy nominated innovation and product quality as ‘core industry values.’ These norms were operationalised through a focus on six key issues: customers, markets, image, wine tourism, competitive advantage and resource capacity. The Vision document also nominated growth benchmarks for a number of key inputs including investment, acreage, water, processing and storage capacity and skilled employment.

The process for completing the vision mobilised a variety of stakeholders. It was developed by a small task force (only three people, assisted by consultants), who were engaged over a nine month period (to June, 1996). This group was supported by a thirty-strong, representative reference group. The completed document was an accessible, professionally prepared report of twelve pages.

This base document provided a focus for other collaborative activity, particularly concerning domestic marketing and research and development. Indeed it lifted both activities to a new level of aspiration. It also signalled industry prospects to related and supporting industries (eg. investors and stock markets) and to governments and other relevant institutions (eg. research and educational institutions).

Medium Term Implementation

The Strategy not only had to be disseminated among producers and growers, it also needed to be translated into medium term operational strategies. This occurred in 1997, coordinated by the WFA. A consolidated five-year plan was released that year. Fourteen specific strategies were identified. These covered domestic consumer markets, increased funding for export development, collaboration to ensure adequate supply of skilled personnel and research and development. Five of the fourteen strategies involved domestic or export marketing. The balance covered research, operations, training and the environment. For example, as a result of the Strategy exercise, the industry identified the need for 25,000 trained people over the next thirty years. A new coordinating body was proposed to enhance attention to education and training and government relations. In each case, specific steps and timelines were proposed. The direct costs of undertaking research projects was estimated at \$1.5 million.

The WFA initiated the strategy building exercise. Thereafter many of the coordination costs were incurred by other representative organisations, including all the national bodies plus state and regional producer and grower associations.

Export Development

looking for in wine styles. They adapt winemaking processes to make these wines. A lot of Europeans are still hung up on traditional practices.’ Huon Hooke, *The Flying Winemakers*, *Sydney Morning Herald*, January 26, 1999, p. 4.

Both the Australian Wine and Brandy Corporation, and its subsidiary, the Australian Wine Export Corporation, adopted the priorities of Strategy 2025 as a framework for their own policy development.

Wine Flights from major export markets and collaborative in-country marketing programs continued. Strategy 2025 provided a rationale for the expansion of these efforts and for a focus on new markets, such as Japan and Germany. A new post was established to evaluate, compile and distribute industry information. New AWEC offices were established in Stockholm and Tokyo and wine writer visits were extended to Germany and Scandinavia.

Dissemination of information occurs primarily through a bi-monthly newsletter distributed to all levy payers and a periodical, *Wine Contact*. The AWBC annual report is also widely circulated. The AWBC Board meets in particular regions and followed its formal meetings with bilateral discussions with local producer and grower organisations (Victoria, Padthaway and Coonawarra).

Research and Development

A number of organisations undertake research on behalf of the industry. These are the Australian Wine Research Institute, the Cooperative Research Centre for Viticulture, the CSIRO Division of Horticulture and the teaching institutions, the University of Adelaide and Charles Sturt University.

The Strategy 2025 process contributed to the integration of research in two ways. First, the GWRDC based its own agenda on the broad purposes articulated in the Strategy 2025 Vision and the detailed priorities identified in the subsequent Five Year Operational Plan. Its criteria for funding were also elaborated to take account of the latter.

Second, the Strategy exercise provided the grounds for the increase in the research levy, voted in 1998. Speaking at the 1997 Outlook Conference, Brian Croser, then President of the AWF, observed: 'The industry provides \$2.6 million of research levies for grape and wine or 0.16% of total value of production.'⁴⁵ Since the government offered to match the levy up to 0.5% of GVP, he pointed to possible levy-driven research funding of \$8.1 million. He also noted the industry currently contributed 15% (\$2.6 million) of then total wine research expenditure of \$18 million. The four biggest wine makers contributed 50% of this amount.

Technological developments, widely adopted throughout the industry in the late 1980s, affected both wine and grape production and prepared the industry to respond rapidly to the change in consumer tastes evident from the early 1990s. In wine production, the changes included air bag presses and cold and closed fermentation. In grape production, research

⁴⁵ Brian Croser, A Proposed Action Agenda, *Wine Industry Journal*, Vol. 12, No. 4, November, 1997, pp. 346-349.

resulted in new canopy management approaches, trellising, summer pruning, mechanical pruning, mechanical harvesting and watering methods. These changes increased yields and grape quality. Partial root zone drying process, promises both to reduce water consumption and to increase flavour.

Australia's major volume brands such as Jacobs Creek and Lindemans Bin 65 Chardonnay etc are produced from grapes mostly grown in the irrigation areas of Riverina, Riverland and Sunraysia. According to Huon Hooke: 'It is impossible to overstate the influence of improved viticulture on the rise in Riverland wine quality.' Drip irrigation has given wine makers control over watering regimes.

Regulated deficit irrigation (RDI), which involves using moisture probes to determine exactly when irrigation should be applied, is now being adopted. Partial root zone drying (PRD), which involves two sets of drippers that sequentially irrigate half the root, is being developed. This switches effort away from foliage development to fruiting and saves 40% water.⁴⁶

Research currently in progress involves genetic engineering and new strains of winemaking yeasts. Other projects include a process to analyse the molecule containing the flavour compounds – a so-called glycosyl-glucose (G-G) analysis. This would increase the capacity to produce high quality fruit. It would change the terms on which grapes are evaluated (now based on sugar content, temperature range and presence of foreign matter).

Following Strategy 2025, the five-year operational plan, and its initial levy increase, the GWRDC outlined a new approach in its 1997/98 report. Priorities were determined by Strategy 2025. Six research areas were nominated for viticulture and five for production. A further increase in levies was foreshadowed. Dissemination of research and information was especially emphasised and a survey of growers to establish awareness, sources of information and the like was planned. Regional development planning was supported to accelerate dissemination. The industry statistics task force was funded along with an industry outlook analysis by the Centre for Economic Research, University of Adelaide.

A survey of winegrape grower awareness of the CRC on Viticulture was undertaken in late 1998.⁴⁷ The sample included 240 growers, 27% from the MIA, 25% from South Australia, 21% from North East Victoria and 27% from Sunraysia. The findings provide essential data for evaluating the scale of the dissemination challenge. The survey found overall only 48% of growers were aware of the Centre but with marked regional variations – for example, 67% of Northeast Victoria growers were aware of CRCV. Awareness was also significantly more widespread amongst producers - 62% of growers who were also winemakers acknowledged awareness. Half of all growers interviewed could mention one or more positive research outcomes, as follows:

⁴⁶ Huon Hooke, The \$10 Tipple, *Sydney Morning Herald*, 18 May, 1999.

⁴⁷ TQA Research, *Survey of Grower Attitudes and Behaviour*, on behalf of the GWRDC, Adelaide, 1998.

- Water management and irrigation issues (19%)
- Improving grape quality (14%)
- Pest management and chemical management (13%)
- Nutrition and fertiliser (5%)

The sources of information were magazines and newsletters (30%), seminars and field days (13%), wine industry buyers or makers (8%) – especially prevalent amongst growers in MIA/Griffith (14%) and South Australia (11%).

Industry Media

Industry media are critical to communication and information exchange. The wine industry is richly served by industry association and commercial media. Each industry association publishes newsletters and pamphlets which are disseminated to levy payers (ie. all producers and growers). Industry information and opinion is also disseminated through three commercial journals, of which the most substantial is the *Wine Industry Journal (WIJ)*. This has a circulation of around 3000. *Australian Viticulture* serves grapegrowers and the *Grapegrower and Winemaker* serves both. Print runs for these latter two journals are estimated at 7000 and 4000 respectively. The dedicated publishing house *Winetitles* produces the *WIJ* as well as the annual *Wine Industry Directory* and the specialised *Australian Journal of Grape and Wine Research*. It also publishes an array of specialist titles related to the industry.⁴⁸

The Dynamics of Collaboration

The industry has created a comprehensive collaborative structure, which is unique in Australia. Figure 2.3 pictures this structure and its dynamics.

The overall ensemble might be conceived as made up of three zones. The first and most prominent zone is the familiar competitive market place. The industry operates in a complex array of markets, both in terms of geography and culture, and in terms of segments. This is the primary domain of competitive firms, supplemented by the Australian Wine Export Corporation which champions national brand awareness through a variety of programs and in conjunction with producers.

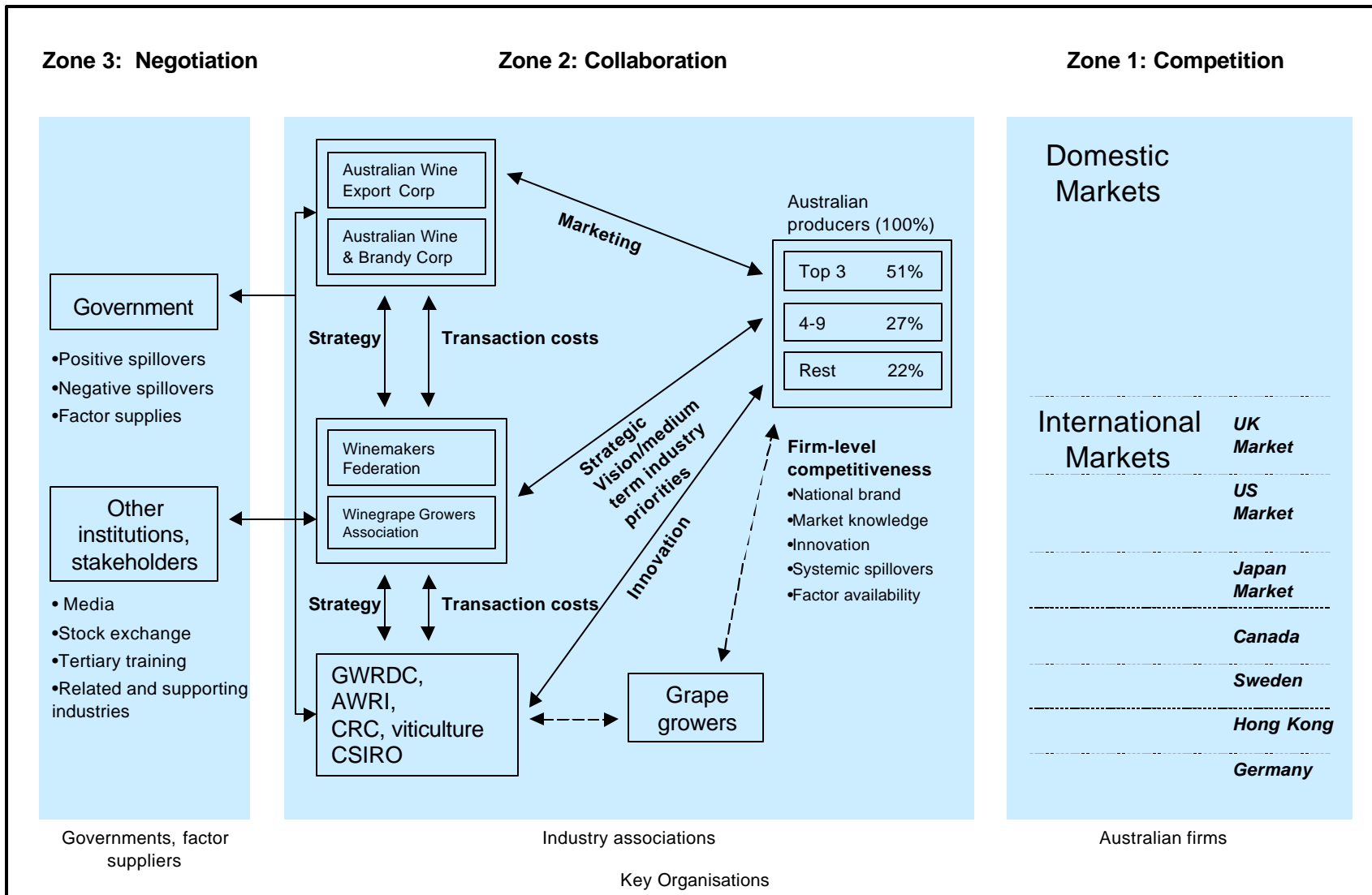
The second and third zones of action are differently based. The second zone is based on collaboration and the third on negotiation. Industry associations are the key organisations in both arenas. In the second zone, shared interests amongst industry participants are identified, collective intelligence is accumulated and disseminated, and common purposes are forged. The industry associations take the lead in these tasks. These activities can impact

⁴⁸ Winetitles web site is at: winetitles.com.au.

directly on producer competitiveness in up to five dimensions – aspirations, national brand development, market knowledge, individual brand projection and innovation. These potential impacts are relevant to all producers – although size will vary their degree of interests.

Industry representations to governments, suppliers and other stakeholders also impact on producer competitiveness. Such representations occur in the third zone and involve representation and negotiation.

Figure 2.3: The Impact of Collaboration on Firm-Level Competitiveness



This might involve such steps as:

- document and promote awareness of industry contributions to wider public policy objectives (eg. exporting, employment, environment etc),
- analyse industry need for inputs and negotiate resource flows (eg trained personnel),
- articulate and defend industry interests in relation to regulation, taxation, trade policy etc., and
- project industry messages to, and/or liaison with, stakeholders, including the media, stock exchanges, educational institutions and related and supporting industries.

For example, the Centre for International Economic Studies has documented what it assesses to be the disproportionate contribution of the wine industry to tax revenue through various special retail levies. This provides a base in research for advocacy to governments, relevant departments, parliamentarians and the media. Research and advocacy are both distinct and specialist, albeit complementary, activities⁴⁹

Dynamic processes within each zone vary and this leads to different requirements for maintenance, development and adaptation. The requirements of the competitive arena are the direct daily concern of producers and growers. The requirements and dynamics of the zones of collaboration (Zone 2) and negotiation (Zone 3) are quite different. Both industry concerns, and opportunities for synergies between firms, need to be identified. Understanding of shared interests needs to be nurtured and support for action programs needs to be mobilised. These are on-going processes. Where third-party actions impinge on the industry, appropriate representations need to be made and agreements framed and monitored.

Strategy 2025 represented an effort to leverage industry performance by raising and focussing aspirations, and by enhancing producer, grower, and supplier integration. It built on the formerly piecemeal and disaggregated approaches, evident in marketing and innovation, and placed these activities in a new context. Its frame was the international market place.

The intellectual challenge to policy making is no different in a multi-firm environment. But the structural context is vastly more complex. Shared aspirations need to be articulated, common purposes endorsed and common interests pursued. This distinguishes industry wide action from single-firm settings - and, from the perspective of institutional design, makes it particularly challenging. The organisational arrangements developed by the wine industry, and imaged in Figure 2.3, offer a paradigmatic pattern.

Detailed assessment of the impact industry performance of this dynamic structure is the issue to which we now turn.

⁴⁹ Kym Anderson, *Australia's Grape and Wine Industry into the 21st Century*, CIES Discussion Paper, No 99/24, University of Adelaide, November, 1999.

III. Collaboration and Learning as Causes of Industry Performance

The development of economic learning and the amelioration of transaction costs was pursued through the collaborative activities outlined in the last section. To evaluate their impacts, published data was sought or reworked and comparisons with other industries in roughly comparable circumstances were sought.

This approach was chosen following neo-classical logic. If the competitive environment is the central cause of performance, as neo-classical theory implies, rates of performance between sectors should not vary excessively. If they do, this implies the presence of other factors. Where superior performance occurs in areas in which the industry has either itself seeded new aspirations collaboratively, or established collective management, it seems reasonable to infer these processes have had causal effects (unless other special factors are present). In addition, in international comparisons, Australia and other New World wine producers started from broadly the same competitive position in 1986. If Australia's performance outstrips that of other countries, this too would suggest the presence of additional causes, although it would remain to be shown that collaborative activity was the critical factor.

Performance was assessed in areas expressed in industry goals. Six areas were evaluated: reorientated global markets, export growth, capital raising, move to higher value segments, research and development, comparisons with other new world producers. All value data is in current prices - it is not adjusted for inflation, unless otherwise indicated.

Reorientation to global markets: Industry planning sought to shift producer aspirations from domestic to international markets. There is powerful evidence this has occurred, on a scale beyond what might have happened had competitive forces alone been operating. First, the number of exporting companies grew more rapidly than the growth in the number of companies. Exporting firms grew from 270 in 1994 to 414 in 1998, a 53% increase.⁵⁰ Over the same period, the total number of wineries has increased from 802 to 1104, or by 38%. The more rapid growth in export participation suggests that the wine industry is becoming more export oriented.

Export participation seems to be on a far greater scale than in other Australian sectors. In 1998, 38% of all producers were exporters. This compares with 21% for food beverages and tobacco industries generally, and 7% for the whole manufacturing sector through the period 1992-93 to 1994-95.⁵¹ An earlier disaggregated survey of export participation in 17 manufacturing sectors showed only two with higher export participation rates than there seem in the wine industry – pharmaceuticals (participation rate, 76%), and photographic and scientific equipment (participation rate, 39%).⁵²

⁵⁰ Australian and New Zealand Wine Industry Directory.

⁵¹ Industry Commission and Department of Industry, Science and Tourism *A Portrait of Australian Business, Small Business Research Programs*, AGPS, Canberra, 1997, p.121.

⁵² *Emerging Exporters, Australia's High Value-Added Manufacturing Exporters*, Australian Manufacturing Council/ McKinsey and Co., June, 1993, p. 38.

Industry endorsement of the Label Integrity Program, introduced in 1990, and of the EU/Australia Wine Agreement, signed in 1992, also signified this export reorientation. This involved the progressive replacement of labelling based on European geographic indications and traditional expressions with varietal and Australian regional identification. Since the domestic industry had hitherto based its marketing on the former, this change was particularly significant. This occurred under the influence of the AWBC, but before Strategy 2025. Sixty eight percent of weighted votes cast in 1989 supported the change.⁵³

Comparisons of Wine with ETM export growth: The extraordinary export performance of the wine industry can be fully appreciated when compared against knowledge-intensive manufacturing industries. Between 1989-90 and 1997-98 wine exports grew 26% each year on average, significantly outperforming the 14% average annual growth in elaborately transformed manufactures (ETMs) exports (Figure 3.1). Moreover, in terms of export growth the wine industry is in the same league as other high profile manufacturing industries such as the telecommunications equipment, passenger motor vehicles (PMV) and computer equipment industries.

In July, 1999 annual wine exports had reached \$1,020 million – not far behind the 1997-98 totals for computer equipment (\$1,308 million), telecommunications equipment (\$1,047 million) and ahead of passenger motor vehicles (\$1,001 million) ⁵⁴ (ABS cat. 1329.0; DFAT various years).

Patient Capital: It is much harder to establish the precise role of industry collaboration in enhancing industry standing with investors. Interviews suggest Strategy 2025 is a basic source document for analysts in investor appraisals both of industry prospects and of individual companies. It is also cited in prospectuses and in annual reports. A citation analysis or impact survey has not been carried out.

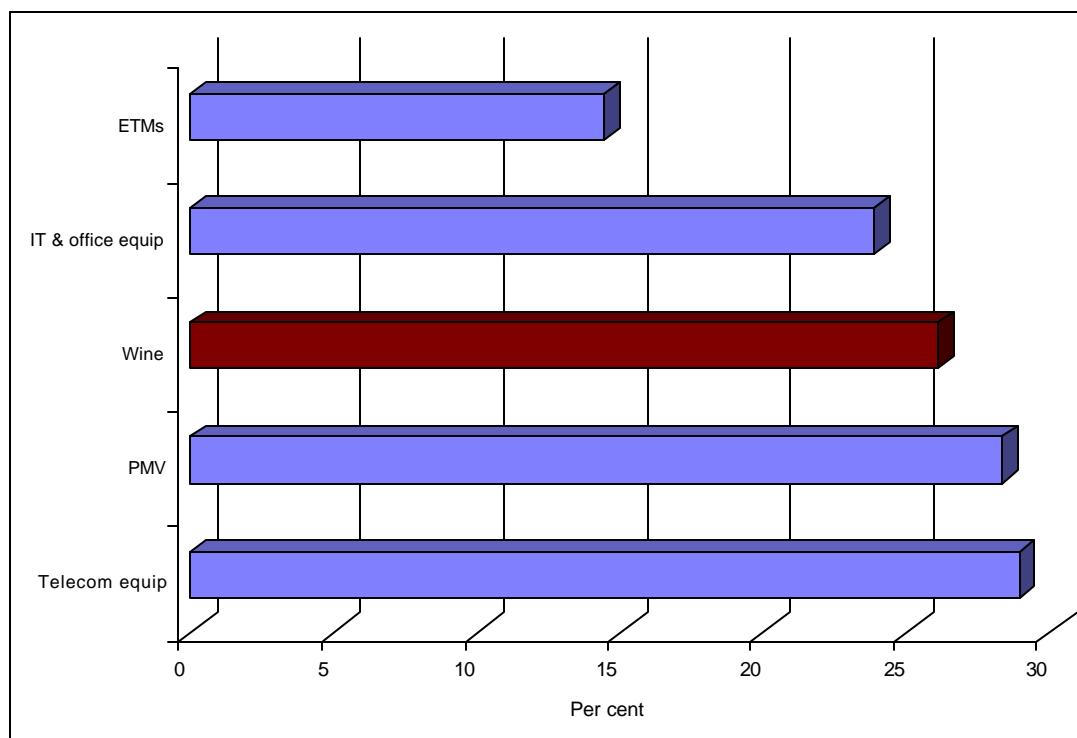
The enhanced standing of the industry is however clear in three developments: the strong performance of wine company share prices, the increased flow of funds into the industry and the growth of new listings and takeovers. The wine index, which represents listed wine company share price movement, performed poorly in 1995 due to a poor vintage. Since 1995, wine companies have out-performed both the All Ordinaries and Industrial indices (Fig. 3.2). Market capitalisation of wine companies grew from \$1 billion in 1992 to \$4.2 billion by 1999.⁵⁵

⁵³ Australian Wine and Brandy Corporation Annual Reports, 1989/90, and 1991/92.

⁵⁴ ETM industries' exports are collated under SITC basis.

⁵⁵ I. Ries, Message in a Bottle for Nervous Investors, *Australian Financial Review*, 24-28 December 1998.

Figure 3.1: Wine and Elaborately Transformed Manufacture Industries' Average Annual Export Growth⁵⁶ 1989-90 to 1997-98 – current prices.



Source: ABS cat. 1329.0; DFAT (various years).

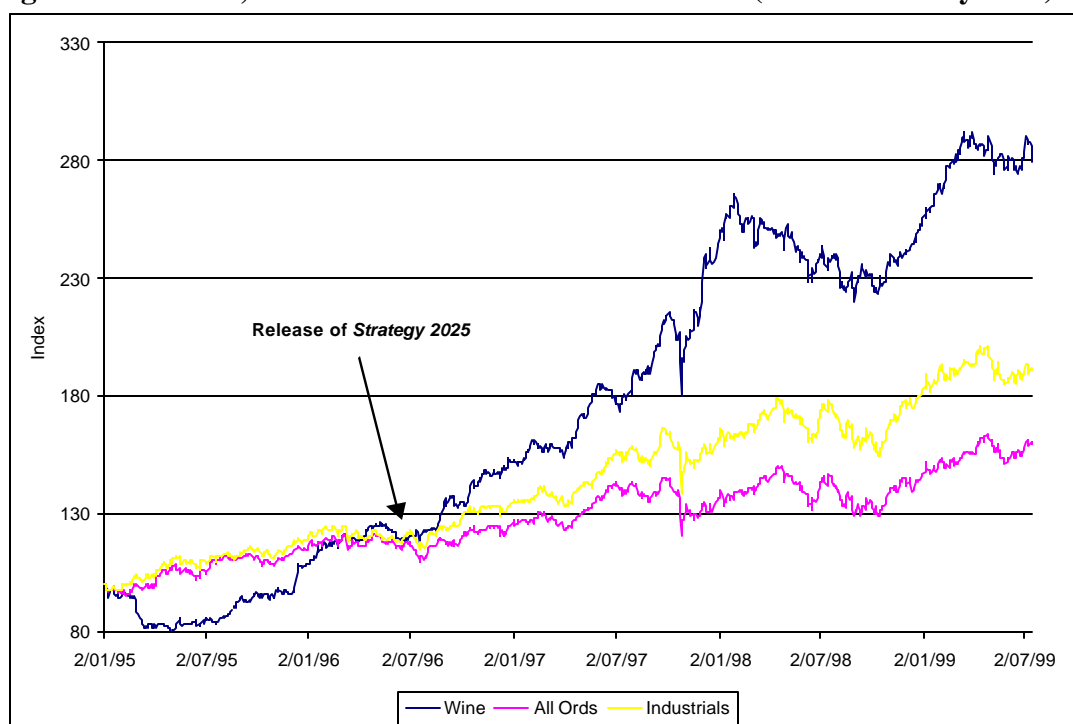
This improved performance of wine stocks has led more wine companies to list on the ASX. At the beginning of the 1990s there were only 3 wine companies listed on the ASX, whereas by the end of the decade there were 17 listed wine companies. In addition 5 companies delisted as a result of takeovers – a further indication of interest in the industry (Macquarie Equities).

The combined effect of more listed wine companies and increased investor receptiveness to wine investments has helped increase the industry's ability to raise funds. As with wine companies' share performance, capital raising by listed wine companies has seen an increase since 1995-96. In 1998-99, the industry raised \$131 million on the stock market (Macquarie Equities). Further, since the launch of *Strategy 2025* in mid-1996 around \$1 billion has been invested in Australian vineyard development.⁵⁷ The growth in share price, capital raising and the number of listed wine companies suggests the new popularity of wine industry investment – but although the industry's collaborative efforts appear to be a significant cause, their precise contribution remains to be more thoroughly established.

⁵⁶ ETM industries' exports are collated under SITC basis. Exports are by value.

⁵⁷ D. Travers, *The Grape Rush*, *Wine Industry Journal*, Vol. 14, No. 1, January, 1999, p. 73.

Figure 3.2: Wine⁵⁸, Industrial and All Ordinaries Indices (100 = 2 January 1995).



Source: Macquarie Equities.

Move to Higher Value Segments: The shift of the Australian export mix from bulk wine to higher value wine segments occurred rapidly in the late 1980s. Australia's performance outstripped that of other New World producers, faced with comparable market shifts and starting from comparable positions.⁵⁹ This suggests the presence of factors additional to market forces. Nicholson illustrates the extent to which the Australian product occupies higher value added segments by comparison with other New World producers.⁶⁰ In 1990 Australia's shipments averaged \$2.38 per litre – in 1997 \$2.86 per litre. By comparison, Chile's average per litre yield in 1990 was \$1.18 and in 1997, \$1.87; in 1990 the USA yield was \$1.28 per litre and in 1997 \$1.87. Precise data by market segment by country is unavailable. Nor is there precise data on the impact of the diffusion of innovation.

However, the evidence points strongly to the presence of factors additional to market forces. For example, in the U.K. market, Australia is the only one of the new wine countries with nationally designated shelf space in major supermarket chains (Tesco, Sainsburys). Supermarkets are critical in U.K. distribution. Interviews suggested the Strategy 2025 document gave international buyers additional confidence in the industry, at a time when buying decisions depended partly on judgements about its longer-term prospects.

⁵⁸ The wine index in the chart is a simple unweighted sum of the daily share prices of BRL Hardy, McGuigan, Normans Wines, Petaluma, Peter Lehmann Wines and Simeon Wines. These are the pure wine businesses that have been listed through the period from January 1995 to the present.

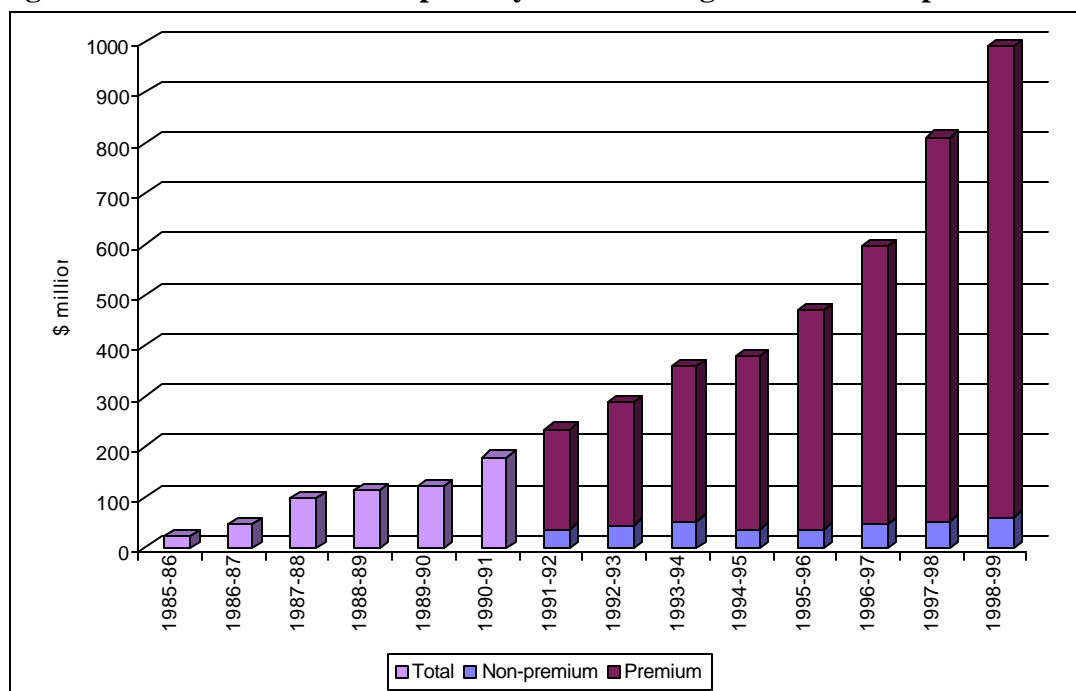
⁵⁹ *The Wine Spectator* provides quality scores for roughly 3500 bottles of wine tasted over the 1987 to current periods. The average rating for Australian wines has risen from 81.94 in 1988 to 86.48 in 1999.

⁶⁰ Robert Nicholson, Major New World Wine Producers Continued their Export Growth in 1997, *Wine Industry Journal*, Vol. 13, No. 2, May, 1998, pp.134-136.

The changing mix between premium and bulk exports indicates rapid adaptive capacity on the part of Australian producers and the rapid assimilation of market signals in production planning. Australia's exports of premium wine increased from \$198 million in 1991-92 to \$932 million in 1998-99 (Figure 3.3). Over the same period, non-premium wine exports have never been more than \$59 million per annum.

Premium exports contributed 97% of the growth in the value of Australia's wine exports since the early 1990s. While the value of non-premium exports have grown by an average 9% per annum since 1991-92, the value of premium exports have grown an average 25% per year over the same period (AWBC). Overall, the value of Australia's wine exports has grown by an average 38% per year since 1985-86 (ABS cat. 1329.0; AWBC).

Figure 3.3: Australia's Wine Exports by value and segment – current prices.⁶¹



Source: ABS cat. 1329.0; AWBC.

Research and Development: The wine industry is knowledge-driven. Research and development (R & D) has been, and continues to be, critical to its success. Interviews suggest technological developments were widely adopted throughout the industry in the late 1980s and affected both wine and grape production. These prepared the industry to respond rapidly to the change in consumer tastes evident from the early 1990s. In wine production, the changes included the adoption of air bag presses and cold and closed fermentation.

⁶¹ 'Premium' wine here is defined as bottled wine. Non-premium is wine sold in other forms of packaging, namely bulk, flacons and soft packs (casks). Data from 1985-86 to 1990-91 is from ABS, while data over period 1991-92 to 1998-99 from AWBC. Segmented export data (premium versus non-premium) on a value basis is only available from 1991-92.

In grape production, research resulted in new canopy management approaches, trellising, summer pruning, mechanical pruning, mechanical harvesting and more effective irrigation methods. These changes increased yields and grape quality. The new partial root zone drying process promises both to reduce water consumption further and to increase flavour. Data on the precise impacts of these innovations is not available.

The research and development levy was increased from \$3.00 per ton to \$5.00 per ton (67% increase) commencing with the 1999 harvest.⁶² This industry willingness to impose additional costs on itself suggests wine and grape producers think they receive significant benefits from collaborative R & D.

In total around \$20.9 million was spent on grape and wine research and development (R&D) in Australia in 1996-97 (CRCV; ABS unpublished data). Funding for grape and wine R&D is partly funded by the private sector through levies paid to the GWRDC, and through direct research expenditure by wine companies separate to their levy payments.⁶³ In 1996-97 the private sector funded \$4.3 million of R&D, \$2.6 million through levies and a further \$1.7 million in additional R&D (CRCV; ABS unpublished data). Meanwhile governments advanced almost four times the level of private sector funding, granting \$16.6 million through matching levies to the GWRDC and other grants to research organisations and universities.⁶⁴

Current spending levels are comparable to other manufacturing segments. Total turnover in the Australian wine industry was around \$2.3 billion in 1996-97 (ABS cat. 1329.0). This suggests that grape and wine R&D represents just over 0.9% of wine industry turnover, almost the same as the 1.1% R&D intensity for the whole of the manufacturing sector (Table 3.1).

The wine industry is also an R&D intensive industry amongst the food, beverage and tobacco group, where R&D represents around 0.5% of turnover. The industry's commitment is similar to other resource-based manufacturing industries such as the petroleum (0.9%), non-metallic mineral product (0.8%) and metal products (1.0%). On the other hand, if the industry is compared to other integrated companies its research and development commitment is relatively low. For example, based on 1997/98 data, BHP, an integrated steel and commodity company, spent about 2.21% on research and development, Amcor, a paper company, 2.1%, Telstra, 1.4%, and Ericsson, 8.3%.⁶⁵

⁶² Winemakers Federation of Australia Press Release, 23 July, 1998.

⁶³ Anecdotal information from GWRDC (23/7/99).

⁶⁴ Estimates from CRC, Viticulture. Hoj and Hayes estimate spending in 1996/97 at \$17.9 million. They argue this amount is insufficient. P. B. Hoj and P. F. Hayes, *The Australian Wine Industry's Research and Development and its Importance for Sustained Growth*, Proceedings, *Tenth Australian Wine Industry Technical Conference*, Winetitles Adelaide, forthcoming, 1999, pp. 2-7.

⁶⁵ R and D gets razor treatment, *The Age*, 1st May, 1999. Another set of comparisons is proposed in Hoj and Hayes, *ibid*. International comparisons on research spending are in Robin Day, *Into the Next Century – Without Fear*, *Wine Industry Journal*, November, 1997, pp. 352-353.

Table 3.1: R&D Performance: Wine and Other Manufacturing Industries, 1996-97.

ANZSIC Code		R&D \$m	Turnover \$m	R&D intensity ⁶⁶ %
	<i>Wine</i>⁶⁷	21	2,270	0.9
21	Food, beverages & tobacco	232	44,978	0.5
22	Textiles, clothing, footwear & leather	21	9,935	0.2
23	Wood and paper	191	11,481	1.7
24	Printing, publishing & recorded media	17	14,868	0.1
25	Petroleum, coal, chemicals & assoc.	309	32,863	0.9
26	Non-metallic mineral products	66	8,622	0.8
27	Metal products	365	37,894	1.0
281-282	Motor vehicles & parts	401	19,697	2.0
283	Photographic & scientific equip	91	1,598	5.7
284-285	Electronic and electrical equip	423	12,063	3.5
286	Industrial machinery & equip	144	7,902	1.8
29	Other manufacturing	46	6,446	0.7
C	Manufacturing	2,305	208,348	1.1

Source: CRCV; ABS cat. 1329.0, 8104.0, 8221.0 and unpublished data.

Although complete data is not available, evidence suggests a high rate of take-up of technological innovations in the wine industry, by comparison with other Australian manufacturing industries. Data on take-up, or on the rapidity of take-up has not been gathered for the wine industry.

However, a survey of winegrape grower innovation was undertaken in late 1998.⁶⁸ This showed 68% of growers had adopted one or more innovations. Areas of innovation were: water management and irrigation issues (19%); improving grape quality (14%); pest management and chemical management (13%); nutrition and fertiliser (5%). This compared with the average for innovation take-up in food, beverages and tobacco of 36.3% and total manufacturing of 26% (Table 3.2).

⁶⁶ 'R&D Intensity' is industry R&D as a percentage share of industry turnover.

⁶⁷ 'Wine' R&D includes grape R&D.

⁶⁸ TQA Research, Survey of Grower Attitudes and Behaviour, on behalf of the GWRDC, Adelaide, 1998.

Table 3.2: Proportion of Businesses Undertaking Technological Innovation, 1996-97, by industry (%).

Industry Subdivision	Type of technological innovation		
	Product	Process	Total
Food, beverages & tobacco	33.0	29.1	36.3
Textiles, clothing, footwear & leather	14.7	13.6	15.4
Wood & paper products	11.8	12.0	15.7
Printing, publishing & recorded media	17.6	20.7	25.6
Petroleum, coal, chemical & assoc. products	34.8	29.3	42.1
Non-metallic mineral products	32.6	20.7	35.5
Metal products	20.3	12.7	21.1
Machinery & equipment	33.0	19.8	35.3
Other manufacturing	18.9	14.7	20.9
Total manufacturing	22.9	17.8	26.0

Source: ABS cat. 8116.0.

Comparisons with other New World Producers: As already noted, comparative data on changes in rates of penetration of premium segments in particular national markets, based on the share of supplier countries shows the superior performance of the Australian industry by comparison with other New World producers. Changing country market shares show Australia's strong performance in the U.K. and EU and Chile's strong performance in Japan and the US (Table 3.3). Australia's strong penetration of the U.K. market shows it almost matching Italy's importance as a wine supplier and Australia has managed to match the strong growth of Chile's share of U.S. wine imports.

Another indicator that Australian approaches are regarded as 'best practice' would be their imitation – in fact, both California and South Africa propose to emulate the planning approach adopted in Australia. Domestically, the gold industry has also indicated an interest in this approach.⁶⁹

⁶⁹ *Australian Financial Review*, 12th March, 1999.

Table 3.3 Wine Producing Countries' Share of Selected Wine Markets' Imports(%)

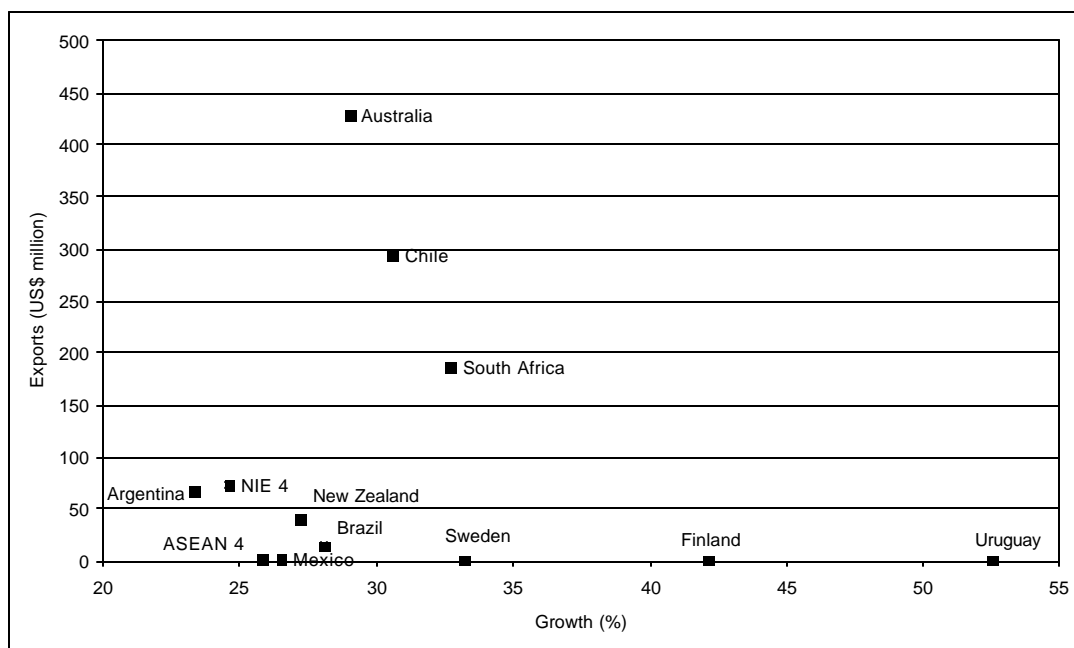
Markets	UK		USA		Germany		Japan		Europe	
	1990	1997	1990	1997	1990	1997	1990	1997	1990	1997
Producers										
France	52	40	47	45	49	39	65	56	51	40
Italy	15	13	31	27	32	34	5	13	20	18
Spain	8	9	8	5	8	12	3	3	8	12
Portugal	4	4	3	3	2	1	-	-	6	5
Germany	13	7	5	2			-	9	6	4
<i>Australia</i>	<i>2</i>	<i>10</i>	<i>2</i>	<i>7</i>	<i>-</i>	<i>1</i>	<i>2</i>	<i>2</i>	<i>1</i>	<i>4</i>
USA	1	5			-	1	6	5	1	3
South Africa	-	3	-	-	-	1	-	-	-	2
Chile	-	3	2	8	-	1	1	3	-	2
New Zealand	-	1	-	-	-	-	-	-	1	1
Other	5	5	2	3	9	10	18	9	6	9
Total	100	100	100	100	100	100	100	100	100	100

Source: DFAT, UN database.

“-” means no significant sales.

Overall, Australia's export performance has outstripped that of competitor countries. Of the twelve fastest growing wine-exporting countries in the ten years from 1986 to 1996, five countries exceeded Australia's growth rate (Figure 3.4). Of these, Sweden, Finland and Uruguay were growing from virtually minimal volumes. The two major competitors, South Africa and Chile, achieved much lower total volumes despite starting from similar minimal export levels in 1986-87 and despite enjoying sales growth over this whole period.

Figure 3.4. Twelve Fastest Growing Wine Exporting Countries (1986-1996) and Their Value of Exports (1996)



Source: Berger, Anderson & Stringer (1998), pp. 126-127.

A third source of evidence comes from the Rabobank⁷⁰ survey of the international wine industry. The report rates established and New World producers in a league table of eleven attributes (Table 3.4). Three are natural endowments (geography, climate and land); five are created assets (labour, capital, infrastructure, knowledge infrastructure, and networks); and three involve the environment (domestic market, economy and government).

Australia is not rated 'outstanding' in relation to any natural asset. The Australian industry scores highest in relation to created assets. The US, Germany and Australia each receive outstanding assessments in three categories and good assessments in the others. Australia is rated outstanding for both knowledge infrastructure and networks, along with the USA, Germany and France. No other New World producers are so rated.

This suggests that Australia's strategic-collaborative approach has allowed it to build knowledge links and networks that are a source of competitive edge. Australia's principal strengths according to these ratings flow from its created assets. Only France rated ahead of Australia in overall tally (France: 5 outstanding and 4 good ratings; Australia: 4 and 5 respectively). The US scored the same overall result as Australia.

⁷⁰ *The World Wine Business*, Rabobank International, Utrecht, Holland, May, 1999, p. 47.

Table 3.4: Comparison of competitiveness old wine vs new wine countries

Production Factors	Old						New					
	France	Italy	Germany	Spain	Portugal	Greece	USA	Argentina	South Africa	Australia	Chile	New Zealand
Geography	+	+	+	+	•	•	+	•	•	•	•	•
Climate	++	+	-	+	+	+	+	+	++	+	++	++
Land and raw materials	+	+	+	+	+	+	+	++	•	+	++	+
Labour	•	•	•	•	•	•	•	+	+	•	+	•
Capital	++	+	++	+	•	•	++	-	+	++	•	+
Infrastructure	+	+	+	•	•	•	+	-	+	+	•	•
Knowledge Infrastructure	++	+	++	+	•	•	++	•	+	++	+	+
Domestic Market	++	+	-	+	-	-	++	•	•	+	+	+
Network	++	•	++	•	•	-	++	-	+	++	+	+
Government	=	=	=	+	=	=	+	•	-	+	+	+
Economic variable	+	•	+	+	•	+	+	-	+	++	+	+

Note: - moderate + good
 ++ outstanding • no specific advantage
 = balance between advantages and disadvantages

Source: Rabobank International

IV. Future Implications for the Wine Industry

Strategy 2025 sought to ‘reframe’ the idea of the industry.⁷¹ It sought to create a common awareness of the priority of international participation, marketing and innovation, and of the implications of these new priorities for a variety of current activities. This potential gain was the basic ground for producers to ‘buy in’. Further, reaching their gains required collaboration amongst producers. The complex structural ensemble of collaboration in the wine industry depicted earlier in Figure 2.3 was given coherence and direction through this process.

Considerable initial momentum was generated. But maintenance and development of strategic collaboration is an on-going task and requires continual action on several fronts (eg. research, marketing, competitor developments etc). It also requires action that is specifically tailored to the differing needs of producer and grower segments.

The first requirement is the continual nourishing of strategic awareness amongst industry participants. Through Strategy 2025, the industry has moved to constitute itself as an integrated cluster. This is in a context in which authority is based on consent, not hierarchy, and needs to be continually renewed and negotiated. Continuing momentum and commitment requires the active engagement of industry members. The seeding of strategic awareness is an on-going process of consultation, information generation and collaboration. The strategic envelope provides the rationale for producer participation. It suggests the gains available to all through collaborative action. The processes by which strategic awareness might be nourished are varied – but research, information, outreach and dissemination are critical.

A second reason to sustain strategic focus arises from the need to maintain industry commitment to the unfolding medium term and operational agenda. The strategic framework provides the integrated rationale for on-going activity in innovation and marketing, and in negotiations with governments, other stakeholders and factor suppliers.⁷²

The theoretical approaches introduced earlier suggest the potential contribution of this collaborative architecture. But its full flowering requires commitment of substantial financial and other resources. It is not clear that this has occurred to a sufficient level in the Australian wine industry. Data on association spending and staffing was gathered for this study – but more detailed work would be required to assess its appropriateness. cursory evidence suggests more resources are required.

⁷¹ For a critique of the failure of Strategy 2025 to sufficiently emphasise profitability and returns see David Wollan, The Australian Wine industry, A Sceptics View, *Wine Industry Journal*, February, 1998, pp.22-24.

⁷² Several contributors have argued for an increase in research and development spending – Hoj and Hayes, op. cit; Brian Croser, A Proposed Action Agenda, *Wine Industry Journal*, Vol. 12, No. 4, November, 1997, pp. 346-349.

For example, the WFA has only two senior staff members to manage both strategic development arising from the unfolding of Strategy 2025, and the on-going requirements for analysis and liaison associated with the various public agencies and bodies surrounding the industry. Marketing strategy in the critical international arena is managed by one or two people with a variety of other responsibilities. Similarly, oversight of research strategy requires engagement with its overarching purposes.

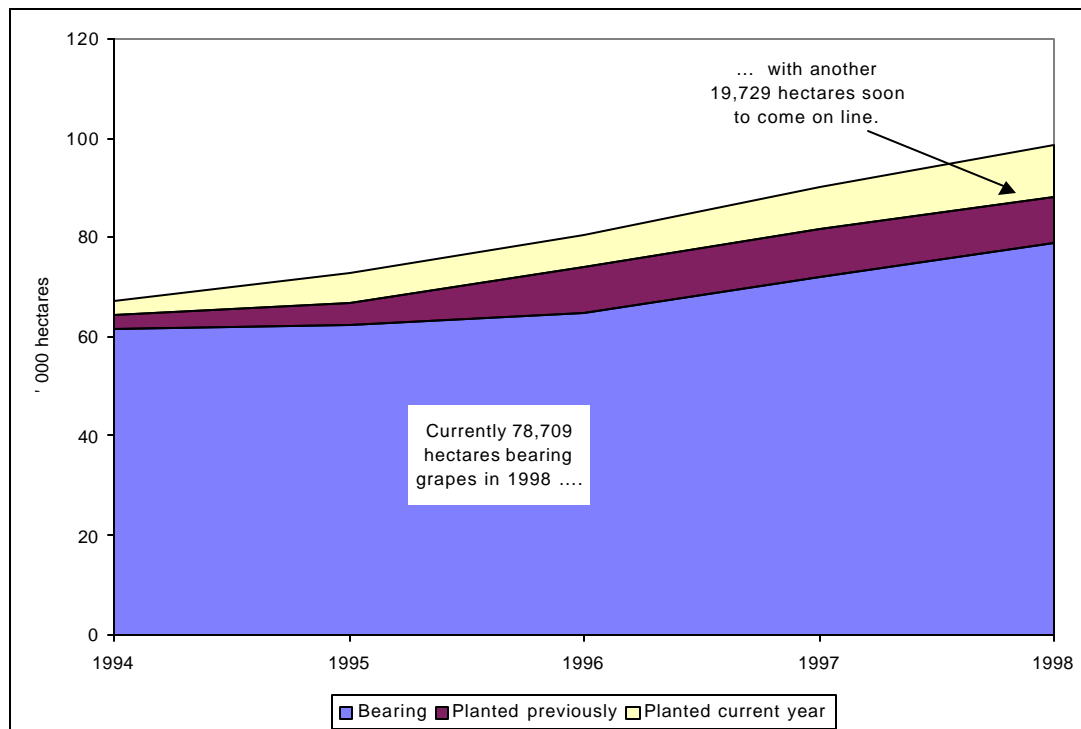
In addition, there is no process that would routinely focus attention on the operating implications of Strategy 2025 priorities. The Five-Year Operating Plan represented an effort – but it is not clear how many of the foreshadowed programs have been implemented or who is responsible for coordination and monitoring.

One complexity in sustaining collaboration arises from the differing incentives. Scale differences between firms in the industry create differential stakes and concerns. All firms have deep interests in united action, but intensity of concern can vary between areas. The statutory levy arrangements eliminate the possibility of free riding - whilst the differential level of levies recognises the different stakes of producers and growers of differing size.

One fundamental theme of Strategy 2025 was marketing. Marketing seems likely to be of even greater significance in the next phase of industry development. This is underlined by the shift to premium segments. In addition, major growth opportunities would seem to lie in culturally more difficult environments (Japan, Germany, perhaps China). The major international review of the industry, published in May 1999 by Rabobank, provides an unequivocal endorsement of the importance of marketing. This was reinforced in interviews conducted for this study. Marketing may, in fact, be one approach to sustaining strategic 'learning' amongst industry members. Marketing offers a multi-faceted theme that could be the subject of coordinated attention both at strategic and operational levels. Action at strategic levels is desirable to cultivate the 'learning' that not only enhances the effectiveness of individual producers – but also reinforces and augments commitment to collaborative programs.

The rapid expansion of the whole industry is one reason to raise awareness of marketing issues. This is indicated in the increase in acreage planted. Over 19,700 hectares are due to come into production in the next few years, an increase of 25% in acreage, and indicative of the growth in demand for wine grapes (Figure 4.1).

Figure 4.1 Area of Vines (hectares)



Source: ABS cat. 1329.0

Note: 1998 figures are preliminary.

Approximately 60% of acreage is owned by major companies or tied to them through long term growing contracts. The balance is more speculative - and represents that segment where fluctuations in supply and demand will be absorbed in grape prices. Enhanced marketing efforts seem to offer the best opportunity to sustain industry growth rates. By contrast, disputes between producers and growers might fracture industry unity, weaken its standing in crucial fora and damage its reputation for coherent and purposive action.

The continuing internationalisation of the wine industry is also an increasingly important issue for the Australian wine industry. Several large wine makers are currently expanding, or planning to expand, their operations overseas. Retaining an industry base in Australia requires the maintenance of what Dunning describes as 'location specific assets.' These are the institutional and infrastructural features that leverage competitive advantage – for example, education facilities, R & D capacity, skilled personnel and the like. Location specific assets are mostly linked to public policy, not to firm strategy.

A Wine Industry Cluster?

The development of cluster relationships is implicit in industry collaboration. Although not a perfect guide, ABS input-output data provides some indication of the potential for development of an Australian cluster (ABS unpublished data). This data highlights other industries with important links to the wine industry.

'Other agriculture' industries contributed 29% of total supplies of intermediate goods to the wine industry (\$366 million) in 1994-95, the overwhelming proportion of which was

supplied domestically by Australian firms, mostly from winegrape producers. The paper container and products industry supplied \$132 million or 10.4% of intermediate inputs.

Glass and glass products supplied \$103 million, or 8.1% of industry inputs. These were predominantly sourced domestically. Partly under ACCC influence, and partly through negotiation between the industry and the glass provider (ACI), the price of bottles has progressively reduced towards world market levels.⁷³

Industries where imports supplied a significant proportion of inputs to the Australian wine industry were insurance services (73% imported) and plastic products (46% imported)(ABS unpublished data). A substantial portion of the oak barrels used by the Australian wine industry are also imported.⁷⁴ The demand for such barrels has increased as Australian wine production has grown, particularly in premium wines. Service industry linkages were with accommodation, cafes and restaurants, wholesale trade and road transport. The enhanced flow of investment funds to the industry, despite the lead-time in realising returns, has already been noted.

The 1999 ANZWID lists a total of 663 firms supplying a wide range of specialised inputs. The areas with more than 50 listed suppliers include: winery equipment manufactures (108 firms), chemical manufactures and suppliers (66 firms for production and 37 for viticulture), cooperage (54 firms), filters (83 firms), pump suppliers (72 firms), packaging specialists (67 firms), and tanks (55firms). A number of these firms may deal in imported products. The Directory also lists 175 distributors, 70 specialised consulting firms and 242 organisations that provide various types of support services to firms in the industry.

This quantitative and descriptive data reflects formal or trade based interdependencies. Clustering is above all an associative process, involving identification of critical linkages, and the establishment of processes to manage performance at these junctures - for example, by defining common interests, identifying spillovers and interdependencies and speeding up response times.

The collaborative processes instituted in the Australian wine industry are a framework for the development of more elaborate cluster arrangements. The industry has increased its collaborative effort, but there is considerable scope for more formalised activity to capture greater commercial value from the latter.

⁷³ Chris Snow, Bottle Heat Cools but heat still on ACI, *Wine Industry Journal*, February, 1998, pp. 26-32.

⁷⁴ Australian Financial Review, 9th April, 1999.

V. Implications for Other Industry Sectors and Governments

The theoretical grounds for an augmented public policy and industry development approach were earlier sketched. To summarise, a combination of collaboration and competition might be expected to yield superior performance outcomes to vigorous competition alone. This is because a combination of collaboration and competition is consonant with the new drivers of competitive success.

In the present economic phase, characterised by Dunning as ‘alliance capitalism’, competitive success requires firm, but preferably cluster, capabilities for innovation and participation in international markets.⁷⁵ Competitive success increasingly requires alliances between firms and other institutions. These developments raise the significance of transaction costs in firm level decision-making. Transaction costs can only be ameliorated in one of two ways: internally within firms, or through focussed collaborative action. The latter requires the adoption of an appropriate (and shared) strategic outlook amongst protagonists.

An industry-level strategy helps reduce transaction costs by increasing information, establishing common goals and coordinating activities. It allows gains to be shared and cluster synergies to be realised. The strategy provides the instrumental ground for linkage. It needs to be developed participatively. It also needs to be deliberately disseminated to mobilise industry participants. Since the goal of collaboration is enhanced market outcomes, feedback is relatively straightforward and relatively readily available.

The wine industry provided an ideal milieu for testing these theoretical propositions. This is because all three elements – internationalisation, innovation and a shared outlook – have been deliberately cultivated. The evidence reported earlier vindicates the theory. It demonstrates an international reorientation on the part of industry participants. It shows their greater proportionate participation in exporting by comparison with other Australian industry sectors. It shows superior performance in export markets by Australian participants by comparison with competitors. It shows industry participants themselves judge collaboration to have added value to firm level operations. Finally, it shows a progressively developing commitment to research and development – and a reasonable contribution to this activity by comparison with other Australian sectors, albeit amplified by a very substantial public sector contribution.

Developments in this industry occurred under the pressure of fortuitous changes and the ambition and ‘enlightened opportunism’ of a few industry leaders. The industry structure – four major, substantially locally owned producers and a growing number of medium and small producers – emerged as a result of contingencies in the late 1980s.

⁷⁵ Dunning, op. cit; also *Alliance Capitalism and Global Business*, Routledge, London, 1997; also David B. Yoffie, (ed), *Beyond Free Trade: Firms, Governments and Global Competition*, Harvard Business School Press, 1996.

The industry associations that supported industry collaboration emerged at the same time. This occurred under the pressure of another set of contingencies. The contention between producers evident until the late 1980s was progressively displaced.

Collaboration did not develop systematically or sequentially. Joint action in relation to innovation and exporting occurred independently and partly under the pressure of more general government action. Legislation underwrote compulsory levies and the other sanctions exercised by the exporting authority. Exporting was itself progressively recognised as an opportunity, partly as a result of the sales surge arising from exchange rate changes in the mid 1980's, and partly as a result of the vision and commitment of a few leaders. An overall framework, embodied in Strategy 2025, was added in 1996 - some years after the development of deepened industry commitments to innovation and internationalisation. This framework has since provided the foundation for reconfiguring and enhancing both these activities.

Other relevant considerations include the special features of the industry. These particularly relate to the socialising of industry participants. This occurs through training at one of two institutions, which builds relationships between industry participants and imparts traditions of quality and research. In addition, the product is particularly favourable to the projection of a distinctive 'Brand Australia.'

These varied considerations circumscribe the generalisability of this industry's experience. Yet the patterns evident in the wine industry case suggest approaches to building competitive strength that may fit other sectors – and that may be mutually reinforcing. There would seem to be at least three possible strategies, which are not mutually exclusive. The first might involve a 'bootstrap' effort under the influence of acknowledged industry leaders. The second might involve leadership by established industry associations. And the third might involve government acting in a catalytic role. These possibilities are considered in turn.

Bootstrap Effort – Industries do it for themselves

In principle, there seems no reason why any cluster/industry should not bootstrap its own efforts in marketing, innovation, overall strategy or some combination of these activities. Innovation, internationalisation and a shared vision might all be developed in appropriate circumstances – and if the theory cited at the outset is correct, many business sectors with internationally tradeable products will experience gain through participation in external markets and/or innovation. In the wine industry case, the change agents were acknowledged industry leaders. The circumstances of this industry nourished the recognition of such individuals – for example, through participation in awards, through publicity in established industry media etc. Others may judge the extent to which functionally equivalent circumstances exist in other industries. Where they do, the opportunity to bootstrap performance may be available. In practice, however, transaction costs, externalities and genuine uncertainty are likely to inhibit action.

Industry Associations as Change Agents

A second possibility involves industry associations acting as change agents. As already noted, industry associations were critical actors in wine industry collaborative outcomes. A dense network of nine organisations mediated collaboration. These organisations carried the basic coordinating costs in expressing the common interests and aspirations of otherwise competitive actors. Australia is fortunate in having a plethora of industry associations - albeit mostly now with a focus on external, mainly government, relationships and on industrial relations.

Associations might extend their services to members by conducting 'opportunity audits' for their industry or cluster and by offering to manage linkages to facilitate innovation and/or internationalisation. The problem of free riders would need to be addressed. But assuming this could be managed, associations might be the vehicles for undertaking audits of industry potential as a basis for defining opportunities from enhanced collaboration.

The scope of such audits is suggested in the following checklist (Table 5.1).

The issue for associations may be the stimulus to undertake the initial investments in information gathering, learning and strategy development. Initial costs would be quite high. Co-ordination problems are large. The temptation to free ride would be considerable. In the wine industry case, the tradition of collaboration was buttressed by compulsory levy arrangements for export marketing and research and development. This suggests the need for incentives to stimulate association effort, perhaps, matched by firm-level incentives to encourage buy-in.

Government as Catalyst

A third possibility would involve the State playing a catalytic role. This approach would be contrary to current conventional wisdom about the appropriate role for the State in advancing competitiveness. Such a view is based on neo-classical economic perspectives and focuses on the contribution of competitive markets to consumer well being. A variety of theories and doctrines underwrite these approaches including allocative efficiency as a norm, competitive advantage, contestable markets, information economics, agency theory, and public choice theory. This constellation is generally hostile to any active role for the State in promoting industry.

A second more eclectic family of theories has emerged in the past decade, driven partly by observed real world developments ('alliance capitalism'), and partly by dissatisfaction with what is occluded by the premises of the neo-classical paradigm. This constellation, what might be generally termed 'institutional' theory, includes a focus on the significance and impact of transaction costs, path dependence and innovation.

Table 5.1: Industry Audits Checklist

- The export potential of the cluster
- The organisation of the cluster/complex, including:
 - the number, size and focus of companies operating in the cluster or complex;
 - the range and skills of the suppliers especially subcontractors in this sector;
- The success of the cluster and any weak points as seen in:
 - the technology capacity of the cluster;
 - the R&D capacity available in the complex as a whole among the firms;
 - the R&D capacity in the public sector which is available to the private sector;
 - the efficiency of information flows between the sectors in the diffusion of existing knowledge of all the kinds mentioned in part one;
 - the adequacy of the technological transfer mechanisms in place in the complex;
- The support needed for development of training capacity:
 - the training capacity of both firms and public sector institutions in the arena at both initial and permanent education levels;
 - the level of skills available in the workforce and whether there are any shortages. If so, the audit should identify capacity to rectify those shortages;
- Environmental factors affecting cluster/complex success:
 - the presence or absence of related and supporting industries, such as supply industries or appropriate business services and problems, which may be caused by the patchy nature of the industrial structure most relevant to the complex;
 - the adequacy or otherwise of capital needed for expansion by firms of all types in the complex;
 - whether government regulations relating to the area cramp development and what would be specific desirable changes;
 - the ways in which public procurement could aid the development of the cluster;
- The ways in which public sector research can be harnessed better via cooperative arrangements with private players.

Source: Jane Marceau, Derek Sicklen and Karen Manley, *The High Road and the Low Road*, Australian Business Foundation, 1997 Chapter 11, p.5/6

It highlights the nature and new importance of location specific assets (versus the now relatively more mobile firm specific assets) and the contribution of institutions (for example, clustering) to economic performance.⁷⁶ Finally, it recognises that the presence of appropriate 'ideas, choice sets and motives' cannot be taken for granted. Institutional analysis explores conditions that precede engagement in markets by firms - indeed, they point to the conditions that are, so-to-speak, incubators of market engagement.

The institutional group of theories coincide in implying a constitutive and systemic role for the State in relation to market activity. For example, Dunning summarises potential areas of contribution to competitiveness from public policy in his elaborations of Porter's competitive diamond (Figure 5.1). These positive roles assume States retain a significant interest in industry structure – for example, for the broader, economy-wide consequences of the presence of industries that offer 'high' quality' jobs, and or, that have a high propensity to export. This view would be contested in neo-classical theory.⁷⁷

Neo-classical and institutional approaches are based on different premises and they mostly employ different methodologies. This precludes theoretical fusion or intersection. It also precludes conclusive findings about relative explanatory power.

At the operational level, however, there is potential complementarity. This is because each constellation 'fits' different dimensions or facets of economic activity. The neo-classical constellation implies attention to the quality of markets, once they are established. The institutional family focuses on the conditions necessary for the establishment of markets - or on the conditions necessary for market participation (eg. in remote markets). It incidentally includes strong public interest arguments for building a State role. This is to nourish location specific assets. In a world in which firm specific assets are relatively more mobile, location specific assets anchor firms in particular places.

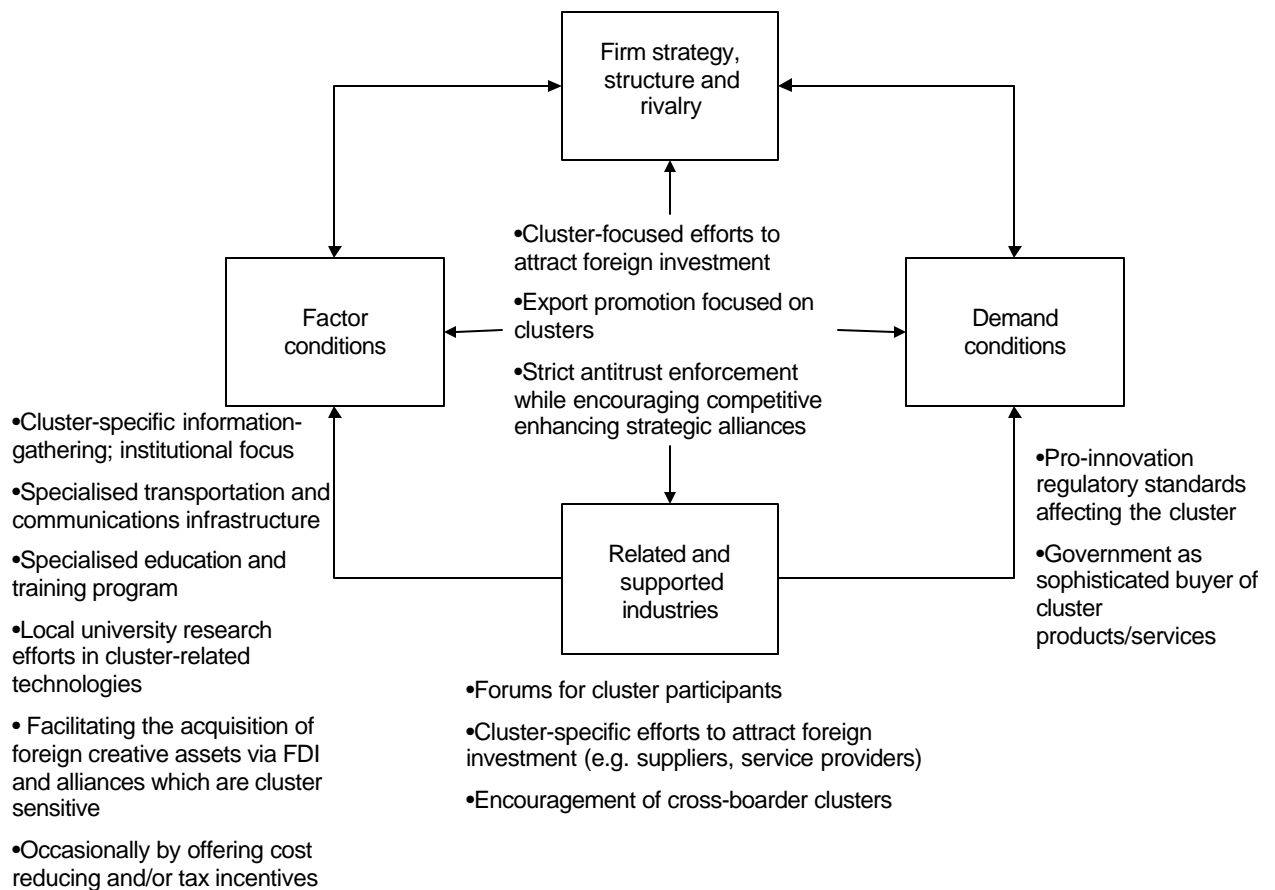
The State might play a catalytic role in industry development by offering to facilitate action by industry leaders and/or industry associations. Seed funds might be offered (on a contributory basis) for preliminary analysis.⁷⁸ Industry associations might be encouraged to play roles analogous to those of the WFA and the other specialist groupings in the wine industry. Public funds might be offered on a contributory basis to support collaborative action – for example, to develop cluster visions, based on exporting and innovation.

Figure 5.1: Role of Government in Cluster-Upgrading

⁷⁶ The Singapore government has based its current development strategy on an analysis of cluster patterns and gaps. The base document provides a model of how such analysis might be approached. Task Force Report, *The Strategic Economic Plan, Towards a Developed Nation*, The Economic Planning Committee, Ministry of Trade and Industry, Singapore, 1992.

⁷⁷ Michael Porter specifically addresses this argument in *On Competition*, op. cit., especially Chapter 6, The Competitive Advantage of Nations.

⁷⁸ In principle, there seems no reason why the added value of exporting might not be calculated on a basis analogous to that used earlier by the Productivity Commission to estimate the gains from deregulation and privatisation of public utilities. Some net present value estimates might provide a foundation for establishing incentive levels.



Source: John Dunning

Industry associations might be invited to bid for these funds. Seed funding might be provided for a preliminary audit to identify clusters with particular export prospects and with potential synergies from collaborative action. The current 'Action Agenda' program moves in this direction – but its scope is narrower and targets and incentives are less clearly specified. The initiative remains with government, not with industry groups.

Government industry policy incentives might be based on minimum levels of participation of firms in the industry. There might be specific incentives for firms who agree to buy-in. The continuance of incentives might depend on the achievement of specific targets (eg. exports). Assigning initial audit responsibility to industry associations would ensure the existence of the requisite level of industry organisation. Contributory funding would mark commitment at association and firm levels. The potential scope of an audit was suggested in Table 5.1.

If proposals passed preliminary tests, more substantial contributory funds might be made available to further develop collaborative marketing, research etc, or to link to an established support program.

The effect would be to link an industry or cluster's access to Government incentives to its efforts in strategic collaboration. Some combination of the following features might need to be demonstrated to qualify for support:

- Increased export activity;
- Increased investment in R&D or other innovative, capability-enhancing activities .

Cluster development might also be encouraged through evidence of enhanced commitment to the following outcomes:

- Greater investment in training for both management and workforce;
- Increased local sourcing;
- Employment expansion;
- Networking with others in the same or complementary sectors;
- Productivity growth.

A positive analysis and assessment might lead to the development of collaborative frameworks involving such steps as:

- Establishing a developmental strategy and detailed strategic industry objectives for export development, thus creating awareness (and motives) for expansion in individual firms and providing analysis to stimulate their planning.
- Anticipating industry requirements for skilled personnel and thus ensuring skill shortages do not hamper growth.
- Promoting generic product and process technology development. This would ensure a level of technology development greater than would be available to any single firm and one that all firms have access to, and are stimulated by, product or process innovations.
- Expanding industry promotion, marketing and brand recognition by pooling efforts.
- Enhancing product quality by establishing and monitoring industry-wide standards.

Funding bids might be made at various stages in the life of a collaborative program. At least three conditions might need to be satisfied for funds to be allocated:

- A net national benefit would need to be demonstrated. This could be in terms of criteria already established;
- There would need to be measurable performance objectives to mark particular phases of the process. A failure to meet these objectives would automatically trigger a review process; and
- There would need to be evidence of tangible industry commitment.

The contribution of the underlying socialisation in the wine industry has already been noted. In the judgement of some observers, this was a critical ingredient – an element whose absence would negate equivalent possibilities in other sectors. This issue is sidestepped in the proposals outlined above. These place government in the role of catalyst facilitator, not of primary actor or sole sponsor. Further, support is contingent on clear performance

benchmarks, based on market outcomes, what Aoki has termed elsewhere 'contingent rents'.⁷⁹ Finally, the work of the Productivity Commission, in its various mutations, indicates that outcomes can be independently evaluated. Its performance refutes arguments concerning State capture and 'rent seeking'. It shows governments are capable of independent analysis. Governments can withdraw, as well as grant, benefits.

In summary, the theory and practice reviewed in this case study suggests a comprehensive framework through which a government role in economic development might be renewed - a role that is consonant with contemporary imperatives. Historically, such a role was critical both to the development of advanced industry in Australia, and, through job creation, to the broader quality of community life. The foregoing suggests how it might be renewed - in ways that are in harmony with the emerging global economy and with innovation or knowledge-driven competitiveness.

⁷⁹ M. Aoki et al, *The Role of Government in East Asian Economic Development*, Clarendon Press, Oxford, 1997, pp. 14-17.

VI. Conclusions

There is strong evidence that the Australian wine cluster has benefited from the development of collaboration, particularly in fostering its export orientation, and its commitment to research and development. The institutions, methodologies and techniques through which this has been accomplished are all clear. Industry association structures allowed a few visionary leaders to translate their ambitions into practical programs. Fortuitous factors contributed. But industry leaders capitalised positively on the opportunities thus created.

This enquiry looked to explanations of performance to refine or augment those based on market forces and natural endowments. It considered the specific contribution of two other factors – knowledge and clustering. One aim was to show how the mobilisation of knowledge (economic learning) contributed to firm and industry success.

In the wine industry case, collaboration was the means through which knowledge enhanced competitive performance. Collaboration was the means by which knowledge of export opportunities, and of innovation, was developed and disseminated.

A second key idea emerging from this study concerns the potential power of clustering. Through linkage in clusters, the competitive strength of individual firms can be augmented through association with related and supporting firms. Michael Porter argues: ‘The cluster concept represents a new way of thinking about national, state and city economies, and points to new roles for companies, governments, and other institutions striving to enhance competitiveness.’⁸⁰ The competitive leverage or stretch derived from cluster linkage can be decisive to success at the level of individual firms.

Contemporary conditions make attention to knowledge and clustering especially salient. The most prominent of these are economic globalisation as the source of economic opportunities, and innovation as the driver of competitive success. The theory and practice that currently mostly informs policy in Australia assumes domestic competitive conditions are primary. It assumes that, if the domestic competitive regime is relatively undistorted, and if a market is generally free from regulation, participation in global markets and innovation will ‘naturally’ germinate. But this approach does not recognise the problematic character of these latter activities.

Present public policy approaches are based on theories that were developed when national boundaries were significant economic barriers, and when technological change was periodic or episodic, rather than primary and continuous. Globalisation and knowledge-based product and process development have undermined both conditions, with structural and policy implications that have only recently been recognised.

⁸⁰ *On Competition*, Harvard Business Review Books, Cambridge, Mass., 1998, p.197-198.

Although national boundaries are now much less significant as barriers to economic activity, differences of tastes and language, of political and regulatory systems remain large. This makes participation in remote markets much more problematic for individual firms, even firms that are, by Australian standards, relatively large.⁸¹ Similarly, technological development can be prohibitively expensive for individual firms; many of its phases require collaborative interactions between researchers and business. An exclusive reliance on price based relationships in these phases is prohibitive, not facilitative.

Moreover, the fact that national boundaries are relatively less significant as barriers to economic activity means firms are relatively more footloose. Cluster linkages, embedded capabilities and knowledge infrastructure thus acquire much greater importance in anchoring firms to particular regions or countries. This creates wider public interest grounds for new policy approaches. These could focus on the identification and development of capabilities analogous to those that have contributed to the competitiveness of the wine industry.

Finally, the real power of the wine industry example is not in precise imitation. It is rather in suggesting how other clusters might be encouraged to bootstrap their own aspirations, goals and performance. The rationale for such an approach is thoroughly grounded in recent developments in scholarly theory. By such means, the competitiveness of an array of Australian clusters might be developed and their contribution to broader public policy objectives renewed.

⁸¹ For example, in the wine industry, the largest Australian company, Southcorp, ranks 13 in the top twenty (by sales). BRL-Hardy ranks 16th and Mildara Blass 18th (Rabobank Survey, May 1999, p.11).