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Innovation lock-in: unlocking research and development path dependency in the Australian wine industry

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Abstract

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Introduction

Between the early 1980s and the new millennium, the Australian wine industry had transformed itself from a domestic-oriented, cottage-style industry into a leading producer, exporter and innovator of table wine. The centralization of resources and funding, together with a nationally focused R&D program, was a model that worked exceptionally well in this transformation. It united a fragmented industry with disparate objectives and markets to create a growth organization focused on a single operating paradigm – that of 'Brand Australia' (GWRDC, 2004). The foundation of 'Brand Australia' was a blended wine product targeted at the 'popular-premium' segment of the market. It was technically faultless, fruit-driven, and provided value for money. The industry's national R&D program delivered this product consistently to a market in which it was rapidly gaining share and within two decades Australian wine dominated the popular-premium price points in both the UK and US markets (MacQuitty, 2006).

Over the last six to seven years, however, a very different wine landscape has been emerging. A dramatic escalation in merger and acquisition activity within the global industry is creating a new operating paradigm. Compounding industry rationalisation at the domestic level, international mergers and alliances have undermined traditional boundaries, rendering national strategies less than effective (Aylward, 2005). Once national icons in both New and Old World sectors may now be subsidiaries of international conglomerates. Examples of this include California's Beringer Wines being swallowed by Australia's Fosters Group, and France's Pernod Ricard consuming Australia's Wyndham Estate as well as Britain's Allied Domecq and New Zealand's Montana Estate. On an even larger scale there is the US giant Constellation Wines which has absorbed Australia's BRL Hardy, Canada's Vincorp, California's Mondavi, and 40% of Italy's Ruffino Wines while establishing a distribution alliance with France's famous Rothschilds (Sands, 2006).

The scale of this rationalisation has largely been in response to the 'commodification' of wine. Economies of scale, streamlined distribution, multiple production sites and geographically diversified vineyards and markets are all ingredients in what has become a global 'wine lake'. A firm such as Constellation, for example, can source grapes and wine from its Canadian subsidiary to service bulk and popular-premium price points, from its Australian subsidiary to service popular-premium and super-premium price points and from its Californian subsidiary to service the super-premium and icon price points. Similarly, it may use its Italian and French connections to service primarily European markets while it orients its Australian, Canadian and Californian subsidiaries to service New World markets, or in fact, cross-subsidize deficiencies in one market with surpluses from another (Sands, 2006). Such flexibility is critical to a firm of its size, and, of course, ensures competitive advantage.

What this flexibility also demonstrates, however, is the extent to which the Australian and other national wine industries have become subordinate to global forces. Once simple operating paradigms structured along national agendas and priorities are now subject to a myriad of competing and often conflicting pressures. These pressures also require rapid, flexible and differentiated responses, particularly in the arenas of R&D extension, branding and distribution.

The Global-Local nexus

Paradoxically, the continuing globalization of the wine industry has, in turn, created nexi of local and regional linkages. While national agendas face at least partial ‘decommissioning’, local and regional wine clusters have been rediscovered as providers of the differentiation now being demanded (Taplin, 2006). Increasingly educated consumers are graduating through a series of rising price points and demanding heritage and a product story. They are also demanding a noticeable departure from the blended, somewhat nomadic wine styles that flood the popular-premium price points (Wittwer, 2006). The net result is a product that provides a clear point-of-difference, but there is far more to the story (Sanders, 2005). Local and regional differentiation begins with region-specific R&D, branding, infrastructure, marketing and distribution.

Regional wine clusters within the Australian industry should be ideally placed to navigate the global wine landscape. In a number of cases they have developed strong brand images through the pursuit of wine quality and consumer-driven styles. Firms within these clusters are attempting to target niche markets in both on-and off-licence segments. Through a critical mass of regulatory bodies, suppliers, growers, funding agencies and the wine firms themselves, the most developed regional clusters are securing a high level of infrastructure and integration. In addition, the ability to secure flexible distribution channels has long been a success story within New World wine clusters (Aylward, 2004, 2006a).

Emerging innovation lock-in

Ironically, however, it is Australia's *historical* success in R&D that is now hampering the drive for differentiation. This paper will argue that the industry's previous success in delivering a *national* R&D agenda has created a path dependency from which stakeholders are now finding it difficult to deviate (Aylward, 2006a). Moving from a centralised operating paradigm to one of multiple levels and nodes has proved difficult for such a culturally homogenised industry. Furthermore, forms of innovation lock-in and inertia are now emerging as a response to discordant priorities between regional wine firms and the industry organisations by which they are serviced (Aylward, forthcoming; Croser, 2006).

In line with their mandate, the national industry organisations continue to prioritise and fund R&D extension along national pathways. In terms of oenological advances, viticulture management, quality standards, branding and product development, the agenda is most often set using generic national benchmarks and based to a large degree upon the requirements of Australia's major wine firms (Interviews, 2005). Even the recently established regional extension programs draw inevitably on the expertise of central bodies and personnel due to their centralised control (Grape and Wine Research and Development Corporation, 2005). While regional associations are in existence and should logically manage these regional R&D priorities, their inability to access central resources means they also lack the personnel and expertise required to run these programs. In addition, very few regional representatives sit on the central decision-making committees.

The 'voice' of regional petitions in many cases is simply not heard. When it *is* granted attention, the response is often an inappropriately *generic* one. The national 'Brand Australia' approach to internationalization of the wine industry remains focused on satisfying the need for product consistency and value within the popular-premium price points. The approach of wine firms to this same internationalization is increasingly one of single-vineyard, differentiated and regionally-branded products that satisfy growing demands within niche price points of the more developed markets. This 'gap' between what is requested and what is supplied will continue to widen. While ever the two main stakeholders – industry organisations and firms – perceive and respond to different pressures, their 'gap' in priorities will increasingly tend towards a unique form of innovation inertia.

Using empirical data from a recent industry-wide survey, the paper will highlight the discord in these imperatives and suggest that in the quest for greater regional identity, niche production and targeting of higher price-points, localized/regionalized R&D extension is a critical pre-requisite.

The Australian wine industry's current innovation landscape

In 2006, the Australian wine industry has approximately 2000 participating firms, with 166,000 hectares under vine producing 1.4 billion litres of beverage wine. It is the world's fourth largest exporter and dominates the popular-premium price points in the two largest wine markets - the UK and the USA - as well as representing approximately 8% of the global wine trade (Winetitles, 2006).

Structurally, the industry is populated by a small number of large conglomerates and approximately 1,980 micro, small and medium-sized firms. These firms are concentrated in a number of regions within four of Australia's states – New South Wales, Victoria, Western Australia and Victoria. The regions of South Australia make up what is often referred to as the industry's dominant wine cluster (Aylward, 2005). Infrastructure and resource planning within the industry is highly centralised in comparison to other New and Old World wine industries. The Grape and Wine Research and Development Corporation (GWRDC) is at the centre of this structure as the industry's intermediary body, that collects R&D levies and government funding, determines R&D priorities, resource allocation, and ultimately, industry vision. There is also the Australian Wine Research Institute (AWRI), which conducts the majority of the industry's research; the Cooperative Research Centre for Viticulture (CRCV), which conducts viticultural research; the Australian Wine and Brandy Corporation

(AWBC), which controls information, promotes and regulates the industry; and the Winemakers' Federation of Australia (WFA), which sponsors strategic and promotional issues (Winemakers' Federation of Australia, 2006). These, together with a number of other national organisations are located within the South Australian wine cluster (Winetitles, 2006).

In terms of innovation, the industry's centralisation was a key component in its transition from domestic to international status. Industry organisations such as the GWRDC, the AWBC and the WFA have been key players in the industry's '2025 vision'. This original article of policy and operation, introduced in 1995, focused on growing Australia's exports in quantity and quality through the national extension of R&D (Grape and Wine Research and Development Corporation, 2004). It was implemented in a period of embryonic internationalisation for the industry and has become a mandate for these organisations. As a result, vision and response to changing environments is determined by a mantle of national rather than regional priorities. As mentioned, these priorities are increasingly in discord with those of a growing number of firms whose mandates dictate differentiation within mature, discerning markets.

Theoretical Framework

Interpretations of Lock-in or Inertia

There are many interpretations of lock-in/inertia. Of the more pronounced theories, is that offered by Hannan *et al*. (2004) who define inertia as "*a persistent organizational resistance to changing architecture*". They argue that structural and architectural inertia have deterministic qualities; that they emerge through a Darwinian type of natural selection; and that the longer the organization survives, the more static it becomes. Maintaining an approximate status quo saves organisations from exposing themselves to abrupt variations or directional change and thereby reduces the risk of mortality (Hannan & Freeman, 1984).

The derivative argument is that inertia maintains organisational linkages, internal dynamics, hierarchical and operational legitimacy, as well as structural arrangements that have evolved over time. If substantial internal or external pressure is applied to any one of these factors an uncertain path is created (Hannan *et al.*, 2004; Ruef, 2004). Theorists such as Greenwood and Hinings (1996) contend that the institutional environment, with its cultural, social and business 'norms', applies an architectural 'straightjacket' to the average organization. Breaking from such a straightjacket may expose the organisation to cultural isolation or 'ex-communication', which again increases the risk of mortality. A further degree of complexity is added by DiMaggio and Powell (1991) who contend that highly structured organisations provide a context within which efforts to deal with uncertainty in a rational manner invariably leads to greater uniformity. Rational decision making is a value created by the environment within which the organization operates and one that inevitably encourages homogeneity as the organizational environment evolves.

Brown (2002) is less sympathetic to this theory. He argues that a lack of change is equally detrimental to an organization and that inertia can and does create significant liability. Conservative action in the face of change may protect the organization in the short-term, but by not implementing the change required to compete within new and changing environments it is exposed to often overpowering pressures. However, Brown (2002) also contends that when an organisation makes a radical and successful change, others tend to follow and over time institutionalise that change. This not only creates clear pathways for future change, but also helps eliminate resistance to that change.

The theory is reinforced by Genschel (1997), who states that: "*The avoidance of disruptions in the near future may lock actors into developmental pathways which lead into dead ends, and thus cause disruptions in the distant future".* Further, organisations that favour lock-in or inertia at a time when their industry sector may be experiencing radical change create an environment of discordant operating paradigms.

The Innovation Perspective of Inertia

Embedded within the organizational framework is the innovation-based theory of inertia (Pierson, 2000). Due to what Anderson (2005) refers to as the co-evolution of technology, institutions and organizations, with institutions providing the 'background conditioning' for innovation, the emergence of inertia within this domain is almost pre-determined (Lundvall, 1988). When industry participants follow conservative organizational pathways in order to limit various forms of risk, their structural, behavioural and innovative frameworks tend to imitate this conservatism. Within the innovation domain, this is referred to as *lock-in* or path dependency. Firms, organizations and industry sectors can be prone to a condition whereby previous innovation success creates habitual pathways. The more historically successful the industry and the more pronounced its operational pathways, the more risk-averse its frameworks and the more likely the legacy of *lock-in* (Ditter, 2005).

Innovation lock-in, while offering a veneer of protection to existing systems in the shorter term, tends to create barriers to more sustainable innovation (Foxon & Pearson, 2006). The argument by Pierson (2000) that institutions are ‘particularly prone to increasing returns’ reinforces the fatal attraction of this lock-in and the cultural corrugations that become established. Once a successful recipe has been found, no matter how dated that recipe eventually becomes, institutions are reluctant to experiment elsewhere. This bias is probably most applicable to *process* innovations such as R&D extension, wherein established routes, mechanisms, personnel, methods and models of extension that have supported innovative leaps in the past create habitual pathways. These pathways become entrenched within the institutional culture of the industry and create their own legitimacy through continued use and acceptance. Deviating from such pathways can be problematic. It can be expensive, the risks of failure are greater, and the returns are unpredictable (Hannan & Freeman, 1984). A simple analogy is the desire to remain on a well-trodden walking track rather than explore the virgin forest on either side. Cutting a new path through the forest may indeed lead to more interesting places, but the effort involved is considerable. Although the well-trodden path provides no new views or points of interest, it is easy and predictable. In this lies the veneer of protection and security.

By not deviating, however, R&D pathways of extension in any evolving industry implicitly fail to service all but a homogenised clientele (Ditter, 2005). As such, differentiated users of R&D with differentiated requirements represent an increasingly dissatisfied customer base. As they react to disparate markets that demand unique products from niche production systems, the underlying R&D system fails to support their needs. The R&D imperatives of the service provider and those of its nonhomogenised clientele become dislocated. It is this dislocation or gap in industry imperatives that the paper refers to as *inertia*.

Aims of the Paper

Using data from 165 firms within the Australian wine industry the paper will report on the perceived importance of regional R&D extension in the development of differentiated, locally-branded products. It will also report on perceptions of an emerging dislocation between wine organizations' R&D imperatives and those of the firms they service. The paper's hypothesis is that in the industry's current climate of complex paradigmatic shifts from national systems to those reflecting global-local nexi of production, distribution and marketing, there has emerged an industry-level R&D inertia that transcends simple organizational or institutional domains.

Deriving from this hypothesis is the argument that for long-term sustainability and reputation the Australian wine industry must organize its R&D extension to reflect the growing demand for higher price point, regionally branded products.

Empirical Methodology

The current study focuses on the industry's R&D extension (innovation) and its potential barrier to regional, differentiated identity. The role and effectiveness of the industry organizations is, therefore, addressed in the study's user survey, where firms are asked to comment on a range of industry R&D initiatives and their implications. The survey was conducted between June 2005 and February 2006, was perception-based and exclusively used responses from 165 micro and SME firms. The study has also drawn on findings of the author's previous empirical studies to provide context and substantiation of findings (Aylward, 2004, 2005, 2006a).

Wine firms, as the primary users of the industry's R&D, provided the survey sample for this study. A randomised, size-stratified methodology was chosen for this sampling (Harrison *et al.*, 1996). Care was taken to ensure a similar number of firms from each of the four chosen states – New South Wales, South Australia, Western Australia and Victoria – were captured. In addition, only exporting firms were included in the survey and again, care was taken to include equal representation from the diverse regions within each state. In each case, either the CEO or production manager was the respondent. Surveys were conducted by phone, so a high response rate of approximately 75% was achieved. In addition to the survey instrument, in-depth interviews were carried out with a sub-set of firms whose initial survey responses provided valuable qualitative data that needed further investigation.

Findings

Establishing a context for the paper's hypothesis, surveyed firms were initially asked about the generic importance of 'regional identity' to their firm's marketing and operational success, as well as their product's reputation in domestic and international markets. Overall, 91% (148) of firms believed that this identity was either *critical* or *very important* to these activities. A number of those involved in the in-depth interview section of the study commented that regional or local identity is a notion with which New World industries are still coming to terms, but one that is culturally embedded within most European wine industries. Their view is that the development of regional infrastructure with localised planning, coordination, distribution and marketing require an entirely new thinking process. Wine needs to be understood as a value-adding process that blends art and science in a unique and highly desirable way. The Europeans, they argue, understand this and practice it to their advantage, while most New World industries still view wine with an industrialist mentality as little more than a commodity.

Reinforcing this view, only 33% of surveyed firms believed that industry organisations within the Australian wine sector placed importance on regional identity or differentiation. The perception was most apparent in the isolated regions of Western Australia, where a mere 23% of firms believed that industry organisations were servicing or even understanding their interests.

Underlining the call for greater regional identity is the growing pressure to create a point-of-difference in product and marketing. Global distributors and consumers are becoming more sophisticated in their approach to wine and are looking beyond the Australian guarantee of consistency and value for money. There is pressure to produce and market wines with individual stories, heritage and a legitimate claim on *terroir* (Brook, 2000; Croser, 2004). In terms of sustainability it is also critical for the Australian industry to discard its reputation for bland 'industrial' wine by targeting higher price points with low-yield, high-quality products that are individually crafted. Of the surveyed firms, 87% claimed that such differentiation was integral to their sustained competitiveness. An equal number believed it was also integral to the industry's sustainability. Further, they believed that it was inextricably linked to regional and local identity. Yet this 'point-of-difference' is currently antithetical to the generic 'Brand Australia' approach being adhered to by the industry organisations with which, it is interesting to note, only 26% of firms are in agreement.

Regional Extension of R&D or Innovation Lock-in?

According to the surveyed firms the national *Brand Australia* campaign is intrinsically linked with R&D priorities and therefore has significant implications for extension of that R&D. Legislated under the articles of the GWRDC, the industry's R&D is formulated to achieve 'greatest return on investment'. In other words, these guidelines are dictated by the most common need, the ability to undertake the research and greatest return in outcomes (Grape and Wine Research and Development Corporation, 2004). These guidelines reflect the industry's generic marketing strategy. The focus is primarily on national viticultural and oenological management in the pursuit of a product that is disease free, is of consistent quality, is technically acceptable, is blended from multiple regions, represents value for money, and is of instant, age-free appeal. Such a product appropriately targets the popular-premium price points that Australia dominates and, according to the industry bodies, represents the best return financially (although much of that return belongs to overseas interests).

The strategy does, however, do little for building Australia's reputation as a fine wine producer or supplier. The majority of surveyed firms believe that in order to create differentiated products, differentiated R&D is essential. Whether it be canopy management, disease control, soil analysis, irrigation, pest management or rootstock development, firms argue that these are region-specific problems requiring region-specific solutions. Instead, 'solutions' tend to come in a pre-fabricated format that often fails to address individual concerns but *does* reflect classical lock-in characteristics (Park & Lee, 2004).

Despite the fact that appropriate R&D extension is viewed by operators as a pre-requisite to the creation of regionally branded networks and as an indicator of the industry's research breadth, only 21% believed that the industry organisations were addressing these issues. As one firm CEO stated, "There needs to be more industry consultation prior to setting agendas, from everyone, not just the big boys". This sentiment is reinforced by innovation theorists such as Boschma (2004), who contends that there is substantial risk of institutional lock-in when policy reflects the interests of the dominant players rather than an open system where it is directed by new players and economic renewal.

It appears that this sentiment was fairly uniform among firms, with widespread calls for decentralisation of R&D. Currently, the AWRI, which conducts the vast majority of the industry's research, is based in Adelaide, at the heart of the South Australian wine cluster. This centralisation of research of course underscores the generic, one-size-fits-all approach and perpetuates the discordant imperatives between organisations and firms. It also fits neatly within Park and Lee's (2004) 'exploitation' model, where the orthodox technological framework is retained at the expense of a possibly more compatible, but exploratory one.

A majority of firms (70% of those surveyed) suggest that a more appropriate research structure would be one in which the AWRI hub remained at Adelaide in the dominant wine cluster, but with appropriately funded and resourced 'nodes' within each of the industry's other major wine regions. In fact, 76% of the surveyed firms believe participation in these 'regional nodes' was *critical* to their competitive advantage, an issue that will be elaborated on in the *discussion*.

Discussion

Regions and reputation

Supporting regional R&D extension is about providing a research foundation to regional production, branding, marketing, distribution and most of all, identity. It is, therefore, also about supporting those operators who follow the path of differentiation and sell into the higher super-premium and icon price points where a wine's heritage and 'story' are essential ingredients (Sanders, 2005). While the higher price points represent a far smaller percentage of the overall market, it is the sector, as Brian Croser (2006) states, in which reputations are made. Such reputations serve not only the individual firm or even the region, but the entire industry. Industries that dominate these price points are recognised as producing high-quality, 'luxury' brands (Brook, 2000).

The 'reputation-making' strategy is evident in France's Bordeaux region, which is known internationally as producing the world's finest wine. The irony is that of Bordeaux's 20,000 producers, less than 60 are AOC classified and produce wines in the icon price points. The remaining producers create often mediocre products that sell in the popular-premium and bulk wine price points (between $1-$12 per litre). It is the 60 AOC producers, however, that have given Bordeaux and France their fine wine reputations (Echikson, 2004). While New World producers such as Australia are dominating the popular-premium price points of international markets, their neglect of the higher categories has earned them a reputation for producing *only* popular-premium wine. This lack of differentiation has created rigid perception barriers so that currently, as the popular-premium price-points become further exposed to a global surplus, Australian wine firms are finding it almost impossible to break into the higher, niche categories. In marketing terms this is referred to as 'upward stretch', reflecting the difficulty in convincing consumers that a reputation at one product quality level can be applicable to product quality at a much higher level.

The Non-Regional Approach

Generic marketing strategies such as 'Brand Australia' serve to reinforce these barriers by indicating to the world that all Australian wine comes from the 'same barrel'. Compounding the perception is the industry's apparent desire to remain focused *exclusively* on the popular-premium category despite its increased competition, reduced margins and capacity to undermine reputation. For example, the latest industry figures confirm that export value continues to drop in this sector. Although the Australian industry has exceeded targets in volume exported, dollar value has fallen from US $13.87/gallon in 2001 to US $11/gallon in 2006. Further, in the fine wine category of US $21/gallon or more volume has dropped by a significant 41%. As Brian Croser (2006) so eloquently states:

"*…both Australia and America eventually need to establish recognition of their fine wines at the same elevation and to the same extent as France. Faced with a supply induced global race to the bottom, success in the branded commodity wine business is not enough to sustain a mature profitable position as a supplier of wine in the global wine business*".

Industry organisations, however, still see this popular segment as producing the greatest return for the investment dollar. What must be questioned is a strategy that continues to focus on an increasingly difficult price-point while neglecting the substantial ‘returns’ from an image of quality, differentiation and fine-wine reputation that only the high-price points can deliver. Such discordant strategies and their R&D requirements contribute to the inertial tendencies now being witnessed (Interviews, GWRDC & WFA reps, 2005 in current study).

Direct and relevant comparisons can be drawn between the current ‘Brand Australia’ strategy and a ‘mass market’ strategy adopted by one of Australia’s largest wine firms, between the 1970s and early 1990s. Although this firm had a long history of wine-making and renowned expertise, it chose in this period to focus exclusively on satisfying the mass market, namely bulk and popular categories. For two and a half decades it produced large volumes of acceptable but ‘industrialised’ wine for the mass market at home and abroad. The product was cheap and reliable, but only ever considered appropriate for parties and less discerning clientele. The firm, however, never pretended to be anything other than a mass-market supplier and it was a strategy that remained profitable throughout the Australian industry’s early years of maturity. The scenario was very similar to that of the industry –level approach today; to focus exclusively on that segment of the market currently delivering the greatest returns.

By the mid-1990s, the international wine industry and its clientele had matured considerably. Bulk wine was no longer the preferred beverage of the masses, not even for parties. The firm’s sales were falling sharply, margins were being squeezed and profits were shrinking. The new strategy was to move substantially ‘upmarket’. The firm's years of expertise and knowledge were drawn upon to create good-to-excellent wines of distinction for the premium and super-premium categories. Production was reconfigured from mass production of bulk wine to smaller, batch lots of the new product. After ten years of this 'new' strategy and despite making excellent wines that have attracted many awards, the firm still struggles to shake its former reputation. Consumers have memories of what the name once signified and to some degree still stigmatise the products. Only through perseverance and intense marketing campaigns is the firm slowly bringing about a change in consumer culture and acceptance. At an industry level, many argue that the Australian Wine sector is repeating this flawed strategy by sacrificing long-term reputation for short-term profit, even as other New World industries make the transition (Croser, 2006; Sydney Morning Herald, 2006). It is a strategy, of course, which closely represents Genschel's (1997) inertial model: "*…the avoidance of disruptions in the near future may lock actors into developmental pathways which lead into dead ends.*"

Branding Advantages

A recent study of the Californian wine industry, for example, discovered that even in the strongly branded Napa Valley region, which critics often refer to as the 'Walled City of Napa', producers are changing their strategy to target the higher price points. As one CEO in the study stated:

"*…I have concentrated on improving the quality, raising the price and building our reputation as a high quality producer of some different varietals. I wanted to avoid us falling into the trap of focussing too much attention on satisfying the low price consumer; instead moving us more upmarket where our wines are better positioned*" (Taplin, 2006).

Confirming the value of a differentiated, high value approach is a 2006 report highlighting the fact that while the majority of wine industries are suffering from severe over-supply, the 1st growth (icon) producers of Bordeaux are experiencing the highest demand for many years. The latest figures show that *futures* buyers are requesting 2,500 cases of 2005 Chateau Latour, Chateau Rothschilds and Haut Brion at approximately $6,500 a case and receiving fewer than 500 cases due to excessive demand (NineMSN, 2006). This trend also applies with the new wave *garagistes* of Bordeaux, who have adopted methods antithetical to New World industries. Specifically, these include over-pruning, extracting ultra-low yields, extending the ripening period, hand-picking, hand-sorting, ageing in up to 200% French oak (cellaring in one barrel, then a second, to increase the oak flavour) and ultimately, hand-crafting their wines (Echikson, 2004). The result is a relatively small production of elegant wines that have received detailed attention from the vineyard to the bottle and may command prices of between $5,000 and $7,000 a case. More importantly, however, is the reputation that such wines and their makers are attracting and the localized branding that results. This is where the long-term, sustained value lies (Croser, 2006).

A model for region-specific R&D in Australia

A key factor in regional identity is the product's reputation for quality and differentiation - a reputation that distinguishes the product and the region from the rest of the market. Always underlying this reputation is the research and development that feeds into the creation of that product. As Croser (2006) claims, the Australian wine industry is *"under greater pressure for innovation and export market* *development"* in the face of oversupply. According to the wine firms themselves, this 'development' must take the form of region-specific extension.

An interesting model for such extension is one that was cited in the current study's *findings* that actually builds on current innovation frameworks and infrastructure. As it is an extension of an existing model it also reduces the element of perceived risk that is currently *locking the industry* into defined R&D pathways (Aylward, 2006b). Specifically, the model would provide for a framework beyond the Australian Wine Research Institute which conducts approximately 90% of the industry's applied research and a significant amount of its basic research.

This extended framework would involve 'hub and spoke' extension, in which the AWRI would receive industry research funding as it does now, but rather than allocating from a central pool, would re-allocate to regional winemaking and grape-grower associations. Allocation would be determined by the region's firm population, its perceived need, the type of research requested, the strength of the cluster and branding and the perceived capacity of the firms to absorb the R&D (Visser, 2004). The prescribed funding allocation would include resources for appropriately qualified personnel, education, and infrastructure at each of the association sites, which would, in effect, become *R&D nodes*. These nodes would be responsible for regional R&D governance, as well as the management of R&D supply and demand. Their interests would be in alignment with those of their subscriber firms and the region in which they are located. There would be substantially less duplication in R&D *type* as the nodes would operate according to regional, rather than central mandates.

This type of model would ensure a number of additional improvements. First, R&D extension would become more flexible and responsive, as intimate collaboration between the nodes and their subscriber firms would allow for constant adjustment to R&D flow. Second, the decentralisation to node level would allow greater 'ownership' by subscriber firms and more interactive decision-making – an issue that registered strongly in the study's survey. Third, the two above improvements would create greater efficiencies in R&D delivery and enhance R&D planning ability for regional initiatives. Most importantly, the R&D node initiative would support regional branding and identity to a much greater extent than exists currently. This would in turn disrupt the path dependency of the industry's innovation framework, thus reducing a tendency towards *lock-in* or inertia. The primary objective of such a model, and the measure of its success, would be a re-alignment of industry organisation and firm imperatives. Only by reducing the inertial 'gap' between these imperatives can R&D extension truly contribute to competitive advantage at price points other than that of the popular-premium category.

Concluding remarks

We are currently witnessing the emergence of a new and very differently configured wine landscape. It is a landscape that transcends national borders and is punctuated by international wine conglomerates. In what would seem a paradox, these conglomerates have, at one level, homogenised much of the industry product within the bulk and popular-premium categories. They have streamlined distribution, created flexible production points, purchased geographically diverse vineyards and standardized oenological and viticulture practices. At another level, their transcendence of national borders has created unique and previously unlikely nexi of global/local interests.

As national borders and, therefore, national approaches become less relevant, regional wine clusters are responding directly to these global pressures – specifically pressures for differentiated products at the higher price-points in world markets. While a homogenised product is demanded and easily satisfied within popular price categories it is the more discerning price points within mature markets that require the differentiation, heritage and stories that many regional SME producers can supply.

Regional clustering provides the critical mass which the firms need for distribution channels and shelf space. But just as importantly, it allows for more streamlined supply chains, superior networking, knowledge spill-over and most of all, branding of the region and its differentiated products. What these regional clusters currently lack, however, is the region-specific R&D extension that would support such advantages. While it appears that wine firms across major regions are reconfiguring their production, marketing and distribution operations to align with shifting paradigms of the global market, their industry organizations are responding to discordant imperatives. These imperatives derive from the industry's pre-fabricated '2025 vision', which mandates a national approach to branding, R&D, marketing and distribution. The resulting inertial gap between the two sets of imperatives threatens to undermine the industry's capacity for change. Without change, the Australian wine industry will lock itself into what Brian Croser (2006) describes as a 'race to the bottom'. The potential to create a truly differentiated product will be lost for many, if not most, producers as their growing reputation for commodity wine precedes them. If imperatives are aligned and change allowed, however, the Australian wine industry may recapture its ability to surprise the world.

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