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THE IMPACT OF A LEARNING CULTURE ON ORGANISATIONAL CHANGE

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Introduction

Organisational learning and organisational change are often addressed in the literature as separate topics, with limited discussion of empirical research into the impact of a learning culture on organisational change. In addition, the terms “organisational learning,” “the learning organisation” and “learning culture” are used extensively, and while having much in common, there are subtle differences. Organisational learning principally focuses on the learning process, emphasising on the acquisition of knowledge and skills within an organisational or workplace context. However, references to the learning organisation focus more on the characteristics of an organisation that support the learning of its members. The term “learning culture” is generally used as a sub-set of the broader concept of organisational culture, and focuses on attitudes, values and practices within an organisation that encourage and support the learning of the members of an organisation.

While the link between the concepts of organisational learning and organisational change has been recognised, empirical research into the nature of this link is generally limited. Definitions of organisational change often include the term “culture.” However, few writers make specific reference to the role of a learning culture in the process of change. For example, Cummings & Worley (2009) refer to organisational change as a complex process involving culture, politics, and policies and procedures. On the other hand, Huy (1999) recognises the role of learning in the process, arguing that change comprises the three dynamics of receptivity, mobilisation and learning.

This paper reports on research that investigated the impact of a learning culture on organisational change in manufacturing firms in the Riverina Region of New South Wales. It reviews the literature on the influence of a learning culture on organisational change, beginning with an overview of the concepts of organisational learning, the learning organisation, learning culture, and organisational change, to identify key issues and questions to underpin the research. The project uses a qualitative research approach in a sample of small to medium-sized regional manufacturers to investigate the impact of a learning culture within the firms on organisational change, showing that in the companies surveyed, the existence of a learning culture did have a significant influence on change, and that it generally occurred as described in the literature.

The paper concludes by drawing attention to the need for further research over a wider range of organisations to determine the extent to which the factors identified impact on organisational change, and whether there are other learning culture factors that influence the nature of organisational change.

Organisational Learning

Organisational learning has been defined as a process of acquiring knowledge and skills, developing from individual and work experiences, training, following exemplars in an organisation, coaching, and through apprenticeship and mentoring programs (Antonacopoulou 2006a). It entails a change in organisational culture through the development of new attitudes and behaviours (Chan & Garrick 2003). Learning occurs within an organisation at both the individual and collective level within the boundaries set by organisational processes (Casey 2005). Organisational learning requires managers and employees to re-align their aspirations, actions and behaviour with the new organisational
goals, and the values and assumptions that underpin them (Chan & Garrick 2003). Organisations invest in staff development to facilitate openness to continuous learning and change, and to enable them to perform to organisational expectations (von Krogh et al, 2000; Chan & Garrick 2003).

Organisational learning facilitates individual learning, forms transparent communication and cooperation, and develops trust among staff (Aksu & Ozdemir 2005). Antonacopoulou & Chiva (2007) argue that it is a dynamic and complex process bound by the ‘social forces’ which work to determine the nature of interactions within a system. As a ‘social process,’ it is influenced by elements such as organisational structure, information, communication and control processes (Pawlowsky, 2001). These elements shape the way in which individuals within an organisation learn (Antonacopoulou 2006a).

Chiva & Alegre (2005) link organisational learning to knowledge, arguing that is an ‘efficient procedure for the processing, interpretation and improvement of representations of reality.’ Antonacopoulou (2001) argues that organisational learning is the liberation of knowledge through self-questioning. Furthermore, Schwandt (1997) supports the link between organisational learning and knowledge, defining the former as “a system of actions, actors, symbols and processes that enables an organisation to transform information into valued knowledge, which in turn increases its long-run adaptive capacity.” suggesting that it is also a significant facilitator of business sustainability (Chinowsky & Carrillo 2007). In addition, organisational learning entails the development and application of ‘intellectual capital,’ which in turn improves organisational efficiency (Bates & Khasawneh 2005).

Casey (2005) defines organisational learning as a four-stage process involving adaptation, goal attainment, integration, and pattern maintenance. Adaptation entails individuals understanding the need for learning in order to generate new information, with the organisation obtaining input from individuals on how to meet this need. Goal attainment is a process of action and reflection, involving the determination of learning goals, and the translation of organisational goals into personal goals by individuals. This stage is followed by integration, which involves the dissemination and diffusion of organisational objectives, enabling individuals to understand their role within the larger system. Learning is then internalised as individuals engage in understanding the new ideas, and incorporate them into the framework of existing knowledge as a form of ‘pattern maintenance,’ where individuals make sense of the information. Hence, each stage of organisational learning incorporates a different type of information processing (Casey 2005).

**Learning Organisations**

A related term in the literature to organisational learning is the ‘learning organisation.’ The latter term differs from organisational learning in that the focus is on the organisation itself, rather than on the learning process within organisations. A learning organisation is defined as an organisation that ‘is skilled at creating, acquiring, sharing, and applying knowledge, and embracing change and innovation at all levels, resulting in optimum performance and maximum competitive advantage’ (Chinowsky & Carrillo 2007). Similarly, Ho (1999) argues that a learning organisation requires the input of all members. Learning organisations share a common set of values and beliefs on the importance, dissemination and application of learning. These shared values and beliefs function to mould the perceptions and behaviour of individuals, generating new knowledge and developing new skills during the process (Bates & Khasawneh 2005).
A learning organisation has specific characteristics pertaining to leadership, processes, infrastructure, communication, education and a specific type of organisational culture described as a learning culture. While the latter characteristic is an integral part of a learning organisation, it will be discussed in more detail in the following section. In a learning organisation, leadership plays a significant role, combining management processes and technical infrastructure to create a vision of how an organisation can develop its capacity to learn. Arrangements are implemented to ensure knowledge flows across the entire organisation, where both management and employees are committed to a process of continuous learning, resulting in the creation of new knowledge. A learning organisation supports, promotes, and rewards learning, as it is viewed as a critical factor in improving the operations of the organisation (Chinowsky & Carrillo 2007). Learning organisations are described as being open and organic systems, using an adaptive approach to deal with a constantly changing environment (Daft 2001).

**A Learning Culture**

A learning culture differs from organisational learning in that it is defined as ‘the existence of a set of attitudes, values and practices within an organisation which support and encourage a continual process of learning for the organisation and/or its members’ (Johnston & Hawke 2002). Organisational learning is said to be enhanced through the establishment of a learning culture in an environment where leadership supports the learning mechanisms (Casey 2005; Chinowsky & Carrillo 2007). Organisational learning is frequently influenced by uncertainty in the operating environment (Casey 2005). Risk, change and development are encouraged in a learning culture where there is an underlying notion of equality, the sum of individual contributions being considered more important than that of the single individual (Daft 2001).

Bates & Khasawneh (2005) argue that organisations with a learning culture support the transfer of learning, value learning as a strategy for adapting to change, and support innovation by constantly analysing the business climate and environment. They have a clear approach to learning, are open to contradictory information, avoid repetition of mistakes, take action based on knowledge, and retain important knowledge regardless of key people leaving the organisation (Garvin 2000). They also utilise learning from all employees to increase organisational performance, and to facilitate the organisation’s competitive advantage (Dymock & McCarthy 2006; Yeo 2005). Bates & Khasawneh (2005) found a strong correlation between learning culture and performance outcome expectations, performance self-efficacy and feedback.

A learning culture is part of the broader concept of organisational culture which is described as the collective understanding of members of an organisation (Ravasi & Schultz 2006). Organisational culture becomes manifest in organisational artefacts such as symbols, heroes, rites and rituals, myths, ceremonies, and organisational sagas and the underlying meanings attributed to these artefacts (Detert et al. 2000; Bolman & Deal 2008). An organisational culture that fosters learning enables specialist knowledge to be translated directly into policies (Kieser & Koch 2008) as it is integrated into organisational systems and processes (Pool 2000, Daft 2001). Organisational culture is formed by social means, and determined by individual interactions (Detert et al. 2000).

**Organisational Change**

Organisational change is a complex process involving culture, politics, and policies and procedures (Cummings & Worley 2009, Reissner 2005, Bate et al. 2000). Organisations are subject to internal and external, planned and unplanned, frequent and diverse change (Casey
Organisational change is the response to an emerging need, and provides a stimulus for assigning resources to implement and adopt change (Reissner 2005; Pettigrew, Woodman & Cameron 2001). Huy (1999) argues that change comprises the three dynamics of receptivity, mobilization and learning. Organisational change may occur incrementally or radically, the rate of change determining how an organisation approaches the change process (Sorensen 2002). Corley & Gioia (2004) argue that change entails a cyclical transition from clarity, to ambiguity, followed by a return to a new state of clarity. Organisational change requires an understanding of ambiguity as this can arise during change initiatives, and is critical to understanding change and its implications (Corley & Gioia 2004).

The effects of change are wide and varied in that an organisation may be influenced by change through its leadership, culture, and structure. Organisational change can result in further change (Hannan, Polos & Carroll 2003), and organisational change initiatives that require the support of management encounter similar problems to organisational learning initiatives (Chinowsky & Carrillo 2007). The processes and application of learning are therefore regarded as critical to organisational change (Bates & Khasawneh 2005).

Strategic planning of organisational change involves changes to an organisation’s culture, and hence resistance may arise as a result of the inability of employees to adapt to the change, or their unwillingness to adopt new approaches. Employees may be reluctant to move from a comfortable state of certainty to an unsettling state of uncertainty, and will normally prefer to maintain the status quo, as humans naturally prefer stability (Detert et al. 2000). Organisations also encounter resistance due to their size and complexity (Barnett & McKendrick 2004). Large organisations are normally more complex, and will exhibit more resistance to change (Barnett & McKendrick 2004).

However, it is important to note that while resistance to change occurs during the change process, resistance may continue to affect an organisation after change has been implemented (Barnett & McKendrick 2004). Learning inherently implies change, and change in organisations is a difficult task when individuals adhere to traditional practices (Chinowsky & Carrillo 2007). Thus culture is a critical human element in organisational change as it has the potential to either facilitate or hinder the learning process (Cook & Yanow 1996). These issues will be discussed in more detail in the following section.

**Impact of Learning Culture Factors on Organisational Change**

Change can be facilitated when an organisation fosters a learning culture, as organisational culture itself is a product of learning in a continuously changing environment (Antonacopoulou & Chiva 2007; Reissner 2005; Pettigrew et al. 2001). Learning often occurs when the existing organisational culture is incapable of resolving issues emerging from change in the environment. Hence, organisations engage in learning to develop solutions to emerging problems, and to develop their problem-solving capabilities. This helps them resolve issues and adapt to changes in their environment (Reissner 2005).

One of the key factors of a learning culture influencing organisational change is the role of leaders in creating a vision, and empowering employees to achieve this vision. Leaders can further support change by understanding how employees fit into the implementation and adaptation of change. Leaders are able to facilitate a learning organisation by developing a suitable organisational climate that promotes learning, by generating dialogue with colleagues, by encouraging a teamwork orientation, by providing training, and by rewarding employees (Aksu & Ozdemir 2005). Their authority within an organisation determines the
significance attached to learning by other members of the organisation, and influences the way learning is incorporated into the organisation’s culture (Antonacopoulou 2006a).

Support by the organisation’s leadership plays a pivotal role in the development of a learning culture, as leaders can extend the concept across the entire organisation (Chinowsky & Carrillo 2007). Leadership in a learning organisation is strategic when leaders themselves master and facilitate learning, and use it to improve organisational performance (Dymock & McCarthy 2006). Where organisational change is undertaken by agents other than senior managers, the support of leaders is often obtained by demonstrating the tangible benefits that will result, particularly in terms of achieving organisational sustainability. Attention has been drawn to the problem faced by leaders in quantifying the direct financial results from learning initiatives, as the initiatives tend to generate indirect benefits, and are often intangible. Organisations generally prefer initiatives that provide direct financial benefit, as these are more compelling business propositions (Chinowsky & Carrillo 2007).

Another key factor linking a learning culture to organisational change is employee involvement. An effective learning culture is said to empower employees, encouraging them to consider others in the organisation when planning their work (Aksu & Ozdemir 2005). While the ability to implement change depends on the cognitive abilities of the individuals within the organisation (Kieser & Koch 2008), decentralised decision-making and implementation at different levels of the organisational hierarchy are generally more evident in organisations with a learning culture (Aksu & Ozdemir 2005). Furthermore, it is argued that a learning culture can facilitate learning by promoting co-operation at an intellectual level (Stonehouse & Pemberton 1999). Engaging individuals in organisational learning assists organisations to adapt to new challenges presented by globalisation (Hayes & Allinson 1998, Schwandt 1997). On the other hand, it has been argued that organisations find it more difficult to justify implementing a learning culture in environments where high staff turnover occurs, as the value of such initiatives is diminished when employees leave the organisation (Chinowsky & Carrillo 2007).

A third factor identified as an influence of a learning culture on organisational change is that of focus. A focus on learning tends to promote change, particularly where that focus ensures understanding across the whole organisation (Ravasi & Schultz 2006). The work of Gupta & Thomas (2001) suggests that a focus on learning generates long-term rather than short-term thinking, draws attention to large rather than small problems, and encourages thinking about success rather than failure. It is argued that organisations that do not have a focus on learning often fail to achieve the potential benefits of learning initiatives, risk losing employee support, reduce the effectiveness of their communication, and diminish knowledge creation and transfer, all of which are important in the process of organisational change (Chinowsky & Carrillo 2007).

Research Questions

To sum up the main findings of the literature reviewed, the three key elements of an organisational culture that emerged included the role of leaders in establishing a learning culture for their organisations, the influence of employee involvement in the development of a learning culture, and the degree to which an organisation has a focus on learning. Within the leadership role, issues emerging from the literature included generating dialogue with employees, encouraging a team-work orientation, and providing training for employees. Hence the key research emerging from the literature was:
What is the impact of a learning culture within an organisation on organisational change?

Sub-questions emerging from the literature review included:

How do leaders establish a learning culture within an organisation to promote organisational change?

What is the influence of employee involvement in the development of an organisation’s learning culture that supports organisational change?

How does the degree to which an organisation has a focus creating a learning culture lead to organisational change?

These questions provided the basis for the research methodology discussed in the following section.

**Research Methodology**

The methodology for the empirical research reported in this paper was based on a qualitative study involving the collection and analysis of data from fourteen in-depth interviews of manufacturers and processors located in the Riverina Region of New South Wales, and in most cases, site inspections. The interviews, which were undertaken with the owners/managers or senior company executives in each firm, lasted for approximately one hour, and were recorded and transcribed for further analysis. Interviews were sought at this level because of the importance of these roles in small to medium sized regional enterprises, and because of their familiarity with all operational aspects of the firms involved. Where necessary, statistical information obtained from interviews has been updated with data from the firms’ websites. The qualitative nature of the research had the advantage of allowing for a close inspection of processes of change involving interactions between people in day to day operations (Ticehurst and Veal 2000, 95; Kerlinger and Lee 2000, 589). The approach also gave interviewees the opportunity to discuss factual information, as well as to express personal points of view and explanations of events, relationships and trends (Taylor and Bogdan 1984; Patton 1990, 172).

Manufacturing was chosen as a focus for the research because of its recognition as a major source of learning and invention, particularly among those manufacturers who seek to develop a culture of learning within their firms. As Toner (2000, 22-24) points out, it is the source of much of the research and development for product and process innovation, import replacement and export expansion, being three times more likely than other industries to engage in innovation. Despite its decreasing proportion of GDP in the Australian economy, down from 18.6 percent in 1978 to 13 percent in 2000 (Beer et al 2003, 108) it remains a significant sector in terms of the levels of income and employment generated, and as O’Connor et al (2001, 44) point out, it has achieved increased levels of productivity through capital investment in new technologies. While the sector’s contribution has decreased significantly in the urban areas of Australia, its contribution has stabilised or increased in many rural regions, particularly those engaged in the manufacturing or processing of products based on the outputs of the agricultural sector, or in the production of capital goods for that sector.

The Riverina Region was selected for the study as it has a significant manufacturing sector involved in the processing of a large output of agricultural commodities, and producing equipment and capital goods for the agricultural sector (Bamberry & Wickramasekera, 1999).
The region, as delineated by the Australian Bureau of Statistics and the New South Wales Government, is located in south-western New South Wales, extending along the Murrumbidgee River from the Snowy Mountains in the east to near its junction with the Murray River in the west. It has a total area of over 63,000 square kilometres, approximately 120 kilometres north to south and approximately 500 kilometres east to west. It is a diverse region, ranging from the eastern alpine forests of the Kosciusko National Park, through horticultural farms, pine forests and native hardwood forests of the mountain foothills, through broadacre grain and sheep grazing farms of the slopes, through the more intensive irrigated rice and horticultural farms of the irrigation areas, to the sheep grazing plains in the west. The region also has a long history of manufacturing, mainly in the processing of its primary production output. It has a total population of just over 150,000, Wagga Wagga being the largest urban centre with a population of about 62,000, and Griffith the second largest urban centre with a population of about 28,000.

The firms included in the research were selected from the range of manufacturers operating in the region, including food and beverage enterprises processing the region’s agricultural and horticultural products, as well as engineering and metal fabrication firms, particularly those manufacturing capital goods for the processors. Several wineries were selected because viticulture and winemaking have become major industries in the Riverina Region, and because winemaking firms have a record of fostering a learning culture and being innovative in the areas of production and marketing (Wickramasekera & Bamberry, 2001; 2003a & b). For purposes of comparison, engineering firms were selected as examples of enterprises known to be manufacturers of consumer goods for the retail market. The latter included Celair-Malmet, a firm producing air conditioners, heaters and hospital equipment, and Precision Parts, a firm producing automotive parts.

Interviews were undertaken using a protocol providing a set of questions designed to elicit answers on a range of issues related to the research questions that emerged from the review of the literature. These were administered with a degree of flexibility to allow for the differences in the types of organisation, and the amount of detail that could be provided on specific issues in particular organisations. However, within this approach, all issues listed in the protocol were raised with each organisation to ensure as much uniformity as possible in the coverage of the key issues.

After the taped interviews were transcribed, the material on each company was analysed to identify the key points relating to the issues covered by the research questions. On completion of this stage, material on each issue across all the firms was consolidated into a single document for further analysis and for writing up the findings. Where necessary, the firms’ websites were consulted to confirm information, and to check or update statistical data. Where available, other published material was also consulted for factual information.

Findings

Leadership, Learning Culture and Change

The interviews undertaken for the research project provided many examples of a strong relationship between the role of the leader in developing a learning culture in the organisation and successful change. As outlined in the literature, leaders were able to use a learning culture to create a vision for the organisation, and empower employees to achieve that vision.
by generating dialogue with their colleagues. One of the cases showing evidence of this was A&G Engineering at Griffith, founded by Ron Potter in 1963 when he was working as a winemaker for a small winery. The firm built up its production of specialised capital goods to meet the particular needs of the local wine industry by generating a learning culture within the firm.

Over a number of years, A&G developed the highly specialised spinning cone technology, which grew out of seeking a solution to the problem of removing sulphur dioxide from bulk-stored wine. Solving this problem resulted in the application of this process to flavour extraction from foods and beverages. A great deal of the flavour is often lost in processing food products involving heating. The spinning cone technology enables flavours to be extracted in the early stage of food and beverage processing, and held apart while other processing involving heating is undertaken. The flavour is then returned to the product without the loss normally associated with processing.

The leaders of A & G created a vision to develop the new process to a stage where it could be hived off as a separate company, allowing it to become a significant exporting enterprise. By generating dialogue with colleagues, they were able to empower their employees to become a highly specialised labour force, enabling them to be employed more productively. It was recognised that the learning culture giving rise to the discovery of the new process needed to be supported by the creation of a research and development division that worked closely with all staff. The new firm, Flavourtech was established in its own premises adjacent to A&G Engineering in Griffith, with its own management, but with close links to A&G through some common membership of their boards. In recent years there has been further specialisation with Flavourtech becoming one branch of the broader enterprise now known as FT Technologies. Other branches of the enterprise include FT Industrial Pty Limited which purchased the Centritherm evaporator from a Swedish company in 2001, and Flavourtech Research, which undertakes research projects and manages the Group’s intellectual property (FT Technologies, webpage).

DeBortoli Wines is another example of a firm with leadership fostering a learning culture that enabled them to develop a vision for extensive change and growth in the organisation. This enterprise was established at Bilbul near Griffith by Italian immigrants in 1928, and is now managed by the second and third generations of the founders’ family. It is now one of Australia’s largest wine producers with vineyards, wineries and other facilities in the Hunter, King and Yarra Valleys in addition to the original site at Bilbul (DeBortoli Wines, webpage). The leadership of De Bortoli Wines was able to learn from the firms early experiences in venturing into international markets by selling wine in bulk to exporters who sold it under their own labels.

Recognising the disadvantage of not establishing its own brand name, the firm’s leaders developed a vision of growth by withdrawing from this arrangement and later entering the export market under the company’s own name (Bamberry, 2004). The impact of on its growth over time has allowed it to undertake an $84 million program to increase its crushing capacity by 80 percent, adding 65,000 tonnes per year to its existing production capacity of 85,000 tonnes. Sales in 2008 increased by $30 million over the previous year to $186.5 million (Daily Advertiser, 29 May, 2009). It has also been able to install and build a new high-speed bottling line, extra warehousing, increased wine storage, as well as undertake a number of environmental measures. New state-of-the art three million litre storage tanks have
been added to the numerous existing million litre stainless steel storage tanks (DeBortoli Wines, webpage).

Similarly the effect of leadership promoting a vision of growth through the development of a learning culture can be seen at Casella Wines. Established by Italian immigrants who bought a farm near Griffith in 1965 and who established a winery in 1969, the firm, is now managed by the second and third generations of the family. After using a learning culture to develop markets incrementally over a number of years, the firm’s senior management decided to implement a bold vision to expand into the export market, particularly in the United States, by producing its Yellowtail brand especially for that market, and by introducing it there before selling it in the domestic market.

The impact of its success resulted in major changes to the company’s operations, including replacement of bottling lines, which were only a few years old, with three new bottling lines with a combined output of over 30,000 bottles per hour, with the intention of adding two more lines to give the winery a bottling capacity of over 65,000 bottles per hour. The growth of the firm also necessitated installation of five new presses, three centrifuges and over 60 million litres of storage capacity, making the winery capable of crushing 120,000 tonnes of grapes during a vintage. Export sales worldwide grew from 500,000 cases in 2001 to almost 11 million cases (132 million bottles) in 2006/7, with 8.5 million cases being exported to the United States in 2008 (Casella Wines, webpage; Daily Advertiser, 29 May, 2009).

An example of a firm where the leadership itself mastered and facilitated learning, and generated a vision for growth in the process was Celair-Malmet, a firm producing air conditioners and heaters, as well as hospital equipment. The founder, Ted Celi, who had worked for the Ricegrowers’ Co-operative in Leeton in engineering and electrical areas, decided to establish a business in 1972 after building an evaporative air conditioner for himself, and receiving orders for others. Later, as part of the vision for growth, the business was expanded to include the manufacture of heaters, and the hospital equipment manufacturer, Malmet, was purchased and added to the enterprise.

In the early years of Celair-Malmet, the leadership established a learning culture where each new model of air conditioner incorporated new ideas in content and manufacturing processes as staff learnt from their experience with previous models. Later, following the purchase of the hospital equipment manufacturer, Malmet, the same approach was used to upgrade appliances to meet new health standards. The impact of the learning culture at Celair-Malmet allowed the firm to expand its domestic market to a level where it was able to take over the Adelaide-based company, Bonair-Vulcan, as well as move into export markets such as South Africa.

Another example where the firm’s leadership mastered learning and developed a learning culture among other employees was Allgold Foods, where much of the organisational change was based on the learning experiences previously gained by the founders in working as engineers at the Ricegrowers’ Co-operative, combined with experiences in the new firm. They were able to adapt the processes of rice milling to the milling of other grains, making modifications to machinery as staff gained experience operating the plant, and as they sought to improve the quality of their products to meet clients’ specifications. As a result of this learning, combined with the management’s vision of growth, the firm was able to extend its range of activities and develop to a point where it was able to establish a joint venture with an international food-processing firm, eventually merging with that company.
Employee Involvement, Learning Culture and Change

Several interviews revealed examples of firms developing learning cultures that encouraged employee involvement through co-operation between sections within an enterprise or through collaboration with clients. An example of this was Yoogali Engineering at Griffith. This enterprise was established by an Italian migrant who had initially worked for an engineering firm in Griffith before establishing his own general engineering business in 1974, repairing and manufacturing equipment for the district agricultural industry, as well as for firms servicing that industry. By encouraging staff to engage with co-workers and clients in a collaborative learning environment, the firm developed a better way to make pallets for the local horticultural industry, eventually resulting in the invention of a pallet-making machine.

Other examples of inventions resulting from collaboration and co-operation included the development of an orange grader, an onion washer and a lettuce harvester. In the latter case, the client “had a rough idea in his head,” and after explaining this to staff, the design work was undertaken by employees of the firm. This was followed up with the production of the equipment by the manufacturing section. Collaboration with the client ensured the equipment met his needs, as well as meeting requirements associated with engineering design, manufacturing practicalities and cost considerations (see Yoogali Engineering webpage).

At Parle Foods, a food-processing firm at Griffith, there was an example of a learning culture involving internal collaboration between engineering and production staff. This firm grew out of a family farm, going into manufacturing in 1990 when it began processing the gherkins it produced. It later diversified into processing other fruit and vegetables that were counter-seasonal to gherkins, allowing for better utilisation of the company’s resources, and reducing the risk associated with concentrating on a single product (Riverina Regional Development Board News 2000, 1). The firm produced much of its equipment in-house, having established a large engineering workshop for this purpose. The firm bought machinery and equipment from factories that were closing down, then, using knowledge gained from experience developed within a learning culture, staff re-built the machinery to meet the company’s particular needs. The manager commented that although the technology was not particularly complex, the changes that resulted allowed the firm to process products more cheaply, giving it an advantage over its competitors.

At Allgold Foods, a collaborative learning culture was developed between employees and external contractors. The manager commented that many of the innovative changes adopted by the firm occurred as a result of suggestions that came from external contractors who had been called in to solve particular problems that had emerged. The contractors had frequently worked in other food-processing establishments, had come across similar problems, and had developed solutions to the problems. As he pointed out, “as long as you are not cutting in on something that they have developed and branded, they are quite willing to share it with you.” By creating an environment where external contractors could work collaboratively with employees, the firm was able to implement changes that helped it to operate more efficiently.

An example of a collaborative learning culture within the local wine industry was the introduction of stainless steel equipment by A&G Engineering in the Riverina Region. A director of the firm reported that winemakers had commented that there was a need to replace the concrete tanks as they were labour intensive, difficult to clean and maintain, and were dangerous. Stainless steel was starting to be used, so A&G Engineering investigated its potential and began to make stainless steel vats and other equipment. One of the founders of
the firm, Ron Potter had earlier invented and developed the Potter Fermenter in collaboration with winemakers in the region, and within the learning culture established earlier, it was relatively easy to encourage staff to work collaboratively with the wine industry in the development of new stainless steel equipment.

**A focus on Learning Impacting on Change**

The literature reviewed in an earlier section of this paper drew attention to the benefits of developing an organisational learning culture with a focus on the long term, a focus on the larger, rather than smaller problems, and encouraging a focus on success rather than failure. While many of the findings outlined above also fit into these categories, there were further findings that were examples of these learning influences on organisational change. An example of a learning culture that had a focus on the long term and on major problems was observed in an interview with a senior executive of the Ricegrowers'Co-operative. The Co-operative was established at Leeton in 1950 by a group of rice growers in the surrounding Murrumbidgee Irrigation Area to process and market the gradually expanding output of the area. It has grown to a very large organisation, operating a number of rice mills and other facilities throughout the rice-growing region of southern New South Wales and northern Victoria, as well as marketing most of the output in the domestic and international markets.

The Co-operative faced the problem of cost-effective disposal of waste products from rice processing without generating environmental problems. Research into new technology by the firm’s research and development division resulted in finding ways of converting the waste material into saleable products, including stockfeed and material for the nursery industry. These activities were eventually hived off as separate enterprises owned by the Co-operative, Coprice and Biocon.

An example of a firm using its learning environment to focus on a major problem that had implications for the industry as a whole was DeBortoli Wines. The chief winemaker described how wineries had traditionally pre-gassed bottles with carbon dioxide because they needed an inert filling operation to prevent oxygen coming into contact with the wine. An additional requirement was to be able to fill bottles to different heights. This was because bottles going straight to the marketplace needed to be filled at a lower height than bottles being prepared for binning or aging. The latter needed to be filled higher to allow for a certain amount of evaporation and absorption by the cork over time. However, the firm faced the problem that modifying the fill height in the bottle caused a break in hygiene when filler tubes were replaced, resulting in the need for a re-sterilisation cycle. To overcome this problem they designed a machine that would evacuate the bottle similar to the process used in the brewing industry, then fill the bottle with an inert carbon dioxide or nitrogen mix, and then fill the bottle with wine. They found by experimentation that they could then adjust the fill height “by winding the machine up or down.” The knowledge gained through this learning resulted in a major change to the way the firm managed its bottling operations.

A&G Engineering also provided an example of a learning organisation focussing on a major problem where the solution had significant implications for change in the wine industry. The firm faced the problem of their new stainless steel tanks overheating in the hot climate, and following discussions with district winemakers, they developed the dimple plate concept, which resulted in far better temperature control. This involved putting a jacket on the outside
of the tank by dimpling the plate, welding the jacket on, and circulating cool brine around the tank.

Celair-Malmet provided another example of a firm taking a long-term strategic focus based on its learning culture. After experiencing successes with contracting out the supply of some of its components and other operations, the company decided to concentrate on core activities such as the assembly of finished products. One of the largest operations contracted out was the powder coating of a range of products to Riverina Powder Coaters (RPC), a business established across the road from the factory. An advantage of this for Celair-Malmet was that because RPC was servicing other customers, it was able to stock a wider range of colours than was possible when Celair-Malmet did its own painting. This meant that Celair-Malmet could offer its customers a greater choice of colours, giving it a competitive advantage. A similar approach was taken with the contracting out of components to small local businesses, where the company extended its learning culture to these businesses by providing training, and in some cases, equipment. These changes allowed the firm to expand its output and grow along the lines described earlier.

At Precision Parts, there was an example of major changes resulting from developing a learning culture with a focus on the long term, and on providing support for the further learning by employees. The founder, formerly an engineer at the RAAF Base near Wagga Wagga, set up an engineering partnership in the city after retiring from the RAAF in 1976, specialising in the manufacture of automotive parts, particularly harmonic balancers (Precision Parts, webpage). The manager described a focus on the long term through design improvement and staff development to develop new and better products, first by drawing up new ideas using traditional methods, and then following through with training staff to undertake more advanced drawings using computer-based programs. These developments resulted in fitter and turner positions being upgraded to engineering positions in some cases. It was through changes such as these that the firm was able to increase its output, achieve economies of scale, and become competitive enough to enter the export market.

Conclusion

While it can be argued that any organisation that continues to operate must have experienced some learning in order to survive, this does not mean that it can be described as a learning organisation or an organisations with a learning culture in the way these terms are defined in the literature. The definitions imply that such organisations are characterised by leadership that recognises the importance of organisational learning, and makes a concerted effort to incorporate learning into the organisation’s culture by encouraging and supporting the learning of its members. The fact that many organisations do not survive suggests that some do not learn from their experiences and make the necessary changes.

In relation to the link between organisational learning and change, there is an underlying assumption in the literature that learning leads to organisational change. The key factors identified include the role of leaders in creating a learning culture that supports organisational change in a number of ways, using the organisation’s learning culture to promote employee involvement in co-operative and collaborative action to implement change, and ensuring that there is a clear focus on learning for a strategic approach to change.

In relation to the key research question on the impact of an organisation’s learning culture on organisational change, the findings showed that in the companies surveyed, the existence of a
learning culture did have a significant impact on change within the organisations, and that it generally occurred through the processes suggested in the literature. In relation to the first sub-question, it was noticeable that most of the leaders had a history of being personally involved in learning, and that they had used this learning as the basis for change. They attached significance to learning, and created learning cultures in which they generated dialogue with employees across the whole organisation. These actions encouraged staff in their efforts to support change by developing new ideas that would improve the performance, growth and sustainability of the organisation.

In relation to the second sub-question, the research findings revealed a high level of employee involvement in learning, leading to change through co-operative team-work and collaboration in solving problems to meet new challenges. Evidence of this was provided in the wide range of inventions reported, both in terms of products and processes, that led to significant change and growth in the firms surveyed.

In relation to the third sub-question on the significance of the degree of focus on creating a learning culture leading to organisational change, it was found there was a clear focus on learning as part of a strategy for change, with attention focussed on the more significant problems and actions that would ensure success in the long term.

While the number of firms in the sample was relatively small, and the scope of the research limited in being part of a wider investigation, the strength and consistency of the findings across all the firms surveyed contribute to a satisfactory level of confidence that the factors identified link a learning culture with organisational change. However, it is recognised that there is a need for further research across a wider range of organisations, both large and small, and across a wider geographic area, in order to gain a more comprehensive understanding of the impact of an organisation’s learning culture on organisational change, as well as the range of factors involved.
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