ORGANISATIONAL RESTRUCTURING – THE CASE OF THE LEARNING ORGANISATION: CONTRADICTION OR NECESSITY?

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ABSTRACT
ACADEMIC TRACK

The quality of individual and collective learning has been held to be a key determinant of organisational success (Hayes and Allinson, 1998), and perhaps even a prerequisite for business excellence (Eskildsen, Dahlgaard and Norgaard, 1999; Evans and Lindsay, 1999). Lank and Lank (1995) strongly advocated the 'continuously learning organisation' and many academics and practitioners have asserted that the greatest business value in an organisation now lies not in physical assets, but in the various elements of intellectual capital that have been developed (Antal et al., 1994; Bontis, 1996; Brooking, 1996; Cascio, 1998; Darling, 1996; Drucker, 1993; Edvinsson and Sullivan, 1996; Handy, 1989; Osland and Yaprak, 1995; Quinn, 1992; Reich, 1991; Saint-Onge, 1996; Senge, 1990; Stewart, 1991, 1994; Sveiby, 1997; Toffler, 1990).

Is there a contradiction then, between the planned 'brain-drain' (e.g. downsizing, restructuring, outsourcing, or flattening), incurred by organisations and their purported efforts to become learning organisations? Or is there in fact an inverse relationship between the two? Could it be that, in the face of such 'loss of capital', organisations are becoming more systematic in identifying remedial measures to overcome this loss by proactively developing learning systems to update, record and manage such capital?

This paper will examine these questions, firstly by discussing the nature of the planned 'brain-drain' phenomenon, the concept of the learning organisation, and the conceptual relationship between the two, and secondly by analysing two empirical case studies which demonstrate that, because both restructuring and organizational learning can lead to better competitive position, it is imperative to understand how these activities are related to avoid inadvertently damaging one while pursuing the other.

Introduction

Downsizing is a way of life in organisations today. Yet studies have shown that these initiatives, although intended to produce positive results, do more harm than good to the organisation and its workforce (Cascio, 1993). This harm is not only to organisational productivity and profitability, but also to the organisational learning process.

Organisational learning as a discipline of research can be regarded as ephemeral. There is strong evidence to suggest that models of organisational learning have grown more out of the consulting needs of business than grounded empirical research. Some confusion surrounds **what** organisations should be learning and **how** effective learning takes place and is translated into action (Dunphy, Turner, and Crawford, 1996), while the validation of empirical research in the literature has also been questioned (Hedberg, 1981; Huber, 1991; Dodgson, 1993).

Despite this, there is general consensus that organisations need to find better and smarter ways to learn (Argyris, 1994; Senge, 1990), and there have been many reported successes in the workplace (Leonard-Barton, 1992; Argyris, 1994). As disciplines of study, and a focus for a well-defined community of practice, many organisational learning models provide useful learning trajectories for modern organisations trying to grapple with process and production efficiencies. More generally, organisational learning is concerned with improving the behaviour and capability of individuals so that the organisation can more effectively respond to its environment.

The critical question in this paper is 'Is there a contradiction between the planned 'brain-drain' incurred by organisations and their purported efforts to become learning organisations?' The first part of the paper examines the planned 'brain-drain' phenomenon, the concept of the learning organisation, and the conceptual relationship between the two.

The second part of the paper analyses two empirical case studies where the organisations concerned actively planned to maintain their competitive position by creating learning organisations while at the same time shedding part of their workforce.

Planned 'brain-drain'

As a result of the changes taking place within the business environment and their concurrent impact on corporate structure, recent decades have seen seemingly endless examples of organizational downsizing (Pottruck, 1998). In Australia, as in other developed countries, these downsizing initiatives are often taking place within large organizations that had, in the past, enjoyed a degree of immunity from retrenchment. For example, a 1992 survey by the (US) Conference Board found that 90 percent of the large companies surveyed had taken significant downsizing actions during the prior five years. Similarly, Cameron, Freeman, and Mishra (1991) reported that between 1987 and 1991, more than 85 percent of the Fortune 1000 corporations downsized their white-collar staffs. During the first seven months of 1994 alone, more than 350,000 Americans lost their jobs to downsizing initiatives. This represented an increase of about 33 percent over the comparable rate for recessionary 1991 (Richman, 1995).

The emergent characteristic of downsizing, which hit the Western firms a decade ago, has now moved to Japan where their reluctant human resource managers have begun to "hollow out" their workforce - and much of the effect falls upon the middle management cadre (Jurgen-Richter and Kidd, 2001).

At least since the mid-1980s, employment downsizing has been regarded as the preferred route to improving organizational performance. The past two years have seen the heaviest downsizing as companies have struggled to meet Wall Street's expectations (Laabs, 1999). The key conclusion of a benchmarking study conducted by the government is that the success or failure of a downsized organization depends on the workforce remaining after the downsizing (Serving the American Public: Best Practices in Downsizing, 1997).

Even as the US economy as a whole expands, many organizations are continuing to downsize, and experts believe that the downsizing trend is far from over (McKinley, Sanchez, and Schick, 1995). During the next several years, companies like GTE, Westinghouse, Gillette, and Procter & Gamble plan to release thousands. These downsizing initiatives are thought to represent an early stage of a continuing, long-term, socio-economic evolution. More than simply shrinking the workforce of an organization, much of the change seems to represent a permanent shift in social, economic, and organizational competitive structures (McKinley, Sanchez, and Schick, 1995).

These efforts by companies to obtain a competitive leadership position through asset parsimony have successfully challenged the “bigger-is-better” corporate paradigm (Tucci and Sweo, 1996). Firms now feel compelled to downsize because being "lean-and-mean" is believed to be a valued attribute. Some institutional theorists argue that three specific institutional forces (coercive isomorphism, mimetic isomorphism, and normative isomorphism) have played a significant role in the spread of corporate downsizing (DiMaggio and Powell, 1983). First, coercive isomorphism pressures organizations to conform to institutional rules that define legitimate structures and management activities. Second, mimetic isomorphism pressures organizations to mimic the actions of firms recognized as industry leaders. Finally, normative isomorphism - which emerges through the management practices learned at professional conferences and seminars, traditional university curricula and contemporary executive education programs, and formal and informal professional networks - pressures managers to conform to currently accepted management practices and philosophies (McKinley, Sanchez, and Schick, 1995).

Because of these organizational trends, an increasing amount of attention has recently been directed toward the phenomena of downsizing, restructuring, and outsourcing -- especially in the popular business press. Most of this interest has focused on the potential performance outcomes of firms embracing these initiatives and on the expected benefits of these types of restructuring. The decade of the 1990s also witnessed the publication of a large number of articles, particularly at the individual level of analysis, demonstrating the negative effects on the “survivors” of organizational downsizing (Burke, 1998). The literature indicated that a vast number of downsizing programs were hastily formulated, not linked with the strategic plans of the organization, and largely unsuccessful in meeting employer objectives (Cascio, 1993; Cameron, 1994).

Initially, downsizing and outsourcing initiatives were heralded (especially in the popular financial press) as a panacea providing organizations with a way to significantly reduce costs, increase productivity and profitability, and, thereby, enhance global competitiveness. And, while it seems reasonable to expect that downsizing should lead to increased organizational productivity and profitability, recent evidence suggests that these initiatives have not been as effective in achieving these goals as originally expected.

For example, two recent American Management Association (AMA) surveys of corporate downsizing and restructuring found little broad-based support for expected productivity and performance benefits. In its 1994 study, the AMA found that while corporate downsizings were common, less than 35 percent of downsized firms reported significant improvements in productivity and only 44 percent reported significant increases in operating profits. In contrast, the same study found that nearly one-third of downsized firms actually experienced productivity decreases during the same period. Similar results from a subsequent (1995) AMA study were somewhat more positive with approximately one half of the downsized companies surveyed reporting increases in overall operating profits. Additionally, firms that had downsized two or more times between 1989 and 1994 reported average gains of about 58 percent in operating profits and 44 percent in productivity. Two additional findings from the AMA surveys are noteworthy. First, many respondents indicated that the restructuring goals identified as most important by senior executives were rarely met; and second, that a frequent by-product of downsizing is significant reductions in employee morale.

These results are similar to those of a recent CSC Index survey where respondent firms reported that less than 33 percent of all downsizing initiatives had achieved their desired productivity or profitability goals. While, at the same time, a majority of these firms reported experiencing decreased levels of employee morale, and increased levels of employee absenteeism, cynicism, and turnover as a result of their downsizing initiatives. And a study of the largest Spanish firms indicated that many of those firms that downsized did not achieve their goals (Suarez-Gonzalez, 2001).

When work-force reduction occurs through downsizing, the number of tasks to be accomplished within the organizational network initially remains constant, but fewer people are available to accomplish the tasks (Sutton and D'Aunno, 1989). Therefore, as management shifts its focus from “bigger-is-better” to “lean-and-mean”, companies are being forced to identify exactly where they have the greatest competitive advantage and to redefine their organizational structures to maximize that advantage. As a first step toward accomplishing these goals, managers must determine (1) what tasks should be accomplished in-house, (2) what tasks should be accomplished through strategic partnerships, and (3) what tasks should be contracted out (outsourced) to third-party specialists. Increasingly, organizations are focusing on the third choice, outsourcing, as a means to increase flexibility and generate high customer value. Thus the outsourcing of both core and non-core tasks has become extremely popular in recent years (Daugherty and Droge, 1990). Beginning with support services like catering and cleaning, the approach often develops rapidly to include central service functions such as personnel, accounting, and information systems, as well as traditional core operations including R&D, logistics, engineering, and manufacturing.

As a result, organizations find they are increasingly relying on third-party specialists to provide a variety of products and services that were traditionally provided in-house. Several surveys have attempted to chart the occurrence of outsourcing, its causes and consequences, strategic significance and prognosis for the future. The conclusions from these surveys have consistently shown that: (1) outsourcing has indeed become more prevalent over the last decade, and (2) outsourcing has been extensively adopted across all sectors of industry and types of establishments-- including manufacturing and service, both public sector and private-- and across medium and large-scale firms (Bremen and Fowler, 1994).

As organizations downsize, survivors often must redouble their efforts in order to accomplish remaining organizational tasks. In a typical scenario, survivors are left to carry their own workloads, as well as the workloads of their departed colleagues. To make matters worse, specialist skills may have "walked-- out-the-door" and tasks that used to be completed quickly may now take much longer as survivors are left to discover how they should be accomplished. In addition, traditional job responsibilities may have been redesigned as part of restructuring. The new job responsibilities may incorporate tasks, technologies, and skill requirements that the surviving employees do not currently possess (Lewin and Johnston, 2000).

Although downsizing once was viewed as an indicator of organizational decline, it now has shed that stigma and gained strategic legitimacy as a reorganization strategy (McKinley, Sanchez, and Schick, 1995). Despite evidence showing that many downsized companies have failed to achieve their intended goals, downsizing continues to be used, even in the best of economic conditions. Among the companies announcing major workforce reductions in the final months of 1998 were Kodak, Woolworth, Citicorp, International Paper, Fruit of the Loom, Montgomery Ward, and Levi Strauss (Ellis, 1998). Annual surveys conducted by the American Management Association show that only 41 percent of downsizing companies have reported productivity increases, and only 37 percent have realized any long-term gains in shareholder value (Koretz, 1998). Clearly, downsizing is a tactic that is popular and enduring but not always productive or valuable (Fisher and White, 2000).

Organisational Learning

The quality of individual and collective learning has been held to be a key determinant of organisational success (Hayes and Allinson, 1998), and perhaps even a prerequisite for business excellence (Eskildsen, Dahlgaard and Norgaard, 1999; Evans and Lindsay, 1999). Lank & Lank (1995) strongly advocated the 'continuously learning organisation' and many academics and practitioners have asserted that the greatest business value in an organisation now lies not in physical assets, but in the various elements of intellectual capital that have been developed (Antal et al., 1994; Bontis, 1996; Brooking, 1996; Cascio, 1998; Darling, 1996; Drucker, 1993; Edvinsson and Sullivan, 1996; Handy, 1989; Osland and Yaprak, 1995; Quinn, 1992; Reich, 1991; Saint-Onge, 1996; Senge, 1990; Stewart, 1991, 1994; Sveiby, 1997; Toffler, 1990).

However, Calvert et al. (1994) contended that no shared meaning of what constitutes a learning organisation currently exists. Indeed, Daft (1997) stated that there are no true learning organisations, only organisations that exhibit certain characteristics that might be expected of a learning organisation. And Senge et al. (1994) pointed out that there is no such thing as a learning organisation, but rather, it is a vision. The literature and research on organizational learning are so fragmented that there is no widely accepted model or theory (Fiol and Lyles; 1985; Glynn, Lant, and Milliken, 1994; Huber, 1991; Shrivastava, 1983).

The difficulty in understanding the term is evident in the light of the work of Argyris and Schon (1978) who identified six different ways of understanding organisational learning, each based on a particular field of study: social psychology, management theory, sociology, information theory, anthropology, and political theory. Since that time, researchers from other disciplines such as strategic planning, adult learning, and employee relations have entered the field to further expand the literature (Dixon, 1992).

Several commonly occurring variations of 'learning organisations' in the literature are evident:

- implementation of continuous improvement (e.g. Francis, 1996);
- an ingredient to attain customer loyalty (e.g. Stambaugh, 1995);
- the use of systems thinking (e.g. Senge, 1990);
- the result of a linear development effort (e.g. Kline and Saunders, 1995);
- development of employee capability database (e.g. Metcalfe and Gibbons, 1989);
- visual-descriptive academic models of learning (e.g. Engestrom, 1994); and
- an intermediate step, after total quality, before world-class (e.g. Hodgetts et al., 1993)

The essence of these themes is relatively well contained in a typical definition put forward by Beck (1989) that has been adopted by the British Training Commission:

> a learning organisation is one which facilitates learning and development of its employees, whilst continually transforming itself. (p.22)

Of course, 'organisations' do not learn, as can be seen from the Senge (1990), Huber (1991) and Garvin (1993) schools of thought. An organisation cannot create knowledge without individuals (Nonaka and Takeuchi, 1995). It is the integration of learning into appropriate organisational systems, structures, routines and culture (Burgoyne, 1995; Crossan et al., 1993) that is the engine room of the process, as the following quotation demonstrates.

> Organisational knowledge creation . . . [is the] process that 'organisationally amplifies the knowledge created by individuals and crystallises it as a part of the knowledge network of the organisation. This process takes place within an expanding 'community of interaction' which crosses intra- and inter-organisational levels and boundaries. (Nonaka and Takeuchi, 1995, p.97).

Senge (1990) was of the view that this integration is carried out through teams, because it is '. . . teams, not individuals, [who] are the fundamental learning unit in modern organisations' (p.10). Of course, this process is based on personal mastery, the '. . . essential cornerstone of the learning organisation - the learning organisation's spiritual foundation.' (Senge, 1990, p.7). It is this personal mastery that strengthens the critical link between individual and enterprise learning:

> Embedding learning into an enterprise culture, and how this is achieved, is seen as the critical issue. Professor John Burgoyne of the University of Lancaster says: we notice that managers can only go so far in developing management skills. They must move to whole company learning to help the organisation as a whole to change, develop and know its own skills base. (Ivanoff & Prentice, In the Karpin Report, 1995, p.277)

Argyris and Schon (1978) also developed a three-fold typology of learning that they described as single-loop (leads to a refinement of the prevailing mental model and to a modification of the rule that regulate behaviour in organisations), double-loop (involves reviewing the underlying assumptions and principles and the possible reframing of mental models), and deutero-learning (or learning how to learn). Organisational based tools and techniques used by Argyris and Schon were teams, mentors, coaches, core competencies, management styles, scenario analysis, process reengineering, action learning, and experimentation.

The literature on organisational learning and how organisations can become more like a 'learning organisation' may therefore be synthesised into three fundamental components:

- there must be an emphasis on developing individual capacity for double-loop learning;
- there must be an emphasis on learning how to learn (deutero-learning); and
- there must be sufficient organisational infrastructure and support for the first two items and for inculcating both into the organisational psyche.

The importance of knowledge and learning cannot be overemphasised, according to U.S. management writer Peter Drucker (1993):

> Knowledge is the only meaningful resource today. The traditional factors of production - land, labour and capital - have not disappeared, but they have become secondary. They can be obtained, and obtained easily, providing there is knowledge. (p.38)

Indeed, knowledge, experience, and practices, and the understanding to apply them in everyday work will determine enterprise success (Davis and Botkin, 1994). Ultimately, according to De Geus (1988), the only competitive advantage the organisation of the future will have, will be its managers' ability to learn faster than their competitors, a task made more challenging by a changing environment. Indeed, the quality of individual and collective learning has been held to be a key determinant of organisational success (e.g. Hayes and Allinson, 1998), giving further credence to the notion of the 'learning organisation'.

One of the barriers to understanding the organizational learning process has been the difficulty in bridging the gap between what is known about learning at the individual level and collective learning (Fiol and Lyles, 1985; Hedberg, 1981). Weick's (1995) four-level framework is particularly useful for understanding the levels of organizational learning. He identifies the first level as that of the individual, or intrasubjective meaning. The second, intersubjective, level is where information is interpreted and shared meaning developed among individuals and groups. The third, generic, level is where the resulting knowledge is stored and preserved over time, and the fourth, extrasubjective, level includes macro phenomena, such as organizational culture and institutional artifacts.

Planned "Brain Drain" and Organisational Learning

So, what connections can there be between the planned "brain-drain" and organisational learning? Are they contradictory or complementary concepts?

Weick's (1995) framework is particularly useful when examining the interrelationships between downsizing and learning organisations. Weick's framework clearly identifies the potential risks to organisational learning of organisational downsizing. The key implication for this paper is that it is not only the loss of intra- and intersubjective knowledge and learning which occurs when organisational downsizing takes place, but if the processes and systems which are responsible for establishing generic (or organisational) levels of knowledge and learning, or the engine room of the organisational learning process (Nonaka and Takeuchi, 1995) are deficient, then the adverse effects of organisational downsizing on organisational learning described below are not surprising. However, as will be seen in the two case studies that follow this section, it is also possible for organisations to successfully negotiate the organisational downsizing process while maintaining levels of organisational learning.

Poor implementation is one reason for the deleterious effects of organisational downsizing on levels of organisational learning. For example, in a study of downsizing in the U.S. automobile industry, Cameron, Freeman, and Mishra (1991) found widespread implementation errors in organisational downsizing programs. Most of the companies in the study experienced deteriorating levels of quality, productivity, and effectiveness as a result of using "nonprioritized" implementation tactics that did not allow for "prediction of who would be eliminated, how many would be gone, or which talents and skills would be lost" (1991, p.61). A case reported by Cascio further illustrates this point: in a Fortune 100 company a $9 per hour bookkeeper was downsized only to be hired back as a consultant at $42 per hour after management realized that "it lost valuable institutional memory" in the process (1993, p.99).

Not only do these examples point to an inefficient and ineffective use of resources, but they demonstrate the importance of intra- and intersubjective learning, and more particularly and even more importantly, the lack of suitable mechanisms to ensure that organisational knowledge is stored and preserved over time – the generic level of Weick's (1995) four-level framework.

If we consider the intersubjective level of organisational learning, where information is interpreted and shared meaning developed among individuals and groups, then clearly social networks are of critical importance. Indeed, the development of often informal social networks, or social capital, defined as 'encompassing the norms and networks facilitating collective action for mutual benefit' (Woolcock, 1998, p.155), in knowledge systems is the primary mechanism by which knowledge exchange and combination occur (Nahapiet and Ghoshall, 1998; Quinn, Anderson and Finklestein, 1996, Spender, 1996). Excessive and unplanned disruption of such networks through organisational down sizing is therefore undesirable.

Two studies would tend to lend support to this view. For example, Keller (1989) found that restructuring at General Motors destroyed informal networks that were critical to formal operational networks. After the reorganization, "the whole organization had to go fishing for that informal infrastructure. It should have been managed along with the management of the formal structure" (1989, p.119). In another study, Lei and Hitt (1995) related outsourcing to organizational learning damage. Outsourcing is a form of restructuring that often involves personnel reduction when it is used to replace a function that was once provided internally. In these cases it can have a similar damaging effect on organizational learning: "Outsourcing can erode the firm's potential for organizational learning and development of new technologies" (1995, p.836).

From the literature then, downsizing would seem to be a high-risk strategy in a learning organization. Managers aiming to neutralize this risk must focus on the management of social networks and consider the dynamic interplay between and alignment of formal and informal structures (Ibarra, 1992). Top managers seeking the competitive advantage of organizational learning capacity must consider critical intersubjective networks when implementing any restructuring involving movement of or reduction in personnel, particularly in the event that generic knowledge is not present.

The following case studies will further illustrate these issues.

Case Study 1

For firms to survive in the highly competitive Aerospace Component Supply Market, they must have some sustainable competitive advantages. Customers are demanding continual price reductions and improvements in lead times from their suppliers. In the Asia Pacific region, developing economies such as China, Indonesia and Malaysia are prepared to support the aerospace industry through government intervention. Lacking such support, Australian companies must compete on price and lead-time in a relatively high wage market to survive. This case study concerns one such company based in Sydney, Australia.

The major competitive advantage the company currently enjoys is the knowledge and skill of its workforce, although this wasn't always the case. The company had historically focused on operational competencies as distinct from business competencies. The emphasis was on highly skilled specialists at all levels, with a bias towards production and engineering aerospace competencies. The majority of "middle management" had been promoted from within the company. Training in people skills had been through short courses, or on-the-job experience, and had been targeted at individuals, with minimal emphasis on team based approaches. In Weick's

(1995) terminology, the focus had therefore been on the intrasubjective level of organisational learning.

Although the company has undergone significant change over the last decades, a critical change took place in 1993. In 1993 there was a global downturn in the aerospace industry mainly as a result of reduced spending on military aircraft, particularly in the USA. The company made a strategic decision to reduce staff numbers particularly in support areas, and introduced programs to upskill the current workforce to counter-act the downsizing. This resulted in a flatter structure with fewer staff in design and engineering. While some engineering staff were re-employed on short-term contracts when demand justified it, other staff were never replaced.

In 1996, there was an increased demand for aerospace components and a rapid increase in the volume of production was required. To meet this demand, the company had a number of options. It could either recruit additional employees, or seek other internal solutions. The first solution it implemented was a team-based structure using flexible work teams (developing the intersubjective level of organisational learning) . In this structure, multi-skilled employees were able to move from areas of low demand to areas of high demand. The company also utilised a network of former employees who were willing to work on contract on an as needed basis.

Through its General Manager Operations, the company deliberately set out to create a learning organisation during the period 1996-1999. Just as multi-skilling operational employees had enabled the company to increase productivity through teams, the company believed that by multi-skilling technical and managerial staff they could improve productivity by creating a learning organisation. Management had recognised that by downsizing they had lost not just people but also knowledge, skills and expertise (a phenomenon previously discussed - Cameron, Freeman, and Mishra, 1991; Cascio, 1993). Most of the support staff in design and engineering that had been let go could not be easily replaced. This was in part because of the relatively small demand for aerospace expertise in Australia, and also because aerospace experts in Australia were often head hunted to work in the US when there was an increase in demand there.

However, to focus on organisational learning, a change in approach was needed. The change was from the company's historical focus on entry-level training and technology-oriented enhancement, to one of broadening the skills of the existing workforce in business and innovation competencies through a learning program. The participants were from a variety of backgrounds and positions within the firm, but the majority came from an engineering/technical background and had little exposure to management education or training. Consequently, the company entered into a program of post-graduate training with a single University that would multi-skill managerial and engineering/technical staff in the relevant competencies. In seeking a program of post-graduate studies that would address a range of business, technology and innovation topics however, the company could not find one package that completely fulfilled its needs. And, as the company learned more, those needs were continuously evolving. So they reached an agreement with several universities to supply the required course material.

Subjects were all delivered in-house, however other participants from outside the company undertaking the Masters program also attended the sessions delivered at the company's site. This provided the program with added diversity because participants were learning about what was happening at the company as well as in a range of other companies. Participants were required to examine theoretical issues from an applied perspective. The subject matter and assessment tasks were all applied in nature. For example, the assessment tasks looked at real problems or opportunities for improvement in the participants' own organisations. The challenge for the firm was to source training for managers, supervisors, engineers and designers that meet their business needs and is accredited by a university. The challenge for the university was to maintain the integrity of a program while being sufficiently flexible for the participants. The partnership allowed the university to offer a wide range of subjects with a guaranteed number of participants and cost recovery payments. It allowed all participants in the program to select from a range of subjects offered by several institutions, and to mix and match delivery modes that suited their needs and commitments as well as benefiting the company.

The need for such programs grew not only out of the need for new competencies, but also from the need to support career development in flatter organisational structures, where the opportunities for people to learn through job rotation and mentoring mechanisms had become extremely limited. The flatter organisational structure was a direct result of the 1993 down-sizing. With the change to a flatter organisation, there were fewer middle and senior managers to act as mentors and assist the development of new managers. With the decline in managerial positions in the flatter organisation, there were fewer opportunities for new managers to take on acting roles and learn about other facets of the organisation. Flat organisational structures mean that senior managers can no longer spend time coaching and mentoring the mangers beneath, so one way to meet this challenge is to develop new processes to develop multiskilled managers. A genuine partnership with the Universities was sought to yield benefits to both parties. Under the agreement the company had with the universities involved, there was some flexibility in approach allowed: options for learning by coursework or by research; options for adapting existing modules or creating new ones, and so on. Overall, the objective was not only to develop specific competencies and improve participant employability, but also to enhance intra-organisational teamwork and create an organisational enthusiasm for critical questioning and innovation flowing from learning (the intrasubjective, intersubjective, and extrasubjective levels of organisational learning).

Another initiative that had been introduced concurrently with the educational program was that of introducing teams on the factory floor, an initiative that was viewed as important in addressing communications issues on the factory floor. Teams had been an integral part of the new product development process. Although what one manager called "integrated product teams" had been established to ensure that cross functional groups of design, engineering and production managers were involved in new product development to encourage multiskilling of managerial staff, it was not until late 1997 that the team-based concept was fully implemented on the factory floor.

To effectively lead and manage teams, supervisors and technical staff required different, new skills, and one of the outcomes of the learning program was to enable participants to gain those skills, amongst others. One of the most important skills needed to ensure the successful implementation of the team-based structure was communication. In focus groups conducted by the company, participants stressed that both horizontal and vertical communication had significantly improved as a result of taking part in the program.

In summary, the key outcome of the team-based structure and educational program was that participants' knowledge of the business as a whole had significantly increased and made them aware of a wider range of issues, in particular the need to sell the idea of introducing a new technology. They also felt they needed to sell the idea of change and to target the audience when putting forward new technologies or innovations. From a narrower perspective, they maintained that the courses they had undertaken had significantly improved their written communications and presentation skills.

It should be pointed out that the change program has not been introduced without consideration of need for organisational redesign. As the organisation grows and changes and more staff becomes multiskilled, senior management has recognised the need for all staff at all levels to use their newly acquired skills and knowledge. As a consequence, there has been created what one senior project manager called "a better understanding of what we've put in place to ensure the flexibility of the organisation … an actual organisational design that allows you to shorten lead times bringing manufacturing and design together".

Case Study 2

Over the last ten years, many companies particularly in the manufacturing sector, have undergone downsizing, restructuring and reorganisation. As a result most firms have fewer employees and need to ensure that the employees they do have are multi-skilled and able to adapt and respond to ongoing changes faced. One of the ways organisations can achieve this is by moving towards the implementation of a learning organisation.

However, for most firms the change to a learning organisation requires substantial changes in organisational culture. According to Buhler (1996), to survive in the 90's and prepare for the challenge of the 21st century, businesses must change the fundamental ways in which they operate, and these changes will unavoidably affect organisational culture. But as Galpin (1996) points out, achieving sustainable organisational change is extremely difficult and many organisations fail to reach their goals at the operational level. This usually occurs at the implementation stage of organisational change programs, because employees and production managers are too busy getting the job done, making sure products are ready on time, and dealing with day to day problems to focus on new ways of operating. However, Galpin (1996) argues that effective implementation needs to change the way work is done through the organisation's operations, systems and procedures, and this is inextricably linked to an organisation's culture.

Organisations that successfully implement change claim they understand that their most important resource is people. However, through the processes of restructuring and downsizing there are fewer people doing as much if not more than before. To survive with fewer people, Buhler (1996) argues that organisations must utilise teams and they must do this across functions to reduce costs, improve quality and introduce new processes. However forming teams is more than simply throwing a group of people together and telling them they are a team. People need to understand what is required of them and how they are expected to do their jobs in the team. Organisations need to ensure that employees have the training necessary to function as part of a team, and have acquired the skills they need to carry out all aspects of their jobs. The effectiveness of training is the result of careful planning and understanding how people react to change.

In the mid 1990s, an Australian cable manufacturer set about to develop this new company culture through changing the relationships that existed between production employees and management. According to Atkinson (1994), for any change initiative to be effective and sustainable it should be simple to understand. More importantly people need to not only know where they fit in and the role they should play, but their individual importance and role in the change. Once employees accept the need for change, they then need to have the skills necessary to ensure the success of the change process. Furthermore, to ensure employees have the necessary skills, firms need to take inventory of their in-house training capabilities and determine what the organisation can deliver and what needs to be outsourced, rather than expecting an unprepared training department to implement essential training. Finally, employees should not be forced or coerced into aggressive and mandatory training programmes that cause stress and disrupt operations. Rather, training should, where possible be carried out in-house in a non-threatening environment.

To create a learning organisation at the operator level and particularly in the manufacturing is a difficult task as companies have traditionally expected workers to follow procedures and do what they are told. In the case of the cable manufacturing company, the training manger set out to create a learning environment that allowed machine operators to carry out machine maintenance without the supervision or assistance of specialist maintenance staff. To demonstrate the viability of such an idea the company established a pilot project. It was necessary for the company to demonstrate to employees not involved in the trial program that it was a success and to give the trainees who had completed the courses an opportunity to show that they were indeed competent to undertake maintenance tasks. One of the principle differences with the "operator maintenance" role is that it clarifies what maintenance they can do. As Bunning (1992) points out, the success of an action learning experience involves a real project. That is, the project has to be something that needs fixing, and somebody with power and influence needs to care about the project. Also, the project needs to have a more senior person in the organisation sponsor it if it is to be fully integrated with organisational power and politics.

Furthermore, Bunning (1992) maintains that there is little point in learning if there are always barriers to putting the learning to use. Although there will always be inertia, complacency and conservatism in large organisations, it is still possible to have a culture which supports change, values training, and genuinely empowers its employees.

During the Christmas shut down, it was decided that volunteers from a single factory at the company would be asked to work on a major maintenance project. The opportunity to use operator maintenance employees came as a result of implementing TPM [Total Process Management]. The TPM program was seen by the company as a way to make its manufacturing operations more competitive. It focused on the manufacturing process in a logical way, having similar principles to the Total Quality Management and Value Added Management programs previously implemented. This program was seen as linking well with the industry's competency-based development structure for employees, and had shopfloor support as can be seen in the following comments made by the National Union of Workers factory delegate:

> *The point is that TPM is time-consuming and needs commitment - you have to keep going with it, otherwise it will fall by the wayside. Our aim is to get the machines working the way we want - like when they were new. It's like having a car that's well maintained: you get the best out of it and you're proud of it.*

This was the first pilot project and it was decided to do a complete 'clean and inspect' on the process P24-217 (a tandemised wire drawing and insulation process which is PLC controlled and highly automated). A determined effort was made to involve as many of the operators who had been undergoing preventative maintenance training as possible. The first stage of the project involved identifying and tagging any problem or opportunity for improving the process. The machine operators then set about fixing the problems.

At the end of the first stage, 158 tags had been issued identifying problems ranging from oil leaks, improvement opportunities such as moving gauges so they were at eye level and correctly aligned, to cleaning and tidying. Of the 158 tags, 106 were defects, most of which were mechanical. Over the next two weeks, operators worked alongside maintenance tradespeople, supervisors and managers to fix every fault and ensure that as many tags as possible were removed.

The operational maintenance employees fixed eighty percent of the mechanical defects, with the remainder being remedied by a combination of the trade and operational maintenance employees. Many of the operational maintenance employees were so motivated that they moved unprompted to other processes to do mechanical maintenance. To ensure that everyone was aware of the enormity of the project, before and after photographs were taken of the entire shopfloor. During the project, workers offered suggestions for further improvements, and it was apparent everyone involved took pride in a job well done.

After the project was completed, senior managers came down to the factory floor to congratulate everyone on a great job. Workers went back to their own machines and voluntarily began to clean them up and take greater pride in their work. A special display book was made up of the before and after shots, and supervisors and managers presented these to other managers at a management meeting. Once operators had learned to maintain the machines, management made a strategic decision to outsource the maintenance function. This resulted in a dramatic downsizing of maintenance personnel.

Conclusions

So, what connections can there be between the planned "brain-drain" and organisational learning? Are they contradictory or complementary concepts?

As can be seen from the aerospace example, a company can recover from the deleterious effects of downsizing to become a successful learning organisation. This company clearly recognised the need to improve the capability of their managers and supervisors in a changing environment. They also recognised the importance of encouraging people to learn and challenge old assumptions. By entering into an alliance with a tertiary education provider, they were able to ensure that staff who successfully complete targeted education programs were rewarded with an accredited certificate or even a Masters degree from a university. By seeking to become a learning organization they identified a corporate strategy and organizational support structure that enabled ongoing learning to take place.

Most managers slowly develop the skills they need to manage a business. For those firms and managers who want to fast track the learning process they need to identify their needs and the needs of their organization and then find a program that meets these needs. This company successfully accomplished this.

Using Weick's (1995) framework, the company has successfully undertaken a change management program and deliberately introduced three of the four levels of Weick's framework. The generic level may also exist in practice, however the research has not extended to this level of analysis at this stage. Whether or not the company could have been as successful if they had have implemented the team-based structure and University-based education and training program prior to or even without the downsizing is something that will never be known.

Any organisation seeking to radically change a culture that has been ingrained over a period of thirty plus years faces enormous challenges. While many organisations have recognised the need to multiskill operational staff, many have forgotten or ignored the need to *involve* staff at all levels of the organization in multiskilling. In the case of the cable manufacturer, organisations that have multiskilled operational staff can achieve significant improvements in the efficiency, productivity and capability of their employees.

In this case, the downsizing occurred *after* the move to shared knowledge and multiskilling. It can be argued that it was only possible because of the learning program. The move to outsourcing apparently did not result in significant amounts of irreplaceable knowledge capital walking out the door. Rather, through the meaningful involvement of key stakeholders and positive sponsorship of senior management, it is apparent that a culture change appeared to take place. Again using Weick's (1995) framework, there has clearly been an enhancement of the intra- and intersubjective levels of learning, amongst operators, maintenance tradespeople supervisors, and managers. It also seems clear that there has been an enhancement of learning at the extrasubjective level. The generic level may also exist in practice, however the place of storage of knowledge seems predominantly within people's heads.

With both of these case studies, there would appear to be elements of a learning organisation. In terms of Beck's (1989) definition, there is evidence that both companies have facilitated learning and development of their employees, as well as transforming themselves. To what is extent is arguable, however, as there are no true learning organisations (Daft, 1997), it is somewhat academic. The integration of learning into appropriate systems, structures, routines and culture is the engine room of the process (Burgoyne, 1995; Crossan et al., 1993), and to a greater or lesser extent, that has been demonstrated here. Further, the team aspect (Senge, 1990) of learning organisations has also been incorporated into both cases.

It is possible, however, that the conclusions described here are not generalisable to all types of organizations. In tightly coupled, bureaucratic organizations with deeply embedded formal structures and generic scripts, learning networks tend to mirror the formal structure (Ibarra, 1992). In such cases generic control dominates, and intersubjectivity becomes secondary (Weick, 1995). Organizational learning and memory in such organizations are formalized at the generic level in concrete policies, structures, and routines, and informal structures correspond closely with formal hierarchy and functional workgroups. This makes network connections highly visible and limits the risk of unintentional downsizing damage.

Conversely, organizations in turbulent industries such as those described above with heavy reliance on innovation have a higher stake in organizational learning (Prahalad and Hamel, 1990). The loosely coupled nature of such organizations, with their relatively flat formal structures and dependence on the creativity that is generated at the intersubjective level, makes them highly vulnerable to the hidden damage of downsizing. Organic organizations such as these have been found to contain networks high in density and connectivity (Brass, 1995), and critical activities in such organizations "are frequently initiated, organized, and implemented outside the domain of formal approval processes" (Ibarra, 1992, p.176). These network-dependent organizations are at greatest risk of unexpected learning damage when removing or moving personnel.

In this paper we have asserted that organisational downsizing or planned 'brain-drain' may seriously damage the learning capacity of organizations. We have also shown that this is not necessarily the case, given the implementation of appropriate organisational strategies to analyse the impact of downsizing and restructuring on learning networks - both formal and informal-before implementing these strategies.

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