Australian Bulletin Of Labour Vol 24. No 4, pp 279-294. Dec, 1998

The Workplace of the Future: Insights from Futures Scenarios and Today's High Performance Workplaces

Richard Curtain
Curtain Consulting, Melbourne

> ...it is pointless to try to predict the future...But it is possible -and fruitful - to identify major events that have already happened, irrevocably, and that will have predictable effects in the next decade or two. It is possible, in other words, to identify and prepare for the future that has already happened (Drucker, P. "The Future That Has Happened Already" *Harvard Business Review*. 1997 Sept.-Oct., 20.).

Introduction

Lack of information among the workforce about the future direction of technological and organisation change in the workplace provides the basis for a growing fear of the unknown. Concern over job security is an increasingly common feature of the attitudes of employees world wide (Government of Canada 1997: 23-25). Large representative surveys conducted by researchers at ANU show that the number of persons in Australia who believe that their jobs are insecure has increased markedly between 1989 and 1996/97 (Kelley, Evans and Dawkins 1998). In 1989/90, 73 per cent of Australians in work reported that they had secure jobs. However, by 1996.97, this proportion had fallen to 56 per cent (Kelley, Evans and Dawkins 1998:2). The 1995 Australian Workplace Industrial Relations Survey showed that 31 per cent of employees in workplaces of 20 or more employees agreed with the statement: "I feel insecure about my future here" (Morehead et al1997: 282).

Workplace change over the last decade has caused many in the workforce to react with fear and caution about the future. This holds true for white collar workers as well as blue collar workers, for younger as well as older employees, for the more educated as well as the less educated, for men slightly more than women and for union members as well as non union members (Kelley, Evans and Dawkins 1998: 3-4; Morehead et al 1997: 282 and Table A12.15a). However, the fear of job loss is often more widely felt than the actual number of employees affected. ABS national data for a three-year period to July 1997 show in fact that only 7 per cent of Australians in jobs had been retrenched or made redundant over this period (ABS 1998).

Economic insecurity has always been a feature of market-based economies. What is new is the decline in the safety net mechanisms that developed in the post war period to help the workforce cope with economic uncertainty. For example, the insecurity of blue collar workers is feed by the decline of industry-wide industrial awards that supported occupational labour markets. These occupational labour markets defined their skills and buttressed their bargaining power in the face of the ups and downs of the marketplace (Curtain 1987).

New safety net mechanisms are needed to help address the uncertainty of the future. An understanding of the likely contours of future working arrangements can help individuals, both employees and employers, and their representative bodies to devise appropriate strategies. These strategies can restore a degree of confidence in the workforce about how best to face the uncertainties of the future.

Two possible approaches can be used to suggest what the workplace of the future might look like. One is to use a scenario planning methodology to tap of the ideas of individuals likely to be knowledgeable about future trends. Scenario planning starts from the assumption that the future cannot be identified without any certainty and, therefore, the best approach is to postulate various potential scenarios that might emerge (Schwartz 1991). Scenario planning employs a range of techniques-research, brainstorming, story telling-and attempts to sketch a series of narrative accounts which delineate the boundaries of what could conceivably occur going forward. It is a technique used by large corporations and others since the mid 1980s to identify possible future trends (see Wack 1985, Schwartz 1991). Royal Dutch Shell has been a leading exponent through scenario planning through "Planning as Learning" and "thinking the unthinkable"(de Geus 1988). The same technique has also been used to develop three very different scenarios for a national economy - Japan (Nakamae 1998).

A less speculative approach to predicting the future is to use survey data and case studies to identify the characteristics of high performance workplaces. This approach is based on the assumption that workplaces that are doing well in the marketplace will be more likely to survive into the future. It is an approach that follows more closely Drucker's advice to describe the future in terms of what has already happened (Drucker 1997). However, the major shortcoming to extrapolating from a profile of workplaces that are currently high performers is that they may not remain so if market conditions change markedly.

The following sections of the paper report the results of studies using these two approaches. Information on the futures scenarios are summarised from the outputs of a process that involved nearly 700 US senior executives, academics and consultants in 10 separate meetings in 1995-96. Evidence on the characteristics of high performance workplaces derives from analysis of large scale survey data in the USA and Australia. In particular, it presents an original analysis of data from the 1995 Australian Workplace Industrial Relations Survey (AWIRS) to identify the key features of high performance workplaces in Australia. The conclusion draws together some key insights about future working arrangements that emerge from the scenarios and survey results.

Two Futures Scenarios

The Sloan School of Management at the Massachusetts Institute of Technology (MIT) in 1994 started a research and education initiative called "Inventing the Organizations of the Twenty First Century." A key activity for this initiative was to develop a series of coherent scenarios of possible future organizations (Laubacher and Malone 1997a and 1997b; Malone and Laubacher 1998). The scenarios are not intended as predictions, but rather as visions of potential alternative ways of organizing work and structuring business enterprises in the next century.

The original scenarios were developed by thirteen members of the MIT faculty and research

staff with Peter Schwartz of Global Business Network, a consulting firm which specializes in scenario planning, serving as facilitator. The time horizon was from 1994 to the year 2015. The focus is on future ways of organising work and the effects of future organisational forms on both economic and non-economic aspects of life, and on both individuals and society. The two scenarios emerged from the process called "Shifting Networks of Individuals and Small Firms and Corporations as All-Encompassing "Virtual Countries"? The first MIT scenario focused on individuals and small companies operating within large networks. The two key elements of this scenario are the fluid networks for organising tasks and the more stable communities to which people belong as they move from project to project.

Scenario One suggests that by the year 2015, nearly every task is performed by autonomous teams of one to ten people, set up as independent contractors or small enterprises, linked by networks. These teams come together in temporary combinations for various projects, and dissolving once the work is done. When a project needs to be undertaken, requests for proposal are issued or jobs to be done are advertised, candidate enterprises respond, subcontractors are selected, and workers are hired largely on an ad-hoc basis.

The production of motion pictures has long been carried out through the use of temporary enterprises operating on a project basis (Laubacher and Malone 1997a:9-14). A recent study of the film production process has shown the importance of human and social capital in this project based work. The study shows how substantial intellectual capital is embodied in individual free-agent careers and mobilized within communities of professional and industry practice (DeFillippi and Arthur 1998).

Scenario One also suggests that the world would be a lonely and unsatisfying place if all interactions in the marketplace are purely contractual. Laubacher, and Malone (1997b) outline how it is likely that independent organizations will become more important in the future for social networking, learning, reputation-building, and income smoothing. These independent organizations could be based on professional societies, university alumni associations, unions, clubs, neighbourhoods, families, and churches. Many may be similar to the writers' and actors' guilds of Hollywood. Their functions could include providing access to a pension fund. Other group services might be learning opportunities or group arrangements to help fund upgrading the intellectual capital of the "contingent worker". It is suggested, however, that the most important function of these independent organisations will be to provide a sense of identity and belonging to stable communities.

The second MIT scenario for the year 2015 envisages huge corporations as virtual countries (Laubacher and Malone 1997a:14-22). Scenario Two posits a world economy dominated by large conglomerates which operate globally across many industries. There will be a small number of large core enterprises that are holding companies occupying a position at the centre of the economy by selling products or services with widely recognized brand names. These companies in turn will have a series of permanent or semi-permanent relationships with various smaller supplier enterprises. The supplier enterprises will stand at the periphery of the system. The industry structure in most sectors will be oligopolistic, with a small number of major competitors holding dominant positions, and high entry barriers preventing newcomers from challenging the hegemony of market leaders (Laubacher, and Malone 1997a:16).

The second scenario has four major elements: large vertically and horizontally integrated

enterprises; a pervasive role of enterprises in employees' lives; employee ownership of enterprises; and employee selection of the company management. According the MIT second scenario, large corporations, operating in keiretsu-style alliances with companies in almost every industry, will have minimal national allegiance. These global corporations are not tied to any geographic location. Their power derives from access to knowledge and networks. Specialist "organization designers" travel through the massive alliances, brokering partnerships and helping make sure that people communicate effectively across boundaries. Employees of these corporations work in virtual teams through e-mail, telephone and video conferencing.

Scenario Two postulates that employees will own the enterprises in which they work, through superannuation funds, stock options, employee share ownership plans and other mechanisms. Scenario Two also suggests that many of the corporations of the twenty-first century will move to representative governance. Employees as shareholders will have the right to elect the management of the company, not just the board of directors, but managers at almost every level throughout the organization. Decisions will continue to be made hierarchically but the management team is selected through regular elections. Information is likely to be readily available to all employees through "open-books" financial reports, which provide a constantly-updated overview of the business's priorities and assets.

Supporting Evidence

The first scenario highlights the temporary nature of many jobs in the future. This reflects a continuation of a trend evident in Australia for the last decade and more. For example, casual employees, as defined by the ABS, have nearly doubled their number since 1984, accounting for 1,653,300 employees to August 1995, increasing from 16 per cent of employment in 1984 to 20 per cent in 1995. An ABS survey in NSW in 1997 showed that 25 per cent of all employed persons were employed on a part-time, casual or temporary basis. The same survey also showed that 33 per cent of these employees were employed on a regular casual basis, 23 per cent employed as permanent part-time workers and 22 per cent were employed on a casual full-time basis (ABSb 1998).

A more accurate indication of temporary employment that does not use the industrially ambiguous term of “casual” employees comes from the 1998 ABS Labour Mobility Survey. The proportion of people who have been in their current job for less than one year increased from 20 per cent 1992 to 24 per cent in 1996 but had returned to 22 per cent in 1998 (ABS 1998c). The same data also show that 14 per cent of the workforce changed jobs during the previous year and 8 per cent had had no previous job during the year. Other ABS data show that self-employment has increased from 922,700 persons in August 1978 to 1,230,200 persons in August 1995, or 15 percent of all employed persons. Persons from this group who are self-employed on their "own account" number 850,200 or 11 per cent of total employment in August 1995 (Curtain 1996).

The second scenario is confirmed by recent data on the trend to increasing numbers of mergers in the USA. According to Fortune Magazine, mergers for 1998 in the US worth $US662 billion have been announced to May. This amount is already two-thirds of the 1997 total. The US$938 billion in announced deals in 1997 surpassed the 1996 record by 40 per cent. Merger transactions worth US$157 billion-dollars in 1997 dwarfed the value of mergers

in 1992. The major sectors experiencing takeover activity are telecommunications, banking and financial services including investment & commodity firms, dealers and exchange groups and waste management.

Although between a third of all mergers in the US (and close to a half of the proposed mergers in Australia) do not succeed, they nevertheless indicate an important strategy on the part of large companies to increase their capacity to compete in world markets. President Clinton recently stated that privatisation and the globalisation of industries have "put a premium on bigness, partly so you can afford to get into new market areas, partly so you can afford to handle the bad years..."(Ryan AFR Weekend Edition 1998, May 30-31, p22).

Evidence of the trend identified in second MIT scenario is the radical outsourcing that is now used to produce everyday consumer products such as athletic shoes, computers and software. The practices of the athletic shoe company Nike are widely known. Nike subcontracts manufacturing, shipping, and distribution, keeping only the design and marketing functions in-house. Dell Computers sells computers directly to customers by building products to order by using an extensive network of suppliers. Dell Computer Corporation has grown to a US$12 billon company in 13 years by coordinating the purchase of computer components in response to a specific order from a customer. The company is not a manufacturer in its own right but practises what is called "virtual integration". This is done by coordinating the products of different manufacturers through supplier partnerships to obtain the advantages of a tightly controlled supply chain and just in time manufacturing. Through their focus on customer requirements, they are able to achieve mass customisation of their product (Magretta 1998).

The trend to outsourcing is based on the current enterprise strategy in vogue of seeking to focus more on what they do best. Outsourcing is therefore likely to be a particular feature of enterprises operating in international markets. A 1996 survey in the US reported that more than 90 percent of organizations outsourced at least one activity (Bassi, Cheney, and Van Buren, 1997). According to a recent survey, US companies spent about $100 billion outsourcing various business functions in 1996. By 2001, that figure is expected to rise to $318 billion (Bassi, Cheney, and Van Buren, 1997). The most common activities outsourced are human resources related activities such as training and development, followed by logistics and information technology (Bassi, Cheney, and Van Buren, 1997).

Key features of high performance workplaces based on overseas and Australian data

A primary source of information in Australia on high performing or best practice workplaces has been from case studies. However, the selection of these case studies has often been on the basis of what is assumed to be best practice initiatives. The focus has been on inputs and not outcomes. There is usually no attention paid to data on whether the workplace is performing ahead of its competitors. Aggregate survey data on workplaces can overcome this problem by first defining what a high performance workplace is and then looking at its associated characteristics.

Research on the characteristics of high performance workplaces in Australia and overseas offers insights into future trends by extrapolating from emerging structures and processes as identified through survey research. However, this method of predicting future workplaces

has several limitations. The data sets used data from 1994-1995 and so may not capture the information on very recent enterprises. The size of the workplaces sampled (20 or more employees) may also exclude new enterprises in the early stages of growth. In addition, the fixed response questionnaires may offer only a partial indication of the changes taking place.

A focus on existing successful enterprises may also only highlight those enterprises that are doing well in today's markets but may not be successful in different market conditions in the future. Many "visionary" companies that are highly successful have strong corporate cultures that emphasise adherence to company goals and cohesiveness within the group. While such corporate cultures can improve effort, morale, and productivity, points out, they also tend to thwart innovation--limiting not only the expression of "original" ideas, but even their production (Nemeth 1997). Emerging, more decentralised enterprises, not yet defined as successful or high performing, may be more tolerant of internal dissent. These enterprises may be better able to stimulate internal decision making, generate innovation and hence be more likely to thrive in the future (Nemeth 1997).

Key features of high performance in US manufacturing workplaces

Relatively little information is available from large scale representative survey data on the characteristics of high performance workplaces in the US (Gephart 1995, Smith 1997, Lester 1998:217). Black and Lynch (1997) use data from a nationally representative sample of more than 1,500 US manufacturing workplaces conducted in 1994 by the US Census Bureau. Their results show that workplaces with higher labour productivity are more likely to have an R & D facility in their enterprise. Similarly, workplaces with non–managerial employees who use computers and who received training are strongly associated with higher labour productivity. Manufacturing plants with profit-sharing plans for non-managerial employees have 7 per cent higher labour productivity than their competitors. In contrast, workplaces with higher employee turnover have lower productivity. Comparison of performance with other workplaces through benchmarking is also a feature of the workplaces with higher labour productivity.

Lynch and Black's analysis also shows that higher workplace productivity is only associated with new forms of work organisation if they are accompanied by increased employee participation. Their results show that unionised plants with traditional manager–worker relations have extremely low productivity. Unionised plants that have adopted new workplace practices such as incentive–based pay systems and employee participation are not only more productive than their old–fashioned unionised peers. They also outperform non–union plants that have adopted similar new workplace practices. Productivity in unionised workplaces that have introduced formal quality programs and forums for regularly discussing issues is 20 per cent above the baseline. However, the adoption of the same high performance techniques in non union workplaces only yields a 10 per cent improvement in productivity over the baseline (Wallich 1998).

US evidence also shows that new forms of work organisation are associated with higher productivity performance but only if part of an integrated strategy. A study of fifty one steel plants in the US examined the effects of different human resource practices on productivity (Ichniowski, Shaw and Prennushi 1995). The results show that individual initiatives such as work teams, quality circles and incentive pay schemes do not have much impact on performance. However, when several of these measures are present, the overall effect on productivity is more significant. Thus the impact on performance is greater than the sum of

its parts where individual work practices are mutually reinforcing or integrated with each other (Lester 1998:220).

A study of sixty-two automotive plants around the work showed "bundles" of high performance human resource practices are associated with higher assembly plant productivity (fewer assembly hours per vehicle produced) and improved quality (MacDuffie 1995). The study also shows that the benefit of these human resource policies is greatest when they are integrated a flexible, lean production system (MacDuffie 1995: 218).

The above research based on cross-industry surveys and industry-specific studies in the US suggest several broad conclusions about the characteristics of high performance workplaces (Lester 1998; 218). These generalisations can be summarised as follows.

- There is no single set of work practices that can be identified as likely to produce high performance outcomes.
- Any single work change initiative is likely to have little impact on productivity if implemented in isolation.
- Combinations of internally consistent changes to work appear to act synergistically, producing effects on productivity that are larger than the sum of the individual work change initiatives.
- An internally consistent set of work practice changes is most likely to be effective when they are linked to an enterprise's competitive strategy and culture.
- However, relatively few workplaces in the US are fully committed to major workplace change and improvement.

Australian Survey Data on High Performance Workplaces

The *1995 Survey of Innovation and Firm Performance in Australian Manufacturing* reaches similar conclusions about the characteristics of innovative workplaces. The survey was conducted by the ABS and is based on 4, 537 establishments. Innovativeness was defined as the share of an enterprise's sales attributable to new or changed products and/or processes. Analysis showed that of the enterprises displaying levels of high innovation undertook both product and process innovation. The enterprises displaying higher levels of innovativeness are more likely to have introduced non-technological (organisational and managerial) innovation as well (Phillips 1997: xi). Enterprises that have introduced an organisational or managerial innovation exhibit significantly better sales growth than those that have not (Phillips 1997: xiv).

Innovative enterprises in manufacturing are more likely to have a R&D capability. This allows them not only to develop their own technology but also to modify and adapt purchased technology. Innovative enterprises are more likely to develop new manufacturing processes as a key element in developing new products. These results suggest that higher performing workplaces (based on a better sales performance than other enterprises) are associated with a combination of factors. These include innovative processes in the workplace as well as innovative products.

A comparison in 1994 of 1,400 manufacturing workplaces in Australian and New Zealand

identified the characteristics of the top 20 per cent of workplaces designated as "leaders" compared with the bottom 20 per cent designated as "laggers" (Australian Manufacturing Council 1994). The study found that "no identifiable hierarchy of practices that can be recommended to an enterprise wanting to pursue best practice". The study did, however, find that the "leader" workplaces had more effective processes for implementing a customer focus. Examples of these processes were ways of resolving customer complaints, systematic measurement of customer satisfaction and the involvement of customers in the design of new products and services (AMC 1994:iii).

Identifying High Performance Workplaces in Australia using AWIRS

A multivariate analysis of the 2001 workplaces surveyed in the Australian Workplace Industrial Relations Survey was carried out to identify the key features associated with workplaces that are strong performers. The high performance workplaces were identified in terms of having achieved recent significant improvements to labour productivity in the last two years and with expanding product demand or recent (in the last two years) capital investment.

The category of high performing or high performance workplaces was further expanded to include workplaces where labour productivity was "a lot higher compared with two years earlier" and "demand for their main product was expanding". This group accounted for another 11 percent. A third category was also added which covered workplaces where labour productivity was a lot higher compared with two years earlier and although demand for their main product was not expanding, expenditure on equipment and premises had increased substantially over the last two years. This group accounted for 5 per cent of all workplaces. The three groups together accounted for 27 per cent of all workplaces with 20 or more employees.

Key features of high performance workplaces

A multivariate analysis showed that seven characteristics are associated with workplaces that are performing well. It is useful to consider these in terms of the two levels at which workplaces function: the strategies pursued at the enterprise level and the ways in which work is organised at the workplace level.

At the level of enterprise strategy, multivariate analysis shows that there is an association between high performance workplaces and a strong emphasis by management on the cultivation of a corporate ethos/culture. There is also a strong association between high performance and the perception by management that resources are devoted to the management of human resources. Managerial perception that employee relations were good was also more strongly associated with high performance workplaces.

Multivariate analysis also shows a strong association between recent major organisation and technological change and high performing workplaces. The organisational change variable was measured by combining responses to two questions. The first was whether there had been in the last two years a major reorganisation of their workplace (such as changing the numbers of management levels or restructuring who divisions/sectors). The second item used to denote organisation change was whether there have been major changes in the last two years in how non–managerial employees do their work (such as changes to the range of tasks performed or the type of work done). Technological change was measured by combining the

positive responses from workplaces in relation to the purchase in the last two years of major new plant or office equipment.

Several features related to the organisation of work at the workplace level can also be identified. High performance workplaces are more likely to be associated with the requirement for employees to work flexible working hours and to have increased their operating hours in the 12 months to survey. They are also more likely to have employees on fixed term contracts. High performance workplaces are more likely to have some workers working on shift work or being available on call. High performance workplaces are also more likely to be associated with increased responsibility for employees through team work through existence of semi autonomous work teams.

Another feature of high performance workplaces is the greater likelihood of the use of non financial key performance indicators. These are often used to benchmark customer service satisfaction. High performance workplaces are also more likely to measure labour productivity regularly at the level of a department or section and to have KPIs designed by employees at the workplace.

Wooden and Hawke (1997) have compared the characteristics of the same workplaces in both AWIR surveys that grew in their employment between 1990 and 1995. Their results showed that the important factors in explaining employment are: growth size of the workplace (smaller workplaces are more likely to grow in employment), demand for main products and an export orientation are. Their analysis, however, also shows that workplace autonomy is also a key factor in explaining employment. Employment growth is more likely to be associated with workplaces that have both a high initial level of autonomy in 1990 as well as an increase in autonomy between 1990 and 1995. This result suggests strongly that the more autonomous the workplace, the more likely it will grow in employment (Wooden and Hawke 1997).

Conclusion

The futures scenarios and the profile of high performance workplaces, albeit somewhat disjointed, offer some key insights in the workplace of the future. The scenarios start from a point far off in the future and ask participants to imagine what they think work arrangements will be like. In several respects, the pictures painted in the two scenarios are extensions of current trends: temporary project-based work and the further growth of large enterprises. Nevertheless, they highlight what may be a trend in particular sectors at present as a phenomenon that will become more widespread.

The scenarios, however, also suggest two developments that are new. The first scenario highlighted the potential emergence of non market organisations to provide a source of stable identity and community for temporary project workers. The fostering of these independent entities can provide a valuable safety net against the vagaries of employment conditions. The second scenario emphasised the emergence of networks of more or less autonomous enterprises linked in some way to large conglomerates. The variety of these network relationships is in marked contrast to the past when most companies formed their organisations around product clusters, investments, geographical needs or management functions with the emphasis on control (Quinn 1997). New communications technology is likely to promote the design and management of much more highly disaggregated, network organisations (Quinn 1997). However, autonomy and trust are more likely to be the new

dominant operating modes of flexible enterprises/networks rather than the centralised control strategies of the past (Lorenz 1992).

The evidence from large scale survey data offers some pointers to the characteristics of high performance workplaces in the US and Australia. The US and Australian survey results suggest that high performance manufacturing workplaces in the future are more likely to be associated with the fostering of intellectual capital through research and development. Knowledge management through the widespread use of computers by all employees will also be important. Mechanisms to capture the tacit knowledge of the workforce through the use of quality systems are likely to be a prominent feature in the future of not only manufacturing but also service sector workplaces. US evidence also suggests that this leveraging of tacit knowledge is likely to be more successful if it closely involves the workforce through various mechanisms to foster participation, including supportive unions.

Another indicator of a future trend is the managerial perception that in high performance workplaces considerable resources are devoted to the management of human resources within the enterprise. This is not to suggest that the workplace will be all sweetness and light. Flexible working arrangements are likely to be an important feature of the workplace of the future. This will require working at times that best meet the needs of customers. A high degree of inter personal flexibility is likely to be also necessary. This may involve working in teams that are responsible for setting their own performance targets. Non financial Key Performance Indicators (KPIs), particularly in relation to customer satisfaction, are likely to play a major role in shaping the day-to-day work focus.

Both US and Australian data identified the pursuit of an integrated strategy of change as a key characteristic of high performance workplaces. The evidence shows that innovative Australian enterprises are likely to combine the use of new work processes with the development of new products. US evidence, in particular, suggests that workplaces of the future will not be homogenous in terms of their work practices. Each workplace will forge its own combination of produce and process innovation. Nevertheless, it is possible to generalise about some elements of work organisation likely to be prevalent in the future.

Work in the future is likely to require, for the most part, higher skill levels than in the past, based on occupational trends over time (Adler 1997). For the work unit and relations between units, there is likely to be, according to Adler, an even greater emphasis on independence and teamwork, away from working conditions based on independence and autonomy(Adler 1997:62). This means that work teams will increasingly replace the individual as the basic unit of work organisation. In terms of horizontal relations, work units, based on past trends, are likely to become more specialised and therefore more dependent on a larger number and longer chain of suppliers within and outside the enterprise. The vertical dimension of work relations will also be important. This means that cross functional communication and coordination will be a crucial requirement of people working in ever more specialised work teams (Adler 62-63).

At the enterprise level, formal structures will continue to be the key means for developing, producing and coordinating the distribution of goods and services. However, successful formal structures in the future are more likely to be enabling than coercive (Adler and Borys 1996). However, it is clear that for enterprise structures and how work is organised, there will be no such thing as a steady state. Constant technological upgrades supported by continuous organisational and work changes will be the major defining features of the

workplace of the future. Compared with today's low incidence, high performance workplaces in the future will be more widespread in both the trade exposed sectors (where they tend to be concentrated now) and non exposed sectors of the economy.

These changes suggest that even greater numbers of employees in the future will feel uncertain and insecure in their jobs. This means that individuals, representative bodies and governments need to examine more closely the assumptions underlying these fears and to develop strategies to help individuals face the uncertainty. A focus on mechanisms to encourage all in the labour force to invest in their intellectual capital is one way to do this.

References

ABS (1998a) *Retrenchment and Redundancy, Australia, July 1997.* ABS Catalogue No. 6266.0

ABS (1998b) *Part-time, Casual and Temporary Employment, New South Wales,* October 1997. ABS Catalogue No. 6247.1

ABS (1998c) *Labour Mobility, Australia, February 1998.* ABS Catalogue No.6209.0

Adler, P (1997) "Work Organisation: from Taylorism to Teamwork", *Perspectives on Work,* Industrial Relations Research Association, Madison, Wisconsin

Adler, P; and Borys, B. (1996) "Two types of bureaucracy: enabling and coercive", *Administrative Science Quarterly*, 41: 61-89.

Australian Manufacturing Council (1994) *Leading the Way: A Study of Best Manufacturing Practices in Australia and New Zealand.* Australian Manufacturing Council, Melbourne

Bassi, L; Cheney, S; and Van Buren, M.(1997) *Training Industry Trends 1997*.American Society for Training and Development, Alexandria, Virginia

Black, S; and Lynch, L. (1997) "How to compete: the impact of workplace practices and information on productivity", *NBER Working Paper No 6120*, National Bureau of Economic Research, Boston.

Curtain, R. (1987) "Skill Formation and the Enterprise", *Labour & Industry* (1)1:8-38.

---------- (1996) *Meeting the Training Needs of Flexible Workers.* Canberra Institute of Technology, Canberra.

de Gues, A. (1988) "Planning as Learning," *Harvard Business Review*, 66, no. 2 (March-April), p70-74;

DeFillippi, R; and Arthur, M. (1998) "Paradox in Project-Based Enterprise: The Case of Film Making", *California Management Review*, Volume 39, No 2 (Winter)

Drucker, P. (1997) "The Future That Has Happened Already" *Harvard Business Review*. Sept.-Oct.,).

Gephart, M.. (1995) *The Road to High Performance.* American Society for Training and Development, Alexandria, Virginia

Government of Canada (1997) *Changing Workplace Strategies: Achieving Better Outcomes for Enterprises, Workers and Society.* Report on the International Conference organised by the Government of Canada and the OECD, Ottawa, Canada, 2-3 December, 1996.

Ichniowski, C; Shaw, K; & Prennushi, G (1995) The Effects of Human Resource Management Practices on Productivity, *NBER Working Paper No. 5333*. National Bureau of Economic Research, Boston.

Kelley, J; Evans, M; and Dawkins, P. (1998) "Job Security in the 1990s: How much is security worth to employees?", *Australian Social Monitor*, September,

Laubacher, R; Malone, T; and the MIT Scenario Working Group (1997a) Two Scenarios for 21st Century Organizations: Shifting Networks of Small Firms or All-Encompassing "Virtual Countries"? Sloan School of Management, Massachusetts Institute of Technology MIT Initiative on Inventing the Organizations of the 21st Century, Working Paper, 21C WP #001

Laubacher, R; and Malone, T. (1997b) "Flexible Work Arrangements and 21st Century Worker's Guilds", Initiative on Inventing the Organizations of the 21st Century Working Paper #004, Sloan School of Management, Massachusetts Institute of Technology, October.

Lester, R. (1998) *The Productive Edge: How US Industries are Pointing the Way to a New Era of Economic Growth.* W.W. Norton & Company, New York

Lorenz, E. (1992) "Trust and the Flexible Firm: International Comparisons", *Industrial Relations*, Vol 31, No 3: 455- 472.

MacDuffie, J. P. (1995), "Human Resource Bundles and Manufacturing Performance Organizational Logic and Flexible Production Systems in World Auto Industry", *Industrial and Labor Relations Review* , 48, No 2 (January).

Magretta, J. (1998), "The Power of Virtual Integration: An Interview with Dell Computer's Michael Dell", *Harvard Business Review,* (March–April) pp 73–84.

Morehead , A; Steele, M; Alexander, M; and Duffin, L. (1997) *Changes at Work: The 1995 Australian Workplace Industrial Relations Survey.* Longman, Melbourne.

Nakamae, T. (1998) "Three futures for Japan: views from 2020", *The Economist,* 20 March.

Nemeth, C. (1997) "Managing Innovation: When Less Is More", *California Management Review*, Volume 38, No 1 (Fall)

Phillips, T. (1997) *Innovation and Firm Performance in Australian Manufacturing*. Industry Commission Information Papers, AGPS, Canberra.

Quinn, J. B. (1997) "The intelligent organisation" *Seminar at Skandia Future Center* June 24th, Skandia Insurance Company Ltd website

Malone, T; and Laubacher, R. (1998) "The Dawn of the E-Lance Economy", *Harvard Business Review,* September-October

Schwartz, P. (1991) *The Art of the Long View: Planning for the Future in an Uncertain World* : Doubleday Currency New York.

Smith, V. (1997) “New forms of work organisation”, *Annual Review of Sociology*, 23: 315-39.

Wack, P. (1985) "Scenarios: Uncharted Waters Ahead," *Harvard Business Review*, 63, no. 5(September-October), p72-79.

Wallich, P. (1998) “Look for the Union label: new analysis of economic data shows that unionisation could maximise productivity”, *Scientific American*, Scientific American Web site.

Wooden, M; and Hawke, A. (1997) “Unions and Employment Growth in Australia: Panel Data Evidence”, *National Institute of Labour Studies Working Paper 146*, Flinders University, Adelaide.