The workplace of the future: implications for vocational training[1]

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An analysis of Australian and US data seeks to identify the likely characteristics of the workplace of the future and consider some of the implications for vocational training.

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Introduction

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The use of survey data and case studies to identify the characteristics of high performance workplaces is based on the assumption that workplaces doing well in terms of the markets in which they operate are more likely to survive into the future. 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, 1997). The focus of this article is on identifying and describing the characteristics of current high performance workplaces as a way of identifying the successful workplaces of the future.

In particular it presents original analysis from the Australian Workplace Industrial Relation Survey (AWIS) carried out in 1995 by the Federal Department of Industrial Relations. The AWIS is a national survey of 2001 workplaces of 20 or more employees. This analysis is complemented by a summary of main findings of four case studies of Australian-based international enterprises.

Key features of high performance workplaces in Australia and the US

Organisation and technological change

A multivariate analysis of the AWIS was conducted to identify the key features associated with workplaces that are high performers.[2] High performance workplaces were defined as those reporting significant improvements to labour productivity, expanding product demand, or recent capital investment, in the two years previous to the survey. The three groups together accounted for 27% of all workplaces with 20 or more employees.

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The AWIS points to a strong association between recent major organisational change and high performing workplaces. Workplaces that have undergone recent organisational change in terms of restructuring and changes to work for non-managerial employees are twice as likely to be a high performing workplace, all other factors held constant. In Australia, nearly all high-performance workplaces (93%) underwent some form of organisational change in the previous two years to the

1) This article is based on research undertaken for a report prepared for the State Government of Victoria by the Allen Consulting Group on future employment change issues. The views expressed in this article are entirely those of the author and are not to be taken as those expressed in the report. Some of the data analysis reported here has also been published in "The workplace of the future: insights from future scenarios and today's high performance workplaces", *Australian Bulletin of Labour*, November, 1998

2) The data analysis, based on the specifications of the authors, was carried out by Frances Robertson of NILS with the assistance of Mark Wooden.

"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, they also tend to thwart innovation by limiting not only the expression of 'original' ideas, but even their further development (...)."

survey. This compares to 77% of non-high performance workplaces. A related factor associated with high performance workplaces is recent technological change. This variable was constituted by combining positive responses from workplaces in relation to the purchase in the last two years of major new plant or office equipment.

Flexible working arrangements

High performance workplaces were also associated with flexible working arrangements. They were more likely to have increased their operating hours in the 12 months prior to the survey (26 percent of high performance workplaces compared with 16% of non-high performance workplaces). High performance workplaces are more likely to have shift workers or workers on call (70%) compared with non-high performance workplaces (60%). They were also more likely to be associated with the existence of semi-autonomous work teams.

Emphasis on corporate ethos and investment in human resources

The analysis of the AWIS also shows an association between high performance workplaces and a strong emphasis on corporate ethos/culture and the management of human resources. High performance workplaces are more likely to agree strongly (38%) that "the organisation devotes time to developing a corporate ethic and culture" compared with non-high performance workplaces (29%). Similarly, they are more likely to agree strongly (33%) with the statement that "this organisation currently devotes considerable resources to the management of human resources" compared with non-high performance workplaces (24%).

Good employee management relations

Related to the above findings, there is evidence of a strong association between having good employee management relations and being a high performance workplace. Manager respondents were asked in two different questions to rate employee management relations on a five-point scale from very good to very poor (with a 60% overlap for the same respondents). High performance workplaces are more likely to rate their employee management relations very good (50%) compared with non-high performance workplaces (41%).

Use of key performance indicators

High performance workplaces are more likely to use key performance indicators (60%) compared with non-high performance workplaces (53%). They are more likely to benchmark customer service satisfaction (80%) compared with non-high performance workplaces (72%) and to measure labour productivity regularly at the level of a department or section (54%) compared to non-high performance workplaces (48%). High performance workplaces are also more likely to have key performance indicators designed by employees at the workplace (46%) compared with non-high performance workplaces (36%).

Research on the characteristics of high performance workplaces in Australia offers insights into future trends by extrapolating from emerging structures and processes. However, this method of predicting future workplaces has several limitations.

The AWIS data are from 1994-1995 and so may not capture the information on very recent enterprises. The employment size of the workplaces sampled in the AWIS (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, they also tend to thwart innovation by limiting not only the expression of "original" ideas, but even their further development (Nemeth 1997). Emerging, more decentralised en-

terprises, 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 op.cit.).

Research in the US

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), but there are some similar results from the data available. 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% higher labour productivity than their competitors. 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, but 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%. However, the adoption of the same high performance techniques in non-union workplaces only yields a 10% 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 51 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).

A study of 62 automotive plants around the world 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, with a flexible, lean production system (MacDuffie 1995).

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). These generalisations can be summarised as follows:

❏ no single set of work practices 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

Key features of high performance enterprises in response to globalisation

Under strong competitive pressure to find the most effective strategy to reduce costs and maximise future position.

Adoption of world best practices is not merely desirable but a necessity for survival.

New emphasis on need to leverage codified knowledge as a competitive tool.

Growing emphasis on changing tacit knowledge of workforce into codified knowledge through use of quality systems.

Strong need for both workforce functional and numerical flexibility.

Move from maintaining harmonious industrial relations to the adoption of a Human Investment Strategy.

US are fully committed to major workplace change and improvement.

Based on an extrapolation of the above findings, it is possible to develop an idea of successful workplaces of the future. Organisational structures are likely to be smaller than at present and to operate in a highly autonomous way. They are likely to undergo constant technological and organisational change. This change is likely to be more productive if it closely involves the workforce through various mechanisms to foster participation, including supportive unions. The impetus for change is likely to focus on building a strong sense of cohesion based on agreed goals in the workplace. The careful management of human resources is also likely to be a prominent feature of the successful workplace of the future. Workforce flexibility in terms of both working hours and relations with fellow workers are also likely to be important. Performance measurement particularly in relation to non-financial measures such as customer satisfaction is likely to be a major driver of change.

High performance as a response to globalisation

Moving from the survey evidence, this section looks at what high-performance translates into in practice, again with a view to identifying, on the basis of practical evidence, the features of the workplace of the future.

The following discussion uses information from four case studies of high performance Australian companies and their response to the global economy. The enterprises studied were an Australian owned international bank, and three US owned international companies in petroleum, car manufacturing, and computer design, manufacturing and sales. Globalisation has several consequences for organisational structures and ways of working (see table).

Emerging global structures

Global operation for the enterprises studied involves transforming production, distribution and human resource systems, for example, to be able to operate from a common platform. New positions are usually established, such as global product managers, and new business units such as a global marketing group. This can involve rationalising product offerings and streamlining processes from sales and customer relationship management to revenue collection.

The move to global operation requires working out how to leverage common best practice processes across regional boundaries while still maintaining some degree of local flavour. A new balancing act may be required to operate common processes globally while managing regional markets locally.

The transition to a global company also requires a major effort to transform employees to perform in the new ways. This effort includes both extensive communications to ensure that people understand why and how they must change and training to equip employees with the knowledge and skills needed to operate at the new level. Employees in global business units need to understand in a comprehensive way the businesses in which they work. They are required to operate in virtual teams with loose managerial oversight. They need to be responsible for their own training and development. Communications, reward and recognition, and measurement systems need to be realigned to support global operations.

Finding the optimal organisational strategy

The case studies showed clearly that globally managed enterprises are under constant pressure to test which organisational form best suits their strategic goals. These include whether to change from a functional and area-based structure into a global company; "make or buy" (to retain in-house or to outsource); undertake acquisitions to enhance or add to the enterprise's core competences; set up franchise operations; form strategic alliances with other enterprises, or even to merge.

Importance of adopting world best practice

Exchanges of information about best practice took place in each of the enterprises studied. In the case of the oil company, the low cost of transferring information made it possible for a number of network groups to exchange information about their operations. Networking groups existed for refinery operations, refinery maintenance, refinery optimisation, refinery logistics, service station construction and retail marketing. It is recognised that functional expertise is ultimately to be found in the global company. It is expected that, in the future, operational advice from a global network would, for instance, be directly available to a plant operator in a control room.

Leveraging knowledge as a competitive tool

There is a growing recognition within the enterprises studied of the value of intangible assets such as customer and supplier relationships, technical support, R&D, management philosophy, distinctive competences of the enterprise, and operating systems. Leveraging knowledge as a competitive tool is emerging as an important strategy in several enterprises.

The key intangible assets of the computer company were its quality of management, products and services, innovativeness, long-term investment value, financial soundness, and ability to attract and keep talented people. It has been estimated that up to 60% of the computer company's market value was due to these intangible assets.

Importance of quality systems and diversity programmes

The bank, through its organisational change programme, used quality awards criteria to review work processes systematically across the organisation. These include all day-to-day activities, strategies and improvement initiatives. The emphasis was on "the continual improvement of all areas of the business – constantly challenging what is done and the way it is done." This process was backed by an interlocking team structure to provide a system for coaching, communicating and linking decision-making throughout the organisation.

The car company, internationally, had its own quality programme, aimed at turning it into a globally managed company focused on quality.

The computer company and the oil company had programmes aimed at maximising the potential of all employees to contribute to business success. The goals of the oil company programme were to have a workforce fully aligned to the company's business outcomes feeling able to contribute fully towards the oil company becoming number one, a workforce that recognised and valued a variety of work styles and approaches and was continually able to develop skills and competences.

Importance of workforce flexibility

Workforce flexibility, both functional and numerical, is a major theme for all the enterprises studied. The computer company required a high degree of flexibility in terms of employment arrangements for 30% of its workforce. It also expected flexible working arrangements through telecommuting by working from clients' premises. Some 40% of all computer company employees in Australia have laptops. Weekend work was also expected. Functional flexibility was also highly sought after not only technical skills, but also strong communication and team work competences.

Adoption of a human investment strategy

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Enterprises with a highly unionised workforce changed the conduct of industrial relations. This involved changing from working through external parties and its narrow focus on wages and conditions, to an enterprise focus with productivity and performance benchmarks of prime concern. Most initiatives have been implemented to foster greater diversity in the workforce, such as more family friendly policies and language training.

This new enterprise focus emphasised the development of teams and empowering individual team workers. The aim is a human investment strategy for the whole workforce. This entailed encouraging teams to manage their areas like a small business, solving problems, making decisions and being accountable for outcomes. In the car company studied, some 1,300 employees were given the opportunity to acquire a better understanding of business principles by undertaking "business acumen and business leadership" training.

In addition, in the car company considerable energy had been devoted to developing a broadly based and robust career development programme for the white-collar workforce. Many in the manufacturing workforce attended accredited training partly in their own time. It is planned to extend current practices for the white-collar workforce to the manufacturing workforce. This applies to performance appraisal and the undertaking of training and development activities. Managers and supervisors will increasingly be required to take responsibility for their own training and development.

In the oil company's refinery, management layers were reduced from 6 to 3; greater accountability for outcomes passed to team leaders and teams. Team leaders are expected to have high quality communication and interpersonal skills and all employees are encouraged to be "self-energised".

The computer company adopted a comprehensive human investment strategy. This may reflect the high proportion of tertiary graduates employed by the company and its tradition of valuing its engineering expertise. They placed a strong emphasis on career self-reliance. It selected and managed businesses with a goal of providing long-term employment and opportunities for personal growth and development. In return, people were expected to take initiative by managing their careers proactively, learning new skills and applying them to meet critical business needs. This included meeting and exceeding certain standards on the job, while adjusting to changes in assignments, schedules and the work environment.

Overview of high performance enterprises

The evidence from the surveys, reported above, offers, in a somewhat disconnected way, some pointers to the characteristics of high performance workplaces in the US and Australia. These pointers can be used to extrapolate current trends for the future. They suggest organisational structures are likely to operate in a more autonomous way than past practice. Successful workplaces of the future will seek to combine efforts to develop new products and services with innovative work organisation. The result is likely to be workplaces undergoing constant technological and organisational change.

US evidence suggests that this change is likely to be more productive if it closely involves the workforce through various mechanisms to foster participation, including supportive unions. Development of a strong corporate culture based on agreed goals will be another common feature.

The focus on individual employees as vehicles for investment to foster intellectual capital will be a prominent feature

of the future successful workplace. This is not to suggest that the workplace will be all sweetness and light. Workforce flexibility will be an important feature. 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 responsible for setting their own performance targets. Non-financial key performance indicators, particularly in relation to customer satisfaction, are likely to play a major role in shaping the day-to-day work focus.

The case studies offer a more comprehensive, holistic picture of what high performance looks like in practice. The evidence presented above of recent changes in response to the growth of the global knowledge economy highlights a number of likely key features of the workplace of the future. The most significant factor influencing the direction and structure of the large enterprises is the new structures being put in place to assist the move to globally based operations.

Associated with the exposure to global competition is the search by enterprises to find the best fit between organisational structure and the demands of the market in which the business unit is operating. Adoption of best practice in these circumstances becomes a necessity, not just a rhetorical expression of intention. Diverse organisational structures are likely to emerge to respond to a rapidly changing and diversified set of market conditions. However, a common feature of these new structures is likely to be much greater operating autonomy than has been past practice.

A key way in which enterprises, both large and small, are responding to operating in a global marketplace is to leverage knowledge as a competitive tool. The effect of operating in the global knowledge economy on the working lives of an enterprise's employees is significant. A high degree of workforce flexibility is expected. However, this has to be understood in the context of the primacy given by enterprises in this new operating environment to fostering their intellectual capital through a human investment strategy that encourages employees to manage their own career.

Implications for vocational training systems

Changes in the organisation of work are having a dramatic effect on vocational education in industrialised countries. The new knowledge-intensive economy poses challenges for systems previously seen as highly successful. Employment is becoming increasingly fluid, with occupational boundaries changing or dissolving. Organisations are seeking to promote learning and at the same time reduce the cost of training through "on-line learning" (Stern 1998).

In many ways, the new knowledge economy is built on a shift in organisations away from top-down hierarchical structures to flatter structures such as networks and autonomous teams. Top-down hierarchies are particularly suited to producing or providing standardised goods and services. Knowledge production requires looser forms of organisation that give greater recognition to personal autonomy and self-direction of the mind (Stiglitz 1998). Knowledge is best acquired through the active involvement of the learner and not through passive rote memorisation. Within enterprises, there is a strong emphasis on independence and teamwork, away from working conditions based on independence and autonomy. Cross-functional communication and coordination is increasingly seen as a crucial requirement of people working in ever more specialised work teams.

Central command structures give way to semi-autonomous teams horizontally coordinating according to centrally given rules. Work organised according to the externally determined "one best way" is replaced by participative experimentation leading to continuous improvement. Within the firm, the transfer of localised tacit knowledge takes place mainly through horizontal apprentice-like relations, not vertical training from managers to workers (Stiglitz, 1999).

The trend has profound implications for vocational training systems. Decentralised decision-making, involving, in particular, employers and employees as the end users of the training are likely to be a major feature of training systems in the future.

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"Context flexibility refers to the need for training providers to arrange for learning to take place in a range of contexts."

Learning is best acquired when "situated" or carried out in context. Context flexibility refers to the need for training providers to arrange for learning to take place in a range of contexts. The importance of the strategic use of knowledge to the workplace of the future means that greater efforts will be made to capture the tacit knowledge in people's heads. Some of this will to be transferred to procedures such as a quality system. In other cases, it will be tapped through intensive teamwork. The central importance of tacit knowledge will mean that most learning will take place less from first principles in a deductive fashion in a classroom. The workplace itself, particularly where it is knowledge intensive work, will provide the best setting for learning.

Work-based learning offers a range of benefits to educationalists and enterprises. Three sets of benefits of close teacher-employer links can be identified. First, employers can demonstrate to students the skills needed in the workplace and hence reinforce in students the value of a relevant education. Second, students are likely to exert more effort once they return to the classroom because they have a better appreciation of how classroom performance is relevant to their future careers. And third, teaching staff accrue additional authority based on their close association with employers. However, realisation of these benefits depends on employers playing an active role in the specification of relevant competences to be acquired during a work placement and in their assessment.

Unsatisfactory learning conditions in the workplace may be due to an absence of appropriately trained mentors. It may also be due to bad work practices, such as scapegoating or victimising of apprentices. For a work placement to be a beneficial experience for the student, it needs to be carefully planned and monitored by people who understand both the work setting and what is to be learned there. Work placement co-ordinators may need a close rapport with employers to encourage employers to devote the resources needed to mentor students in the workplace. Co-ordinators, therefore, may need to be sourced directly from industry and be located in bodies with high credibility with employers such as an employer association.

Temporal [flexibility] "(...) refers to the flexibility in times, venue and format that will be needed to meet the requirements of an increasingly diverse group of users."

The second major form of flexibility that will be important to vocational training in the future is temporal. This refers to the flexibility in times, venue and format that will be needed to meet the requirements of an increasingly diverse group of users. Many young people in particular are now likely to construct their own pathway by negotiating a series of steps that includes work and further education. However, the choices of young people are not likely to be in a linear sequence. Modes and times of delivery will need to accommodate a clientele that will increasingly want to exercise their full range of options, particularly in relation to different combinations of work and study.

Vocational training providers will need to move from a course-based model with its set hours of training delivery to one more firmly focused on the needs of the individual. The issue is how best to match individual choices to education structures to make a greater range of career choices and aspirations possible.

Vocational training providers will need to encourage more individualised approaches to learning. This will involve greater use of recognition of prior learning to give credit for informal learning. The use of individual learning plans is one mechanism to facilitate individual negotiation of their own learning pathways.

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., 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., Van Buren M. (1997): *Training Industry Trends 1997*.American Society for Training and Development, Alexandria, Virginia.

Black S., 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.

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

DeFillippi R., 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.

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.

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., Duffin L. (1997): *Changes at Work: The 1995 Australian Workplace Industrial Relations Survey*. Longman, Melbourne.

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

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

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

Stern D. (1998): "*Developing Employability in a Learning Economy*", National Center for Vocational Education Research, University of California, Berkeley. Paper presented at the National Issues Forum, Research Centre for Vocational Education, University of Technology, Sydney.

Sweet R., Curtain R. (1999): "Young People and Work: Is Vocational Education and Training the Answer?" *A National Issues Forum Report*. Research Centre for Vocational Education and Training, University of Technology, Sydney, March 1999.

Stiglitz J. (1999): "Public Policy For A Knowledge Economy", Paper presented at the UK Department of Trade and Industry, London, January 27.

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.