

# Training and Competitiveness: An Asian Firm Perspective

**An Asia Business Council Report**

**SURVEY OF  
ASIA BUSINESS COUNCIL  
MEMBERS**

**NOVEMBER 2002**

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## **1 INTRODUCTION**

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### **1.1 About this Report**

This report provides an overview of responses to the Asia Business Council Consultation Questionnaire on Education and Training.

The findings presented in this report are based on 25 completed questionnaires (out of a total of 40) from a range of large businesses primarily headquartered in Asia. Despite caution being needed when interpreting results based on such small samples, careful analysis of the survey findings reveals some interesting views emerging amongst the responding Asia Business Council members with respect to:

- Training practices and strategies,
- Emerging skills shortages,
- Government investment in training, and
- The quality of the education and training sector.

Where possible the report has attempted to make inferences and draw out common themes from the survey data, often relying on free text responses to open ended questions to do so. As such the commentary provided in this report is based on a hybrid of quantitative and qualitative analysis.

For ease of reference, the report is structured in the same order as the sections of the questionnaire. Section 2 profiles responding organisations, Section 3 covers overall employer perceptions of training, Section 4 investigates education and training in more detail, with reference to key topics of interest to the Asia Business Council and Section 5 summarizes the key points.

Throughout the report, the actual number of respondents is presented in parenthesis.

Unless otherwise specified, where average ratings are presented in the text, these are based on a converted five-point scale where one is the negative end of the scale (e.g. very dissatisfied, not at all important, etc). and five is the positive end of the scale (e.g. very confident, strongly agree, etc).

### **1.2 Survey Background**

The Asia Business Council is committed to the continued economic growth and development of Asia. During the May 2001 Forum, a spirited discussion about human resource development as it relates to competitiveness took place. The Council decided to pursue several facets of this relationship further in order to deepen its understanding of how investment in people can foster growth.

One facet of human resource development is the type and quality of training programs that are available within a firm or an economy for adults once they are out of school and engaged in the

economy. The Council decided to survey members to ascertain the degree to which the following questions were important to economic growth broadly and our member firms specifically.

Overarching questions include:

- How are the training needs of Council member employees changing over time?
- How is globalisation affecting the skills requirements in Council member firms?
- What kinds of higher level management skills do Council member employees need?
- How do the management skills Council member firms require differ across authority level within the company?
- What kinds of programmatic support do Council members look to member governments to provide?

The National Centre for Vocational Education Research (NCVER) of Australia was engaged to undertake this work as they have a strong international track record in research and analysis in the area of skills enhancement. The study, which was developed in cooperation, with the Council will allow Council members to explore the training needs of the member companies and the degree to which these needs are being met.

## **2 RESPONDENT PROFILE**

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The sample for the survey covered a range of large companies primarily headquartered in Asia, operating in various industry sectors, with various mixes of white- and blue-collar workers.

Nearly all (23 from 25) of the responding organisations had a head office in Asia, with employees in a spread of overseas locations, but particularly in other Asian countries, North America and Europe.

About one third of respondents had overseas operations in other Asian countries only.

All but three responding organisations had more than 500 employees and all but two had employees located overseas.

Responding organisations were mostly likely to operate in the financial (10), utilities (5), manufacturing (11) or business services (10) industries. On average, responding organisations operated in at least three industry sectors.

About one third of companies reported had an exclusively white-collar workforce, predominantly in the business services and financial sectors and a third reported having mainly blue collar employees. Of those with mainly blue collar employees, most operated in the manufacturing sector.

All but three responding organisations are members of an industry association that includes training as part of its activities.

The geographic distribution of responding organisations is detailed in table 1 and shows that although most organisations have their head office based in Asia, the USA and the UK (along with China) are prominent countries where they have other operations indicating the diversity of Council Members.

**Table 1: Geographic distribution of responding organisations**

<b>Country</b>	<b>Head office of responding organisations</b>	<b>Other operations of responding organisations</b>
China	1	17
Hong Kong SAR	4	10
India		6
Indonesia	1	10
Japan	3	11
Malaysia		12
Philippines	3	10
Singapore	3	13
South Korea	2	6
Taiwan	4	10
Thailand	2	11
Vietnam		11
Other Asian countries		8
United Kingdom		13
The Netherlands	1	3
Other European countries		9
USA	1	14
Other Americas		8
Australia		8
Oceania		5
Middle East		7
Africa		4
<b>Total</b>	<b>25</b>	<b>206</b>

It is important to note that the education and training systems vary among the countries where responding companies have their head office or have other operations. In some countries, there are relatively low levels of government funding for post-compulsory education and training, or the funding that is provided is directed mainly for young people who have not yet entered the workforce. In these countries, the cost of organising and delivering training rests largely with the company or the employee. On the other hand, there are countries where there are relatively higher levels of government funding and an established infrastructure for education and training, including possibilities for training employees who are already in the workforce. In these countries, flexibility and access to a range of options are more likely to be available. For example, it is more likely that costs can be shared among companies, governments and employees, or that companies can enter into partnerships with specific education or training institutions to help meet the training requirements of existing employees or to ensure a supply of graduates with the qualifications and skills needed by the company.

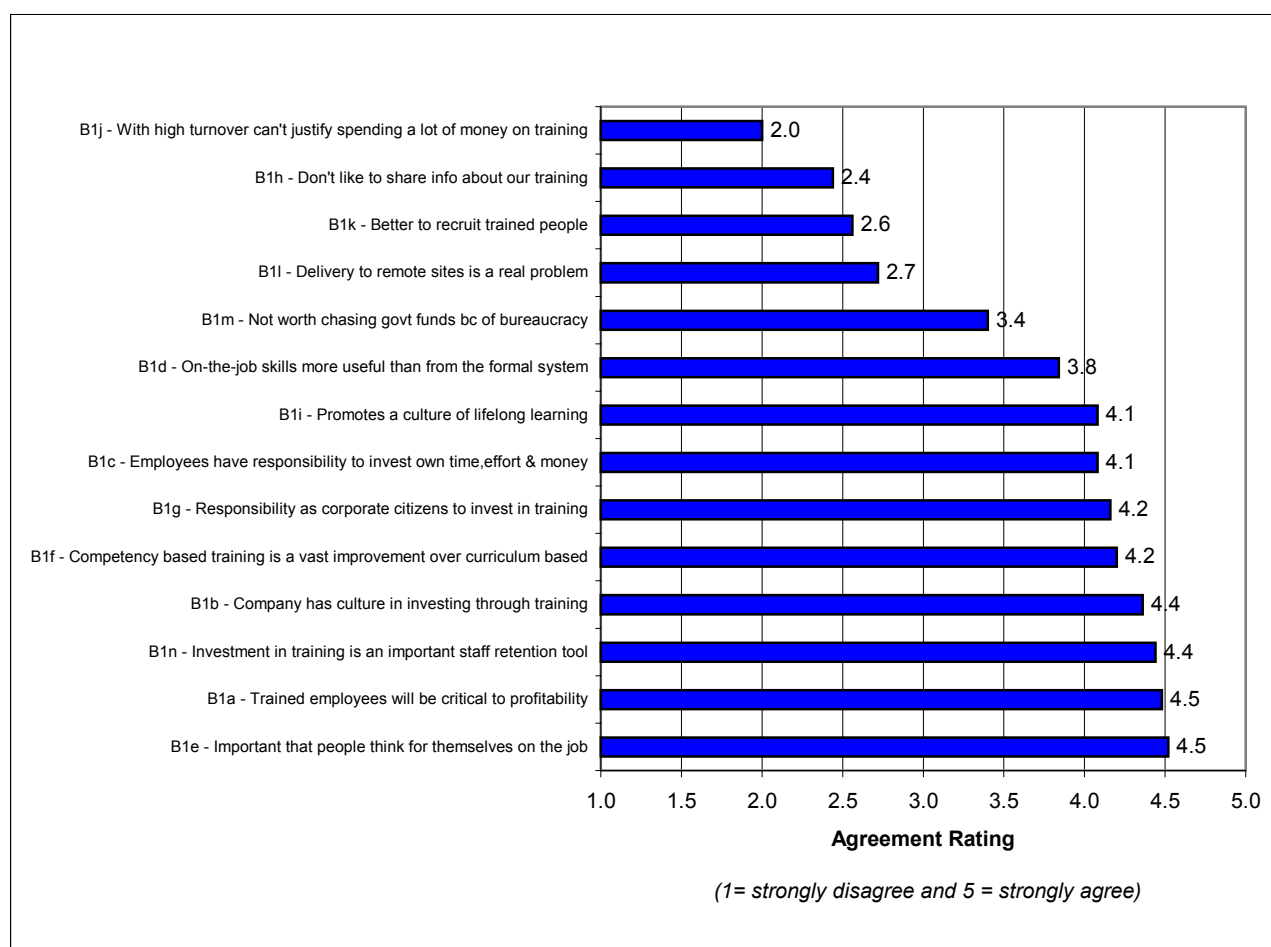
### 3 PERCEPTIONS OF TRAINING

Respondents were asked to rate their agreement with a series of statements regarding training, and the benefits of formal and informal training, using a five point scale. For the presentation of these results the questionnaire scale has been converted such that one is strongly disagree and five is strongly agree.

The values presented in Figures 1 and 2 are the mean scores for each statement across all respondents. As can be seen from Figure 1, the highest levels of agreement were for statements linking training to staff retention and profitability and the lowest level of agreement was for the statement that high turnover meant that it was hard to “justify spending a lot of money on training.”

The responses indicate clearly that companies generally believe they have a responsibility to invest in training, but that individuals also have a responsibility to invest in their own training. The value given to lifelong learning, which is important in adapting to rapid technological and structural change, is also evident.

**Figure 1: Agreement with statements relating to training (general)**





The results presented in Figure 2 show higher levels of agreement for statements relating to the benefits of training, with the highest rating going to the role of training in remaining globally competitive.

**Figure 2: Agreement with statements relating to benefits of both formal and informal training**

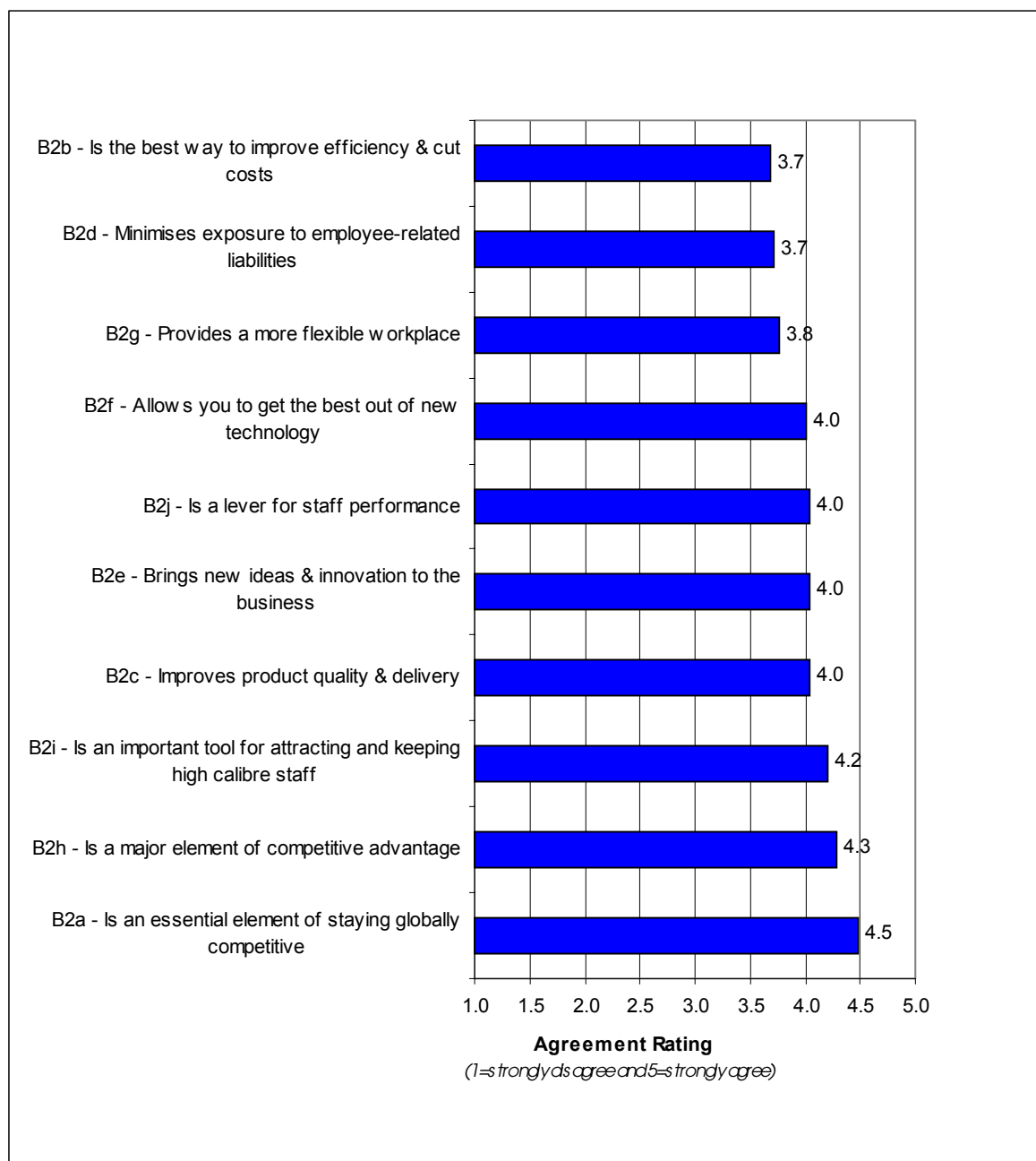
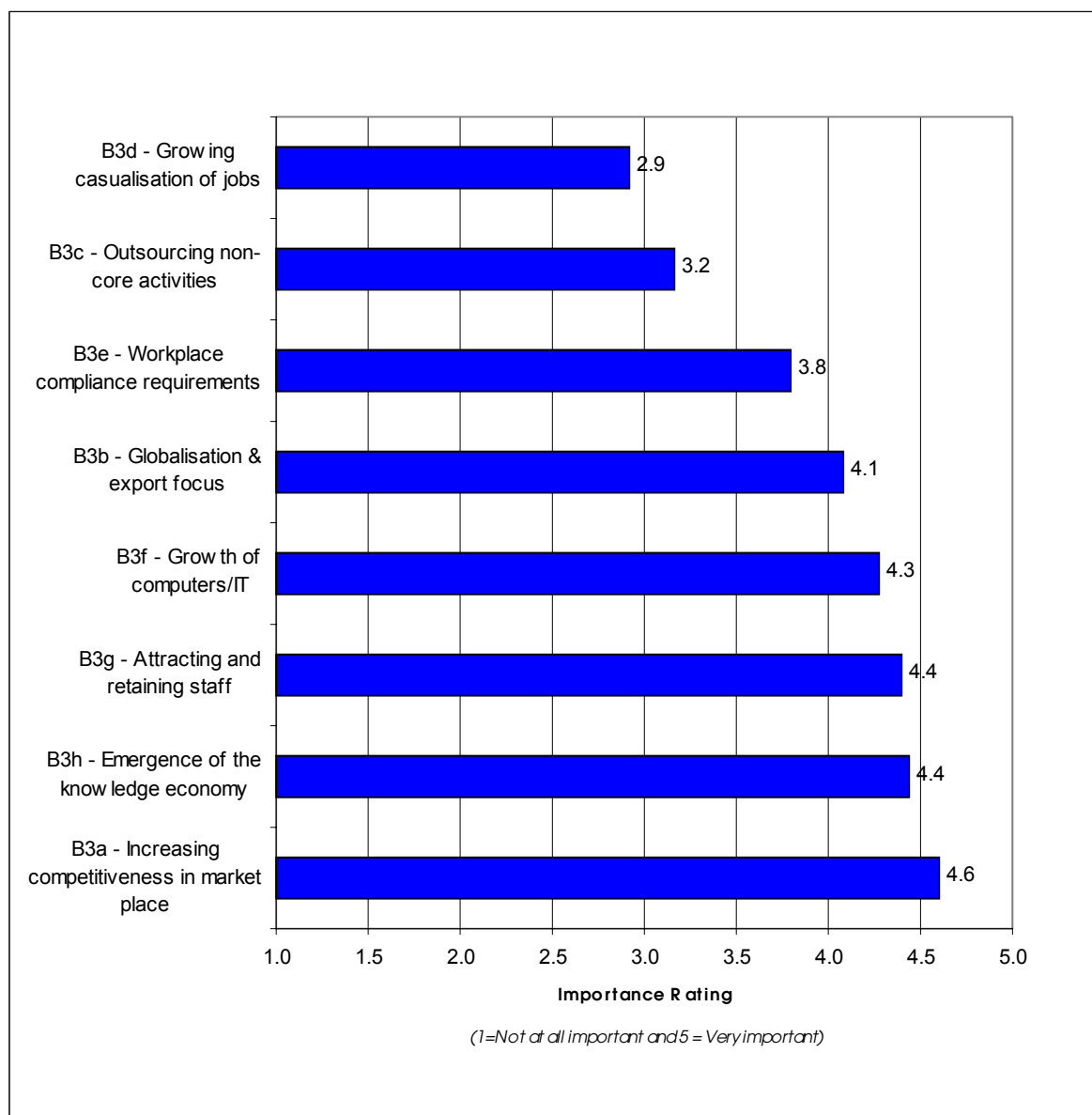


Figure 3 shows the relative importance of selected factors in influencing organisations’ training agendas. As can be seen respondents tended to rate the growing casualisation of jobs and outsourcing of non-core activities as less important influences on organisational training agendas. Issues such as competitiveness, staff attraction and retention, and changing technologies were considered as more influential.

**Figure 3: Importance rating in terms of influencing training agenda**



Three quarters of respondents (18) nominated the growing emphasis on customer service and changing management practices as the other main forces impacting on their company’s need to train.

The major issues confronting companies in making training happen were the cost of training (18) and the time it takes (19). In some countries, some of the direct costs of training (as distinct from the

labour costs) are borne by governments, which can offset the costs to employers or employees. Few respondents nominated the suitability of graduates (5).

## **4 EDUCATION AND TRAINING**

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This section summarises responses on Member views to education and training. It covers issues such as Members' training practice and strategies, skill shortages, investment in training, training delivery, qualifications/credentials, recruitment and the quality of the training provided. It also compares the perceptions of training identified in the previous section of the questionnaire with details of the actual training issues and practices covered in this section.

### **4.1 Emerging Skill Shortages**

The issue of emerging skill shortages is encapsulated by the quote on the Asia Business Council website from Tharman Shanmugaratnam, Singapore's Senior Minister of State for Education, who said, *"The existing education system has produced reliable managers for predictable times, but it now needs to produce a new breed of leaders who have a certain ruggedness, an ability to respond to situations quickly."*

The great majority of firms identified skill shortages that may emerge in the next three years, with the shortage mainly in workplace skills, particularly at the decision-making and people management level. This is consistent with perceptions that training should equip employees to think for themselves on the job (refer back to Figure 1), and that changing management practices are driving a need to train.

Respondents identified the emerging shortages as most likely to be in leadership skills (19) and soft skills (14), followed by advanced technical skills (10) and information technology/computer-related skills (10).

Several respondents indicated that the IT/computer related skill shortages were likely in specific applications, rather than in general programming languages or common packages. The picture is one of the current system producing sufficient numbers of candidates with sound entry-level skills, including base technical expertise. This is evidenced by the small proportion of respondents nominating trade skills (3), numerical/analytical skills (5) or automation/mechanical skills (1) as the likely areas of emerging skill shortages in the next three years and the decreased emphasis on graduate level training and postgraduate level training programs in the next three years.

Nearly all respondents (24) felt that there would be more emphasis on leadership development skills in the next three years, followed by soft skills (19) and skill upgrades (18). This further supports the view that employees will come into the workplace with adequate base training, but will need "rounding out" in the workplace through training in specific technical, leadership and soft skills.

Typically, the strategies put in place by responding organisations to address emerging skill shortages revolved around providing more staff training (15), relying more on computer-based self-paced learning (11) attracting skilled staff by increased remuneration (11) and improving links with schools to promote career options (9).

Interestingly, lack of internal training expertise (10), a skill-shortage in itself, was commonly mentioned as the one of the main obstacles to overcoming emerging shortages.

There was no sense among responding organisations that their respective industry associations understood or were able to react to issues relating to emerging skills shortages, with only around half indicating that they are confident that their industry association has adequately anticipated the future skill needs of the industry. For instance, almost all organisations identified shortages in workplace skills, particularly at the decision making and people management level. However, these same organisations did not think their respective industry associations understood, were able to react to, anticipate or able to put strategies in place to help address this emerging skill shortage.

These findings are significant because one of the models for addressing training issues involves representative industry associations providing strategic direction and advice. Such models are found, for example, in a number of northern European countries, Germany particularly, and to a lesser extent in Australia and New Zealand. Of course such models are feasible only where there are a sufficient companies to form an industry association and where the infrastructure is in place to translate strategic advice into training practice.

## **4.2 Training Planning**

The majority of organisations (19) had a skills acquisition/training plan to address future needs, with the emphasis most likely to be on just-in-time training (15) and in-house training (12).

Typically, the horizon for training plans was 1 to 2 years (11), with only one responding organisation taking a long-term view (beyond five years).

The emphasis on just-in-time training and the relatively short-term horizon is consistent with issues relating to rapidly changing training requirements and the relative uncertainty of ongoing funding for training (given the strong link between training investment and the overall bottom line).

The focus on in-house training is consistent with the need for company specific, workplace-level, targeted training, where the training program is often linked to some wider quality, business or structural initiative. Respondents indicated that the education system or external training providers do not necessarily offer this type of training.

Seven respondents indicated that their training plan involved outsourcing some components of their training. This may be linked to the lack of internal training expertise.

### **4.3 Training Delivery**

The picture is one in which areas of emerging skill shortages are covered mainly by in-house training, with increased onus on the individual to invest time and effort in keeping skills up to date, and the employer acting as the facilitator, particularly in terms of providing on-line or computer based training for self-paced learning.

#### ***On-line and computer based training***

A strong and consistent theme is that of the increasing use of computer based or on-line media for training delivery. This is seen to impact positively on the ease of training delivery to remote sites, with just over half (13) of the responding organisations already using an on-line training program, mostly to deliver technical training. All except one respondent expects this mode of training delivery to grow in their organisation, mainly for reasons relating to flexibility (17) and ease of access (17).

#### ***In-house training***

Given that in-house training expertise is generally limited, in-house training is being delivered for the majority of respondents (20) in conjunction with a private training institute. Where a private training institute is not used for in-house training, the quality of training provided by private trainers is not the issue, rather, private trainers are not used because they do not necessarily understand the “culture” and requirements of the organisation they are delivering the training to and therefore the training itself tends not to be sufficiently enterprise-specific.

In-house training programs are most prevalent for soft skills (24) and leadership development skills (23), followed by workplace compliance (20), IT/Computer skills (19), short course management programs (18), skill upgrades (17) and broadening the range of individual’s skills (16).

#### ***Management training***

All except one organisation has employees currently undertaking formal Master of Business Administration (MBA) or higher level programs. The US/Canada (17), Asia (16) and the UK (10), are the countries most frequently mentioned as providing the training for employees undertaking MBA level or higher programs.

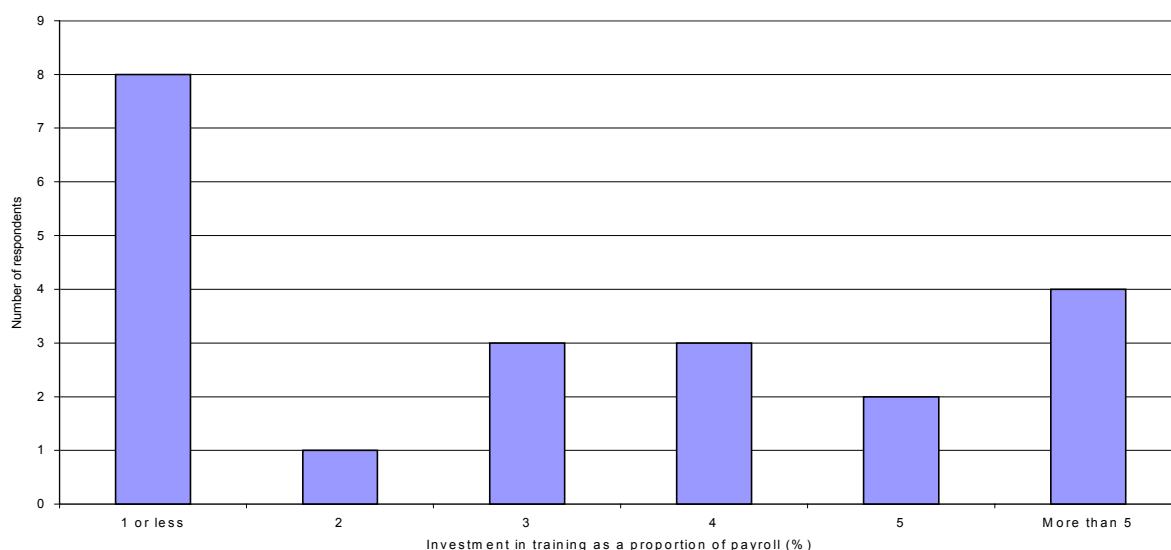
All except three organisations have employees currently undertaking short course management programs. Such courses are conducted both in-house and through an external training provider at most locations (14), with a further seven using external training providers only.

Most (15) respondents reported that participation in these short courses was increasing.

#### 4.4 Company Investment in Training

On average, responding companies invest about 3.5% of payroll in training, but with a considerable amount of variation around this average value (Figure 4). This investment was generally higher for companies involved in technical or service sectors than in manufacturing.

**Figure 4: Investment in training as a proportion of payroll**



For responding organisations, the highest proportion of training budget was allocated to training areas such as soft skills (22%), leadership development skills (18%) and skill upgrades (18%). This is consistent with areas of perceived emerging skill shortages and areas of increased training emphasis in the future.

Internationally, there is very little information available about spending on training as a proportion of labour costs for larger, multi-national companies. Published country figures span a wide range, from 0.5% upwards. From the limited information available, a figure of 3.5% appears to be what would be expected in countries where most public and individual expenditure is on entry-level training, and companies are required to fund customised training, retraining, upskilling and the like.

Overall, investment in training as a proportion of company payroll has increased, relative to three years ago. All except one company reported spending a greater proportion (10) or about the same proportion (14) of company payroll on training now, compared to three years ago. There are indications that training budgets may not necessarily continue to grow at the same rate in the future. For example, nine responding organisations perceived tighter training budgets as the main obstacle to overcoming emerging skill shortages, and nine predicted that the level of intending use of contract labour outsourcing will increase (presumably at the expense of investing in internal training and management of the outsourced functions).

Investment in training is generally consistent with respondents' tendency to agree with statements linking training with staff retention, profitability and competitiveness. Less strong, however, is the association between investment in training and the perceptions that training will lead to efficiency improvements and cost control.

Despite increased investment in training and claims of strong support for investment in training at senior level, there is evidence that some respondents view training as a more discretionary, variable cost item, with training spend influenced quite strongly by:

- Company turnover,
- Low perceived benefits, and
- The inability to assess returns on investment in training.

Measuring return on investment in training would appear to be both a challenging and neglected aspect of overall training strategies. Each of the six responding organisations claiming to have developed a methodology for measuring ROI has a measurement system specific to its circumstances, indicating that there is no simple formula for tracking returns to companies investment in training.

The experience noted by Member organisations is not all that different from the Australian experience, with recent studies in Australia (NCVER, 2001a) noting that:

- Returns to training investments are nearly always positive, can be very high and is often based on the nature of the training program and its relevance to the business needs of the firm,
- Returns can come in many forms and not just increases in labour productivity or profitability,
- The immediate returns to training are highest when the training is highly focussed and yields higher returns when it is linked to innovation, particularly technological change,
- Training acts as a support mechanism for other changes in firms and pays its highest dividend to firms when it is linked to 'bundles' of other innovative practices such as new ways of working and new forms of organisational structure,
- Returns to training can be enhanced by other human resource policies in the firm, such as promoting staff from within rather than external recruitment and the development of broad skills sets amongst employees such as leadership, team-building and other generic skills.

Further evidence of the intangible nature of investment in training in a competitive environment is that only four responding organisations indicated that they would alleviate emerging skill shortages by increasing the training budget.

#### **4.5 Relationship with Government**

Responding organisations with a predominantly blue-collar workforce generally felt that government had a greater responsibility for training across all areas.

It was generally felt that government was responsible for labour market re-entry training with the purpose of helping job seekers find work with business being more clearly responsible for enterprise specific training and the skills upgrading of existing workers, particularly in white-collar environments. Skills upgrading was also the area that employers were now more likely to be paying for training that was previously funded by the government.

Entry level training and training in areas of emerging skills shortages were perceived as more of a joint responsibility, with business the marginally more prominent player.

Responding organisations felt quite strongly that the government, in its role as providing work opportunities for the unemployed, should provide incentives or subsidies to employers to encourage increased training in labour market re-entry (17). In general, the payment of labour market subsidies and incentives, or allowances to encourage displaced or unemployed workers to upskill or retrain, are not major features of the employment and training systems in the countries where Asia Business Council members are headquartered, although there are exceptions.

Eleven respondents also felt that government should provide incentives or subsidies to employers in areas of emerging skills shortage (11), principally to minimise the risk that business will move operations elsewhere (where relevant skills are available).

Most respondents (18) felt that the relative responsibilities for training between their company and the government had not changed in the last ten years, however, all three responding organisations headquartered in Singapore felt that the Government was now paying for more training than they did ten years ago.

It would appear that employer training programs are largely independent of government financial initiatives, since respondents nominated the availability of public funding as the least important factor in terms of influencing their investment in training.

There is a sense, however, that governments share responsibility with employers and training organisations for influencing both the *type* of courses that are provided in the tertiary and VTET sectors, and the *standards* provided for employee qualifications.

Other issues impacting on employers that are driven by governments, such as compliance, were perceived at the time of responding as relatively low stakes in terms of training spend and emphasis. This may have changed given recent corporate governance developments in the USA.

The responses regarding relationships with governments suggest that there may be scope for the development, or further development, of partnerships between governments and companies to address training needs. Similar partnerships could also be developed with individual education or training providers, including universities, if that is appropriate for the situation.



## 4.6 Work - Readiness of Graduates

The suitability of graduates is not perceived as one of the major training issues confronting companies. The general picture is one of decreasing emphasis on graduate-level programs, evidenced by low comparative levels of spend on such programs, balanced by a need to train graduates in workplace skills such as leadership, communications and “soft” skills.

Most of the employer issues revolve around closing the gap between the basic technical abilities of graduates and the level of “life skills” and workplace-specific skills they will need.

Employers regard the main problems with graduate training as being:

- The lack of customisation (17),
- A failure to reflect real workplace competencies (13), and
- Teachers/trainers not being up-to-date with industry standards (9). This raises concerns for the adequacy of the systems for training and recruiting staff in educational institutions and for keeping their knowledge and skills up to date.

Most responding organisations felt that these problems could be overcome by education providers liaising more directly with employers about the content and context of training (19), and by providers regularly “road testing” the content of training programs (15).

Most employers (21) place a greater value on university qualifications over Vocational and Technical Education and Training (VTET) qualifications, and are marginally more satisfied with the quality of university sector training (average satisfaction rating of 2.7), than with the quality of VTET sector training (2.1).

This was due to the perception that VTET qualifications are not all that relevant to their company (12), and that university graduates are better skilled and more able to work with technology than VTET graduates (10).

There are some indications that the work-readiness of graduates could be positively impacted, from the employers’ perspective, by competency-based assessment, since this tends to be more specific and based on actual performance. While competency-based assessment is relatively clear for the VTET sector and blue collar workers in general, it is less clear for higher education graduates. The satisfaction ratings given by employers for the quality of both university sector assessments (2.6) and VTET sector assessments (2.4) suggest there is considerable room for improvement. Respondents indicated that the quality of assessments could be improved by more on-the-job assessment (16), concentrating on demonstrated competencies rather than attained competencies (13) and assessors having more industry experience (12).

This is consistent with employer tendency to agree with statements that competency based training is a vast improvement over curriculum based training, and that skills obtained on the job are more useful than what people learn from the formal system.

#### **4.7 Staff Recruitment**

##### ***Executive Recruitment***

Most responding organisations (15) fill management and executive positions with a mixture of locally based staff and staff recruited from outside the company. The others use mostly (7) or exclusively (2) locally based staff. Whether such positions are filled from outside the region is not specifically covered in the questionnaire, however, it would appear that filling vacancies for executive-level positions from local markets is generally the preferred option. No responding organisation mentioned inadequate referrals by recruitment agencies as an obstacle to overcoming skill shortages.

##### ***Role of Qualifications/Credentials***

As can be expected, most (19) responding organisations place a lot of emphasis on qualifications/credentials when recruiting staff. Respondents tended to agree that credentials, such as the recruits degree or diploma are a good guide to a new recruit's skills and abilities, and that credentials are very important when it comes to recruiting staff.

##### ***White and Blue Collar Recruitment***

Methods of recruitment, the recruitment processes used, and the time elapsed between placing the advertisement and commencing the employee vary slightly for blue and white-collar vacancies.

For white-collar staff recruitment, the main methods used are newspaper advertisements and the internet. All responding organisations use a personal interview process, and a majority also use written tests (14) and short-listing via a recruiting firm (11).

Most (19) companies typically have a four to eight week window between advertising the vacancy and commencing the new white-collar employee.

Newspaper advertisements were most frequently mentioned as the main method used for blue-collar staff recruitment, with personal interviews being the main process undertaken.

About half the companies employing blue-collar workers had a window of less than 4 weeks between advertising the vacancy and commencing the new employee, and the other half, a window of 4 to 8 weeks.

### ***Employer Attitudes to Recruitment***

There appears to be a gap between the rhetoric of growing existing staff through training and the reality of meeting needs in areas of skill shortage through the recruitment of staff trained externally.

## **5. CONCLUSIONS**

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Responding organisations are generally heavily committed to training, as evidenced by training spend, which at 3.5% of payroll, on average, is broadly in line with large companies in industrialised economies.

The lack of systems for assessing return on investment in training, and the difficulty in reconciling the sometimes intangible, longer term benefits of training with more immediate competitive and budgetary pressures, is a key issue for organisations and may impede growth in company investment in training in the future.

A number of consistent themes emerge, including connecting areas of emerging skills shortages with the changing emphasis of company training programs, and shortcomings in the education and training systems in the region, as perceived by employers.

Employers currently perceive that the onus now is on them to develop leaders, equip employees with the soft skills required to maximise performance, and provide specialist technical training relevant to the workplace. The latter, through funding of skills upgrade training programs, was in some locations previously a responsibility taken on by governments.

For employers, the *quality* of graduates per se is not the issue – employer training programs are rarely focused on entry level skills. Instead, the kind of training employers provide indicates that graduates require significant training in workplace skills, funded by the employer, to supplement the education and training provided by the education system.

It would appear, therefore, that there is a significant opportunity for stakeholders across business, government and education providers to develop closer relationships to ensure that education and training provision is better able to meet the needs of business.

## 6. SELECTED REFERENCES

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*Note:* The references given in this section are a selection only of the literature from the last 10 years which looks at relevant aspects of vocational and technical education and training. Only materials published in English or available in an English-language version have been included. Other references can be obtained by searching VOCED, the UNESCO/NCVER international database for technical and vocational education and training research (<http://www.voced.edu.au/index.htm>).

Abentur, F and Mobus, M (1996), 'Continuing training for companies: France's position in Europe', *Training and Employment*, no.26.

Adams, A, Middleton, J and Ziderman, A (1992), 'The World Bank policy paper on vocational and technical education and training', *Prospects*, AAIL (2).

Alto R., Isaac I., Knight B. and Polestico R. (2000), *Training systems in South-East Asia*, National Centre for Vocational Education Research Ltd, Adelaide.

Australian Bureau of Statistics (1997) *Employer Training Expenditure Australia July to September 1996*, Australian Bureau of Statistics, Canberra.

Australian Bureau of Statistics (1998) *Employer Training Practices Australia February 1997*, Australian Bureau of Statistics, Canberra.

Ball K. and Freeland B. (2001) 'Determinants of apprentice training by small and medium-sized enterprises' in Smart N. ed. *Australian Apprenticeships: Research Readings*, National Centre for Vocational Education Research Ltd, Adelaide.

Barrett, G and Dewson, S (1998), *Sectoral support for training: A review of international practice*, DfEE, London.

Bartel A.P. (2000), 'Measuring the employer's return on investments in training: Evidence from the literature' in *Industrial Relations* vol.39 no.3, pp.502-534.

BAT (Bureau of Apprenticeships and Training) (1995), *The National Apprenticeship System*, US Department of Labor, Washington DC.

Blandy R., Dockery M., Hawke A. and Webster E. (2000), *Does training pay? Evidence from Australian enterprises*, National Centre for Vocational Education Research Ltd, Adelaide.

Burke G. and Reuling J. (2002) *Australia Centre Series; Vocational Training and Lifelong Learning in Australia and Germany*, National Centre for Vocational Education Research Ltd, Adelaide.

- Caillods, M (1994), 'Converging trends amidst diversity in vocational training systems' in *International Labour Review*, vol.133, no.2.
- Cheng, KM (1994), 'Young adults in a changing socialist society: Post-compulsory education in China' in *Comparative Education*, vol.33, pp.63–73.
- CIVoTE (1998), *Annual report of vocational education in China, 1997*, Central Institute for Vocational and Technical Education, Department of Vocational and Technical Education, Ministry of Education, PRC.
- CNC (1998), 'Chinese tertiary vocational education in retrospect and prospect' in UNESCO, international seminar on re-engineering of higher technical and vocational education, 7–10 December, Shenzhen, PRC, pp.8–14.
- Cox Edwards, A (1996), *Constraints and innovations in vocational education and training reform: The case of Chile*, World Bank, Washington DC.
- Crisafulli, D (1998), *Matching grants schemes for enterprise upgrading: A comparative analysis*, World Bank, Washington.
- Crombie White, R, Pring, R and Brockington, D (1995), *Education and training: Implementing a unified system of learning*, Royal Society for the Arts, Coventry.
- Curtain, R (2000), *An entitlement to post-compulsory education: International practice and policy complications for Australia*, National Centre for Vocational Education Research Ltd, Adelaide, forthcoming.
- Dépêches de l'AEF (a special subscription, not for reproduction) Dore, R and Sako, M (1989), *How the Japanese learn to work*, Athlone, London.
- Dockery M. (2001) *Training innovation and business performance: An analysis of the Business Longitudinal Survey*, National Centre for Vocational Education Research Ltd, Adelaide.
- Doucouliafos C. and Sgro P. (2000), *Enterprise return on training investment*, National Centre for Vocational Education Research Ltd, Adelaide.
- Dougherty, C (1987), 'The German dual system: A heretical view', *European Journal of Education*, vol.22, no.2.
- DTE–MOLSS (Department of Training and Employment, Ministry of Labour and Social Security) (1999), *Vocational training and employment in China*, DTE–MOLSS, PRC.
- Ducci M.A. (1997), *The role of the state and the private sector in training*, ILO, Geneva.

Dumbrell T. (2002) *Industry differences in expenditure on training Working Paper 02-06*, UTS Research Centre for Vocational Education and Training, Sydney.

Economic Research Services (1998), *Evaluation of Modern Apprenticeships: 1998 survey of employers*, DfEE, London.

ECSGET (European Commission Study Group on Education and Training) (1997), *Accomplishing Europe through education and training: Report*, ECSGET, ECSC-EC-EAEC, Brussels, Luxembourg.

Espinoza, EM (1997), *Chile: Partnerships in a market oriented training system*, ILO, Geneva.

European Commission (1997), *The current situation regarding vocational training in Latin America and the Caribbean*, Luxembourg.

Evans, B (1989), *The politics of the training market: From Manpower Services Commission to Training and Enterprise Councils*, Routledge, London.

Fallon, P and Hunting, G (1999), 'China', in *Skills and change: Constraints and innovation in the reform of vocational education and training*, eds I Gill and F Fluitman, World Bank, forthcoming.

Figgis J. (2001), 'What convinces enterprises to value training and learning and what does not?' in Smith A. ed. *Return on investment in training: Research readings*, National Centre for Vocational Education Research Ltd, Adelaide.

Fukuyama, F (1995), *Trust: The social virtues and the creation of prosperity*, I Gasskov, V 1989, *Alternative schemes for financing training*, ILO, Geneva.

Gopinathan, (1994), *Educational development in a strong state: The Singapore experience*, Australasian Association for Research in Education Conference.

— (1999), *Comparative perspectives on skills formation in Japan, South Korea, Singapore and Germany, working paper 5*, The High Skills Project, Institute of Education, University of London.

— (1999), 'East Asia Skill Formation Systems and the challenge of globalism' in *Journal of Education and Work*, vol.12, no.3, pp.253–79.

— (2000), 'Singapore', draft paper for the High Skills Project, Institute of Education, London, (unpublished).

Green, A, Hodgson, A, Sakamoto-Vandenberg, A, Spours, K (2000), *Financing of VET*, CEDEFOP (forthcoming).

Green, A and Steedman, H (1993), *Educational provision, educational attainment and the needs of industry: A review of the research for Germany, France, Japan, the USA and Britain*, report series 5, National Institute of Economic and Social Research, London.

Hillage, J, Atkinson, J, Kersley, B and Bates, P (1998), *Employers' training of young people*, DfEE, London.

HMI (Her Majesty's Inspectors) (1993), *Aspects of vocational education and training in the Federal Republic of Germany*, London.

Iwamoto, M (1994), *Case study on technical and vocational education in Japan*, UNEVOC, Berlin.

Jobert, A, Marry, C, Tanguay, L and Rainbird, H (eds) (1997), *Education and work in Great Britain, Germany and Italy*, Routledge, London.

Johnston, W and Packer, A (1987), *Workforce 2000: Work and workers for the 21<sup>st</sup> century*, Hudson Institute, for the US Department of Labor, Indianapolis.

Keating, J (1999), *Industry training in Guatemala: Discussion paper*, paper for the World Bank, Washington DC (unpublished).

Keating J., Medrich E., Volkoff V. and Perry J. (2002) *Comparative Study of VET Systems: National vocational education and training systems across three regions under pressure of change*, National Centre for Vocational Education Research Ltd, Adelaide.

Kearns, P and Papadopoulos, G (2000), *Building a learning and training culture: The experience of five OECD countries*, National Centre for Vocational Education Research Ltd, Adelaide.

Lauglo, J (1992), *Vocational training and the bankers' faith in the private sector*, Comparative Education Review, vol.26, no.2.

Martinez, EE (1994), *Vocational training in Chile: A decentralized and market oriented system*, ILO, Geneva.

Michelet, V (1998), *The financing of vocational education and training in France*, CEDEFOP, Thessaloniki.

Mitchell, AG (1999), *Strategic training partnerships between the State and enterprises*, ILO, Geneva.

NCVER (2001a), *Returns on investment in training: Research at a glance*, National Centre for Vocational Education Research Ltd, Adelaide.

NCVER (2001b), *Survey of Employer Views of Vocational Education and Training: At a glance*, National Centre for Vocational Education Research Ltd, Adelaide.

Nestler K. and Kailis E. (2002), *Costs and funding of continuing vocational training in enterprises in Europe*, European Communities, Luxembourg.

O'Connell, PJ (1999), *Adults in training: An international comparison of continuing education and training*, OECD, Paris.

Pang, EF and Low, CK (1994), *Industrial restructuring and retraining in Singapore, Training and Policy Studies*, Training Policies and Programme Development Branch, ILO, Geneva.

Penington, D (1994), 'Creating and sustaining a learning culture' in *Post-compulsory learning: Exploring new directions in education and training*, Department of Education and University of Melbourne, National Curriculum Services, Melbourne.

Pillay, G (1992), *Training of middle level workers in Singapore*, International Labour Office, Geneva.

Prais S.J., Jarvis V. and Wagner K. (1989), 'Productivity and vocational skills in services in Britain and Germany: Hotels' in *National Institute Economic Review* vol.130 November, pp.52-74, United Kingdom.

— (1995), *What's working and what's not*, US Department of Labor, Washington DC.

Rhodes, L and Nakamura, M (1996), 'From school to work in Japan' in *Compare*, vol.26, no.3.

SEAMEO, (1994), *Management of business and industry cooperation programmes in vocational and technical education*, SEAMEO VOCTECH, Singapore.

Senker, P (1992), *Industrial training in a cold climate*, Avebury, Aldershot.

Streeck, W (1987), 'Skills and the limits of neo-liberalism: The enterprise of the future and the place of learning' in *Work, Employment and Society*, vol.3, no.1, pp.89–104.

Tan, PB (1997), *Human resource development in Asia and the Pacific in the 21<sup>st</sup> century. Issues and challenges for employers and their organizations*, ILO, Geneva.

Tzannatos, Z and Johnes, G (1997), 'Training and skills development in the East Asian newly industrialized countries: A comparison and lessons for developing countries' in *Journal of Vocational Education and Training*, vol.49, no.3, pp.431–54.

UNESCO (1995), *Case studies on technical and vocational education in Asia and the Pacific*, Royal Melbourne Institute of Technology, Australia.

UNESCO (1999), *Technical and vocational education and training: A vision for the twenty-first century*, Geneva.



UNESCO/UNEVOC (1996), *Establishing partnerships in technical and vocational education. Cooperation between education institutions and enterprises in technical and vocational education*, UNEVOC, Berlin.

World Bank (1994), *Vocational education and training: The role of the public sector in market economies*, Julien Schweitzer Papers, Washington DC.

Xiao-Zhuang, Z (1999), 'Industry and the urban economy' in *China in the 1990s*, eds R Benewick and P Wingrove, Macmillan.

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