HIGH PERFORMANCE ORGANISATIONS:
Maximising workforce potential
Research Review and Survey Results

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INTRODUCTION

Background

This research review and survey results are two components of the Australain Industry Group's High Performance Organisations: Maximising Workforce Potential project. This work was funded under the Commonwealth Department of Education, Employment and Workplace Relations' Workforce Innovation Program which provides funding for innovative projects that address workforce skills needs.

The project consisted of the following phases:

- *Phase 1: Research review*. The National Centre for Vocational Education Research was engaged to prepare a focused review and analysis of national and international research on skills utilisation and high performing workplaces to identify existing organisations' best practice for this project.
- *Phase 2: Employer skills utilisation survey*. In late 2009 the Australian Industry Group administered a survey of member companies which canvassed a number of issues relevant to skills utilisation: the extent to which companies keep track of workforce skills; company measures of skills utilisation levels; skills utilisation levels by occupation and human resource management practices employed.
- *Phase 3: Case studies.* Five highly productive organisations were identified using a range of methods and the project team worked with those companies to identify the actions, processes and structures they put in place to create high performing workplaces. Illustrative case studies were prepared and the findings from the case studies and the research review contributed to the development of a tool – the Workplace Productivity Tool – which was piloted in the next phase of the project.
- *Phase 4: Pilot of High Performance Processes*. This next phase of the project involved working with seven companies that were prepared to work with a consultant to test the tool developed through the research undertaken in previous project phases to help them to become high performing workplaces. All of the companies were SMEs, employing less than 200 people.
- *Phase 5: Final Report*. In this last phase a final report was developed which draws together the previous phases of the project and considers lessons learnt from the project.

The project was conducted over a two year period from October 2009 to late 2011. Reports on other phases of the project and the final project report can be accessed through the Australian Industry Group website www.aigroup.com.au

Context

When this project began in 2009 the Australian economy, together with the economies of our major trading partners, was contracting. The downturn arising from the global financial crisis was expected to deepen, both in severity and proportion of companies affected.

Ai Group research for January 2009 on intentions for 2009 showed employment in the manufacturing sector was forecast to fall by 4.4% (44,000), construction employment was expected to fall by 5.6% (around 55,000) and in the services sector employment was expected to fall by 0.6%, or around 40,000 jobs.

Faced with declining sales, the manufacturing, services and construction sectors were preparing to make commensurate cuts to discretionary spending in areas such as training, research and development and investment. Ai Group intelligence was indicating that a significant number of companies were reassigning existing workers which was resulting in an increased demand for targeted upskilling. Declining total numbers of people employed was putting increased pressure on companies to more effectively use the skills of their existing workforce.

It was this economic context which prompted Ai Group to undertake this detailed and long-range project to investigate skills utilisation levels which we did by focusing on high performing workplaces as it is these workplaces which typically exhibit high levels of skills utilisation.

Over the course of the project the global financial crisis gave way to the multi-speed or patchwork economy. From this context the continued development and improvement of the skills base is considered to be one of the keys to long-term competitiveness and growth. But increasingly there is the recognition that building the stock of skills is not sufficient in itself – those skills must be used. The UK experience of implementing the recommendations of the Leitch Report[1] is instructive – an increased stock of skills has not resulted in increased productivity levels. Productivity also remains a difficult issue for Australian businesses and has been in sustained retreat since the 1990s[2].

The research community is divided about the extent of utilisation of skills in the Australian workforce.

'In Australia close to 30 percent of workers are overeducated and are under utilising their skills'.[3] Linsey also shows that about 21 percent of workers with a degree are working in jobs that don't require that level of education, while about 46 percent of workers with a vocational qualification are in jobs not requiring that level.

The ABS data presents findings similar to that of Linsey with about 20 percent of tertiary graduates working in jobs that don't require that level of education. The proportion of VET graduates working in jobs not requiring these qualifications is about 35 percent.

In a review of NCVER research and the results of the Household, Income and Labour Dynamics in Australia survey, Watson concludes '…..skills under-utilisation lies somewhere between 10 and 15 percent, though it is probably closer to 20 percent.[4]

Skills under-utilisation is linked closely to occupation: managerial and professional jobs make better use of skills than lower level jobs. Some intermediate level occupations such as tradespersons, are closer in terms of skills utilisation to the higher level jobs than to the lower level jobs.

The intention of this project was to develop a contemporary view of skills utilisation from the company perspective and then to apply these learnings to a tool which could be used to help interested companies move to become high performing workplaces with high levels of skills utilisation.

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[1] Leitch Review of Skills, Prosperity for all in the global economy – world class skills, Final Report, December 2006.

[2] How Fast Can Australia Grow Mark III

[3] Linsey, I. (2005) 'Causes of over education in the Australian Labour Market', Australian Journal of Labour Economics 8(2), pp.121-143

[4] This depends on the data used; NCVER's Student Outcome Survey (SOS 2005), NCVER's Down the track Survey (DTT 2004), the Household, Income and Labour Dynamics in Australia Survey (HILDA).

1 HIGH PERFORMANCE ORGANISATIONS – EMPIRICAL STUDIES AND SKILLS UTILISATION STRATEGIES[5]

Key Findings – Empirical Studies

- High performance organisations are focused on maximising the potential of their workforce and utilising this potential for mutual benefit and competitive advantage. They do this by:
  - recruiting competent workers;
  - involving them in extensive training; and
  - creating or re-designing jobs which will provide them with challenge, responsibility and control.
- In so doing, they enable the effective utilisation of skills and reduce the occurrence of skills mismatch (that is, where workers do not have the skills for the jobs they are doing, or are over-skilled for their jobs).
- High performance organisations have flatter management structures, promote participatory decision-making, and share business information with employees. They apply performance-related reward and recognition systems. Work is organised around principles of teamwork, lean production and quality management, and processes are supported by relevant and current technologies.
- Financial performance, rates of productivity, employee commitment, labour turnover and indicators of employee well-being are examples of the measures that have been used to indicate organisational performance. Originally adopted by manufacturing companies some aspects of high performance including principles of lean production are beginning to appear in business and service areas.
- This review finds a continuing debate about the types of practices that qualify for high performance, the scope and intensity of their application, and their observed impact on productivity and quality. Organisations which have implemented combinations (referred to as bundles in the literature) of high performance concepts—including employee involvement schemes, total quality management and increased computerisation and advanced technology—have been found to be more productive. However, it is not clear whether they are more productive because they have implemented these approaches, or whether they are more comfortable in experimenting with such approaches because they are successful.
- Simple explanations of high performance work organisations belie the fact that it is not easy to measure the things that help organisations achieve high performance. This is not surprising because organisations will have different core business interests, industry origins, ownership and management structures, incentive arrangements and organisational cultures. They have varying levels of financial health and access to technology and other resources. These in turn will help determine their capacity to

[5] This chapter is an edited version of a longer document prepared by the National Centre for Vocational Education Research for this project.

invest in different management and human resource practices. Whether or not effective internal arrangements are in place, it is important to note that organisations which may have adequate levels of skills utilisation and strategies for profitability in a prosperous economy may fail if there is an economic downturn.

Key Findings – Skills Utilisation Strategies

- The review of skills development and skills utilisation policies suggests that advanced economies are increasingly focused on the development of high-level skills of their populations to develop a competitive edge in global markets.
- Skills development strategies are mainly aimed at improving labour market opportunities for marginalised groups: especially the unemployed, adult workers with low basic skills, students at risk of leaving school early, and casual and part-time workers.
- Few empirical studies of the outcomes of formal skills utilisation programs could be found, but evidence of how different countries and states are dealing with recruitment, recognition of prior learning, and employer incentives are provided.

Introduction

Recent public policy debates have explored the connections between workforce development, training, and skills utilisation. These issues have become increasingly important for advanced economies faced with competition from low-wage countries for the manufacture of goods and delivery of services. Also altering the economic landscape is the de-regulation of domestic markets, including telecommunications and financial markets. This has increased the ease of global movement of goods and services, capital and information. Consumers have also increased their demands for quality goods and services, and better delivery times. These developments have led to a renewed interest in what it is that leads to high performance organisations. Concepts of what is required for increasing economic performance have also been picked up in policy initiatives for skills development and skills utilisation, both in Australia and internationally. However, the quest for business success comprises a variety of practices which have their roots in many of the applications used in the past.

This chapter comprises two parts. Part I looks at empirical studies of what makes a high performance organisation. Part II takes a different angle and looks at skills initiatives and strategies at a macro level, aimed at utilising the skills of the whole population.

Part I: High Performance Organisations—an Empirical Perspective

What are high performance organisations?

Despite the continuing debate in the literature about exactly what it is that distinguishes a high performance organisation (system or practice)[6] from its counterparts, and definitional issues surrounding the number and type of practices that must be present (Payne 2008), there is a commonly accepted view (see Box 1). It is generally accepted that such organisations harness the power of human resource management practices to improve organisational performance and competitive advantage (Sung & Ashton 2005; Boxall 2003; Appelbaum et al. 2000). High performance organisations link people, strategy and performance to arrive at success (Becker, Huselid & Ulrich 2001).

Box 1

Commonly accepted characteristics of high performance organisations

High performance organisations use 'bundles' of human resources, skills utilisation practices and work organisation arrangements, to increase organisational performance and competitive advantage. They do this by recruiting competent workers, providing them with intensive training, and creating or designing jobs that will provide challenge, responsibility and control. In so doing, they create environments for effective utilisation of skills. High performance organisations flatten their management structures, open channels of communication, share strategic business information with employees and apply performance-related reward and recognition systems (including pay for performance). They empower workers by involving them in quality improvement processes and giving them a voice in company decision-making. Work is organised around principles of teamwork, lean production and quality management, and processes are supported by relevant and current technologies. Such practices help the organisation to make best use of the talents and skills of their workers and in so doing improve organisational commitment and labour retention. Indicators of organisational success often include financial performance, rates of productivity, employee commitment, job satisfaction, labour turnover and employee well-being.

High performance organisations are promoted on the assumption that they can achieve higher flexibility and better quality of products while remaining cost efficient and competitive. Their attractiveness lies in their potential to provide higher benefits for employers as well as employees—higher productivity for employers and higher wages and higher job satisfaction for employees (Bauer 2004).

They differ in major ways from traditional organisations built along concepts of top-down bureaucratic control and standardised mass production processes and products. High performance organisations are believed to be more dynamic or responsive to their external environments, have flatter organisational hierarchies, engage workers in team work and collaborative decision-making, and produce goods and deliver services which are customised to the needs of consumers. High performance organisations have been characterised as being 'everything that the Taylorist employment practices are not ... the diametrical opposite of employment strategies based on short time cycles, skill minimisation and "one right way"' (CIPD 2007, cited in Hughes 2008, p.6).

[6] They have also been called innovative, new or alternative practices. Also used are terms like flexible specialisation systems and high commitment organisations (McNabb & Whitfield 1999).

Although high performance organisations are characterised by substantial use of computer and information technologies to meet production and quality targets, as well as increased demands from customers, they have realised they can no longer depend on technology alone to increase productivity and maintain market share (Appelbaum et al. 2000). This is why they look for a flexible, skilled and educated workforce and are prepared to pay higher wages for those they recruit and select. These wages are also often linked tightly to productivity gains. Guest (2006) believes having a competent workforce with high levels of skills and knowledge is key to high performance working.

High performance organisations are engaged in core activities for which they have the skills, experience and expertise in which to succeed. They adopt practices which support lean production principles and quality control. They believe in recruiting, training and retaining workers who have the necessary competence for the jobs to which they are at first appointed, as well as for other jobs to which they might aspire.

Such organisations believe in using and constantly developing the skills and knowledge of their workers to best effect. They want employees to be working in jobs that provide challenge, responsibility and autonomy, and will re-design jobs to do this. They keep workers involved through regular communication, sharing of information, and giving them an increased voice in company decision-making. High performance work organisations believe in the power of teams for giving workers a voice and getting them to work with others in problem-solving and generating innovative ideas to improve the quality of products and services (Shipton, Fay, West, Patterson & Birdi 2005).

High performance organisations will employ practices which align with the specific contexts of organisations and industry sectors in which they operate and that they cannot always be identified as best practice (Payne 2008). Payne believes that some of the issues surrounding high performance work organisations (systems, or practices) is that contexts and solutions are very firm-specific. In his view such findings can be used to produce ‘generative ideas that can inspire’, (p.20) rather than elements of best practice.

Nevertheless, we provide a useful framework for thinking about such practices in Table 1. Based on the work of current and earlier researchers, this framework organises high performance work practices under the themes of involving and empowering workers, re-designing jobs, processes and systems, and rewarding and valuing workers (SQW 2010; Sung & Ashton 2005; Guest 2006; Stirpe, Zarraga & Rigby 2009; Appelbaum & Batt 1994; Lawler, Mohrman & Ledford 1998; Doehringer, Evans-Klock & Terkla, 2002; see also Appelbaum, Bailey, Berg & Kalleberg, 2000; Becker, Huselid & Ulrich 2001).

Table 1: Examples of high performance work practices

Involving and empowering workers	Re-designing jobs, processes and systems	Rewarding and valuing workers
Staff receive regular information and updates (newsletters, magazines) on company performance, business strategy, business plans and targets.	Organisation reviews selection processes and vacancies in terms of business strategy. It applies principles and processes of selective recruitment, and performance management.	Staff have access to financial rewards (including pay for performance, profit-sharing, stock and share options, group incentives, bonuses, staff discounts). Organisation has policy of high basic pay for all. Staff are eligible to a range of taxation benefits (including before-tax deductions for mortgage repayments, school fees, purchase of computers and superannuation and so on). Employees are free to choose the type of reward.
Staff can belong to a staff association, work council, participative and consultative committee.	Organisation provides employees with structured orientation or induction processes and intensive training for their job or for a variety of jobs.	Organisation adopts flexible working arrangements (including flexible job descriptions, flexible working hours, flexible locations, and job-sharing arrangements).
Staff provide feedback via internal staff surveys or suggestion schemes.	Work is re-designed to improve challenge for workers and to develop and utilise their skills, knowledge and talents.	Staff are involved in job rotations.
Staff are involved in total quality management processes.	A quality assurance system is in place to evaluate processes and outcomes and to implement continuous improvement.	Organisation offers non-financial incentives (including gifts, free meals, health packages, team prizes, praise).
Self-managed and self-directed teams, cross-function teams.	Best use is made of latest technologies, equipment and resources.	Benefits apply to relatives (including spouses and family members). Organisation implements family friendly policies.
Staff are involved in continuous improvement (e.g. Kaizen approach).	Lean production methods are used to streamline production and service processes.	Organisation values its employees by ensuring secure jobs, career paths, internal promotions.

How do we obtain measures of high performance and success?

Common indicators of success are higher productivity, profitability, quality, and worker job satisfaction, and lower labour turnover and absenteeism. Guest (2006) talks about measures of worker well-being which refer to worker job satisfaction, mental and physical health and broad life satisfaction, work–life balance and levels of stress. Cost reductions of supervision, and the ability for individuals to use new skills, are also indicators of success (Birdi et al. 2008). Becker, Huselid and Ulrich (2001) use measures including number and quality of cross-functional teams, number and type of special projects to develop skills of those with high potential, ratio of backup talent, and range of performance appraisal ratings. Boxall & Macky (2009) note the need to measure the effect of increasing employee involvement on the extent to which work and workplace pressure is intensified. In Table 2 we describe some techniques that can be used for obtaining measures of high performance practices, and indicators of success.

Whatever measures are used, we need to understand that it is essential to understand the context of the organisation, the industry sector in which it is located, the economic climate in which it operates and the capital equipment, resources and technologies available to it (Payne 2008).

Table 2: Suggestions to obtaining measures of high performance organisations as well as indicators of their success

Involving and empowering workers	Re-designing jobs, processes and systems	Rewarding and valuing workers
Employees are interviewed to obtain information of their involvement in identified high performance practices. They are also asked about whether these have increased workloads and pressure. **Employees complete attitude surveys to report on their extrinsic and intrinsic job satisfaction.** **Human resources manager provides information on employee engagement policies, including establishment of participative and consultative committees, work councils, staff associations.**	Human resources manager is interviewed to describe organisational processes for selective recruitment and performance management. Managers are interviewed to provide information on how they apply these processes, and evaluate outcomes.	Human resources manager provides information on company policy regarding pay for performance and other financial and non-financial benefit arrangements, salary or wage schedules, flexible work arrangements, job rotation policies, and internal career pathways.
Managers provide information on results of internal staff surveys and suggestions schemes. **Groups of employees are interviewed for their views of what happens to their suggestions.**	Human resources manager provides information on training policy, and records of employees involved in training.	Employees are interviewed to understand whether they receive any career support and are encouraged to apply for internal promotions.
Employee groups and managers are interviewed to describe how altered or improved work processes have emanated from quality circle or improvement groups or other feedback or idea generation arrangements.	Interviews with staff and line managers to describe how work has been redesigned and whether that has utilised their skills and knowledge.	Human resources manager provides information on latest redundancies.
Managers provide organisational charts to describe how workers are organised into teams and descriptions of the roles and responsibilities of teams.	Human resources or quality assurance manager is interviewed on quality assurance processes in place.	Attitude survey includes questions on the types of rewards that employees value.
Managers provide policies about arrangements for continuous improvement.	Operations or IT managers are interviewed about the type of technology available to workers to do their jobs.	
	Managers are interviewed about the implementation of lean systems and processes.	
Indicators of success		
Human resources manager provides information on labour turnover, performance ratings, backup talent, absenteeism and occupational health and safety issues. Accountant provides information on profitability, productivity, and costs. Quality or operational manager provides information quality arrangements, cross-functional teams, inventories, throughput time, re-work rates, and down-time. Surveys of customers and employees are analysed to obtain rates of customer satisfaction, employee extrinsic and intrinsic job satisfaction, development and use of new skills, and matching of skills to jobs.		

Why use concepts of high performance organisations?

Early adoption of concepts of high performance organisations has been driven in the United States by the perceived superiority of the Japanese as well as the Swedish approach to management, streamlining of production processes and worker empowerment in manufacturing, especially automotive manufacturing (Appelbaum & Batt 1994; Shih, Chiang & Hsu 2006; Appelbaum, Bailey, Berg & Kalleberg 2000). These work practices were identified as the key to Japanese productivity and superior quality of products; they included job rotation, teamwork and increased employee involvement in decision-making.

Another key rationale, more important in the last decade or so, is that the new workplace, increasingly characterised by widespread computerisation and telecommunications technology, needs new types of workers. Such workers must be prepared to adapt to change and require a wide range of aptitudes, including the generic competencies to adapt to new situations or job tasks. Modern workplaces need workers who are competent in their jobs and can be allocated to different jobs when they are required to do so (Guest 2006).

How extensive is the take-up of high performance work practices?

The take-up of these practices within and across companies and sectors is highly variable. Results from the UK Commission's Employer Survey (a survey of 13 000 employers) has found that just one third of employers in the United Kingdom had implemented some high performance work practices (UK Commission 2008). The uptake of such practices is also low for the United States (Blasi & Kruse 2006), and Australia (Martin & Healy 2009). This makes it difficult to generalise too much about the positive effects of high performance practices on productivity or quality performance (Black & Lynch 2001).

The incidence of uptake of such practices should not be mistaken for intensity of implementation or quality of implementation. For example, some companies are prepared to implement more of these practices for more of their workers than others. There are also large differences in what companies report, or in what researchers identify, as a high performance practice. For example, an employee involvement scheme may include joint participation by workers and managers in decision-making, or it may refer to the existence of less intensive approaches like suggestion schemes (McNabb & Whitfield 1999). This variability also makes it difficult to evaluate the effectiveness of such practices.

The take-up of these practices, including training, is also a function of the inter-connectedness or social networks of managers (Erickson & Jacoby 2003). If managers are engaged in multiple networks, then this affects the level of implementation and results in such practices being adopted more widely throughout the organisation.

We have been unable to find many empirical studies using statistical techniques to predict the extent or benefits of high performance work organisations in Australia. However, Martin and Healy (2009) provide us with an overview of findings from 34 case studies of their take-up in a variety of industry and worksites. They also find that the take-up of these practices is varied and their intentions do not always accord with the idealised vision of high performance work organisations. Weisner, McDonald and Banham (2007) have studied the Australian experience and find that their uptake in small and medium-sized firms (SMEs) is not high. They suggest that this is because SMEs do not take a long-term view of business and tend to allocate resources on an adhoc basis in response to emerging issues. This is also supported by findings in the United Kingdom (Stirpe, Zarraga & Rigby 2009).

There are a number of barriers and challenges to the implementation of high performance work

practices that may affect their take-up, including cost of implementation, lack of management understanding and doubts about benefits, and low levels of trust. There may also be concerns about letting go of managerial power and flattening or freeing up communication structures (Guest 2006). Guest is of the view that if organisations were to note that such practices had produced benefits for key competitors, this may influence organisational take-up. How effectively and comprehensively a specific practice is implemented may also explain lack of success (Birdi et al. 2008).

Implementing concepts of lean production

The appropriate division of tasks among workers has been adopted as a key step towards achieving production or service objectives and targets, but such an approach is not confined to modern times. In its current forms it is reflected in concepts of 'lean production', which are in most places based on the identification of the optimum ways for organising work environments, work tasks, human and physical resources and space to eliminate wastage. Such concepts, especially in manufacturing, have been used to devise the best ways to structure tasks to eliminate inefficiencies and improve productivity. The basic premise of 'lean manufacturing' or 'lean production' relates to efficiency in the organisation of equipment, materials and processes to ensure a smooth functioning production process. Lean manufacturing systems like the Japanese 5S approach provide a set of principles about how to organise and locate the best place for parts, robots and other machinery. 5S programs are about streamlining processes and reducing wastage of materials and of time, but they do not always provide standardised approaches to task performance. There continues to be a search for the most efficient and effective sequences of work steps and techniques for assembling. This too is not a new phenomenon, but a contemporary version of earlier approaches.

Lean manufacturing has spread more quickly in the manufacturing industry than other industries because of the early success of Japanese manufacturing techniques (Cappelli & Rygovsky 1994; Appelbaum & Batt 1994), and due to its suitability for production work. An indicator of the spread of lean manufacturing in Australian industry is the successful implementation of the nationally endorsed Competitive Manufacturing qualifications developed by Manufacturing Skills Australia (MSA). These qualifications cover lean manufacturing skills. First introduced in 2004, these qualifications and are now offered by many RTOs. A recent unpublished MSA survey of RTOs delivering the qualifications indicates that in 2009 there were over 1500 enrolments.

Lean thinking has not spread to the same extent in other service sectors—for example, transportation, distribution, or public utilities—because these services are far more focused on ensuring reliability and consistency of service rather than standardised products.

Nevertheless, there are signs that lean methods are beginning to be adopted in service organisations like hospitals and offices. Many of the RTOs participating in the MSA survey reported that they had adapted the Competitive Manufacturing qualifications to cover lean thinking skills for non-manufacturing enterprises or manufacturing support areas, such as administration, warehousing and logistics.

Lean methods are also becoming a focus in the health industry. Flinders Medical Centre in South Australia (Flinders Medical Centre 2008) has adopted a 'Re-designing Care' program which makes use of lean principles and lean thinking tools to improve production based on the needs of the patient, rather than on the needs of the organisation. These thinking tools include value-stream mapping (not unlike concepts of problem-solving flowcharting used in quality

management paradigms) to improve the flow of materials and information.[7] It is based on workers coming together to chart current work steps and processes, identify issues and develop improvements. They have also applied processes like 'streaming' to reduce overcrowding, and delays in commencing required treatment for patients presenting to Emergency Departments. Here, patients are grouped according to whether they are likely to be sent home or to be admitted and seen in separate areas.[8] Such processes have decreased the hour 'waits' for patients and the number of patients in the Emergency Department for any one day.

Lean principles have also been promoted as being applicable to the office. Consulting firms advocating the application of lean principles to office organisations commonly emphasise the need to focus efforts on meeting customer needs, eliminating waste, including unnecessary paper work and bureaucracy (Technech 2008). It is clear that the principles espoused here are also key aspects of quality management principles.

Implementing concepts of team production and teamwork

Models of work organisation based on 'team production' are central tenets of high performance work organisations (Appelbaum, Bailey, Berg & Kalleberg 2000).

In Australia, the adoption of high performance work practices is most commonly observed in the adoption of teams and teamwork (Martin & Healy 2009) as a key employee engagement practice; not only in manufacturing, but also in service industries.

The application of principles of team production in hospitals has more often than not been introduced to complement other lean systems thinking. The 'Redesigning Care' program at Flinders Medical Centre in South Australia (see Box 2) has adopted a team-based philosophy which is encapsulated in the words of its General Manager (Flinders Medical Centre 2006, p.4) 'Redesigning Care can't be done by one person or even a handful of people. It requires a team effort across all areas of the hospital. It's about a new way of thinking, a new way of doing things, a new service culture—with the patient's needs at the core of each decision made'.

[7] Material flow in the hospital context refers to the movement of patients to subsequent steps in the care process, while information flow refers to the communication of required information to enable the patient to move to the next step.

[8] Patients can only jump the queue if there is a life or limb-threatening issue.

Box 2

Re-designing Care at Flinders Medical Centre, South Australia

In November 2003 the Flinders Medical Centre decided to apply concepts of lean thinking to its operations. It was at a time when the Emergency Department was experiencing high levels of congestion which was providing frustration for patients, staff and management, (Ben-Tovim, Bassham, Bennett, Dougherty, Martin, O'Neill, Sincock and Szwarcboard (2008). In some areas wards were also experiencing shortages of staff, including medical staff (Flinders Medical Centre 2005).

One of the early applications of team-based lean thinking principles to improve patient care and workflow processes was the *team-based care trial* implemented in the renal service home ward (Flinders Medical Centre, 2005). In this trial the number of junior doctors in the general medical team was reduced from three to two, and workflow was re-organised to enable them to concentrate only on patients allocated to their home ward. The co-location of patients and general medical team in this home ward helped to reduce the time required of the medical team to visit patients located outside the home ward (generally known as outliers). A complementary 'ward pull' process was also implemented. This process aimed to have staff from the home ward (rather than staff from the Emergency Department or central admission unit) identify prospective patients for the ward and arrange the necessary transfers. Historically the hospital had employed a 'push' process where the Emergency Department moves patients on as soon as a bed is available and a medical 'take' process where medical teams are rostered to take on any admissions and continue their care. The *team-based care* trial was successful and reduced the number of patients being cared for outside their home wards by half, patient turnover by a fifth, and patient stay by one day. Staff also reported high satisfaction with the process.

The 'ward pull' process at Flinders Medical Centre is also overseen by a central coordination group which monitors and assists in placing patients in the 'next best place' should the home ward not have the required number of beds. The 'ward pull' intervention reduced by a quarter the time for patients to be admitted to wards, and has reduced their wait from 5 hours 50 minutes to 4 hours 20 minutes. There has also been a 10% increase in discharges before midday. Operating initially during week days and business hours, the 'ward pull' approach has been applied also to weekends and to evenings (Flinders Medical Centre 2005).

Since trialling lean thinking paradigms to improve the way work is organised and service is provided, Flinders Medical Centre has redesigned many of its processes to improve the patient journey (Flinders Medical Centre 2008). It has also 'enabled the hospital to provide safer and more accessible care during a period of growth in demand' (Ben-Tovim, Bassham, Bennett, Dougherty, Martin, O'Neill, Sincock and Szwarcboard (2008, p.S27).

Understanding the commitment and motivations of workers

High performance organisations are said to have a committed and motivated workforce which, in turn, leads to higher discretionary effort and lower labour turnover. If organisations want to raise the commitment and motivation of their workers, they will need to introduce processes and systems which utilise the skills of their workers to maximum benefit and provide them with extrinsic rewards they value (like pay) and opportunities to contribute and to do challenging work (Guest 2006).

High performance organisations are also said to present themselves to possible recruits as having a positive work environment. That workers were not only spurred to superior effort by better wages and conditions, but also by factors which are intrinsic to the job itself, are key findings about human behaviour that have influenced the way we think about motivating workers today (Guest 2006). If we want to know what motivates workers, then we must turn to work done by Maslow (1964) for some fundamental principles about the relationship between motivation and the satisfaction of basic and higher needs. Work by McGregor (1960) and Herzberg, Mausner and Snyderman (1959), however, tells us that the question of what motivates workers to do better does not always have such a straightforward answer.

Guest (2006) is of the view that organisations would do better to increase their focus on intrinsic satisfaction rather than extrinsic rewards if they are to improve commitment and motivation as key ingredients for high performance. This means redesigning jobs to provide workers with the challenge and opportunity for learning and a sense of fulfilment. He also notes that if workers are to be motivated by rewards, these need to be valued rewards which the worker accepts as being awarded for his or her effort or performance.

Paying for and rewarding performance

Pay for performance has been identified as a key principle of modern or high performance organisations, but actually these concepts were adopted by the early management consultants and theorists like Taylor who believed that when you paid someone for the amount of work they produced, they were more likely to work harder. Such ideas are also reflected in past and present incentive compensation schemes like the piece-rate system, historically adopted in the apparel industry for the production of garments.

We have reviewed a number of studies which found that high performance organisations pay higher wages (Osterman 2006; Cappelli & Neumark 2001; Appelbaum et al. 2000; Doehringer, Evans-Klock & Terkla 2002; Delaney & Huselid 1996; Guest 2006). There are other studies that suggest that pay for performance schemes lead to inequality among workers (Black & Lynch 1991; Guest 2006). Guest is of the view that pay has the potential to be divisive and for this reason it should be perceived to be fair. He also notes that high performance work organisations 'take pay out of the equation by offering high basic pay' (p.4).

Pay for performance systems have also been used in European countries to elicit discretionary effort from workers. These schemes include profit-sharing, stock options, and group bonuses. Bauer (2004) found that the use of such incentive payments was most common in the United Kingdom, Finland, Sweden and France, with only few workers in Portugal, Greece, Spain and Denmark being involved in such schemes. Involving non-managerial employees in profit sharing schemes has also had a positive effect on productivity (Black & Lynch 2001), as has unionisation coupled with participatory decision-making in addition to incentive-based schemes. In contrast, unionised establishments that do not adopt such practices are found to have lower productivity.

Pay for performance schemes are often part of a broader program of performance

management. In the Australian context, they have been found to help clarify standards and role definitions. Their effectiveness is dependent on how they are implemented by managers and accepted by workers.

Systems of non-financial rewards such as prizes, family friendly policies, meals, prizes, extra days off, are also used by companies to recognise and reward workers for their effort (Sung & Ashton 2005).

Giving workers a voice

Employee involvement (EI) is about ways of involving workers in organisational decision-making, sharing with them important work unit information and creating jobs which provide employees with challenging, diversified and exciting work. Appelbaum et al. (2000) are of the view that employee involvement is central to high performance organisations, especially in manufacturing, mainly because it is designed to enable front-line workers to have a voice in how to structure routine tasks and processes. Involving workers in decision-making has also been found to raise labour costs per employee which can also reflect costs of higher wages (Cappelli & Neumark 2001). Lawler, Mohrman & Ledford (1998) observe that although there is a growing uptake of EI practices across organisations it involves only small groups of workers within them. Nevertheless they conclude that such practices have been and will continue to be important for those organisations wishing to use such approaches for competitive advantage.

Concepts of the self-managing team have been found to be especially important to those companies that wanted to raise their levels of employee involvement (Lawler, Mohrman & Ledford 1998). This approach allows workers to experience the autonomy, responsibility and control that is required for self-direction. An earlier study by one of these authors (Lawler 1996, cited in Lawler, Mohrman & Ledford 1998) suggests that firms may be attracted to concepts of the self-managing team because they reduce requirements for other direct forms of supervision, and enable the team to decide when and how it will interact with managers and groups from across the organisations. When workers are given more control over tasks and input into decisions, and can communicate regularly with colleagues, this involvement increases their job satisfaction (Bauer 2004).

Work practices including regular communication with employees and their involvement in decision-making, peer supervision, and quality processes improve organisational performance (Doehringer, Evans-Klock & Terkla 2002). They have also been found to increase worker intrinsic satisfaction and levels of trust between workers and managers which in turn lead to higher levels of organisational commitment. This means that front-line workers are more willing to apply ‘discretionary effort and to work harder’ (ibid p.234), thus helping enterprises to become economically competitive. These practices not only improve efficiencies and productivity, but they also help firms to accumulate knowledge that can be drawn on for promoting and achieving innovative goods and services. High performance practices which provide more power for employees by providing them with a voice in decision-making have been found to be key factors in raising productivity (Black & Lynch 2001). More recently, partnership or non-adversarial relationships between employers and employees, combined with high performance work practices, have been found to be positively related to productivity and innovation, and negatively related to labour turnover (Flood, Guthrie, Liu, O’Regan, Armstrong, MacCurtain & Mkamwa, 2008).

When we look at the uptake of these participatory practices, we find that it is influenced by organisational size, the extent of casualisation, use of advanced technology and levels of external competition (McNabb & Whitfield 1995). Size matters to the implementation of

employee participation schemes, with larger organisations more likely than smaller firms to adopt formal employee involvement arrangements and smaller firms more likely to adopt informal practices. Employee involvement schemes are also less observed in places with a highly casualised workforce, presumably because a highly casualised workforce is not conducive for inculcating values of the benefits of group or team effort rewards as opposed to those that are aimed at rewarding individual performance. Companies using high levels of advanced technology are also more likely to adopt a variety of employee involvement schemes. There is also evidence that companies operating in low-competitor markets adopt employee involvement schemes, perhaps because they are more able to control their markets and are not subject to production time pressures to the same extent as companies operating in high competitor markets.

Applying quality management techniques

Total Quality Management (TQM) refers to management principles which apply to the whole organisation and aim to simplify work processes. The basic premise is to implement processes which best meet or exceed customer expectations and to use measurement and controls to implement continuous improvement. TQM expects workers to be responsible for the quality of their own work, and relies on the commitment of top management to support adequate implementation. TQM is closely aligned to employee involvement in decision-making and uses practices such as quality circles, suggestion schemes, and improvement groups or their equivalents to give employees a voice.

In some ways, TQM reflects traditional standardised production processes promoted in the past. The main difference is that now front-line workers can apply processes which help to monitor the quality of their own work and that of peers. Interestingly, Black & Lynch (2001) in their analysis of establishment productivity did not find that TQM predicted higher productivity overall. However, the percentage of workers that were involved in TQM practices like regular decision-making meetings was associated with higher labor productivity, as were other practices including benchmarking.

The concepts used in TQM are also aimed at eliminating waste and adding value to current processes and systems. They are essentially focused on the customer and these are also key tenets of lean production and service systems.

Re-engineering processes and tasks

When we use the term re-engineering, we mainly refer to activities which improve or change organisational processes and structures (Lawler, Mohrman & Ledford 1998). Such processes are generally driven by senior management acting on the advice of external experts and management consultants. It became popular in the 1990s as a way of helping firms achieve efficiencies through reductions of costs and routine production cycles. Re-engineering often relies on information technology to simplify and accelerate administrative, production and customer service functions. Eighty-one percent of the companies studied by Lawler, Mohrman & Ledford (1998) had implemented some type of re-engineering process, often for cost reductions, downsizing or accelerating the speed of production and bringing products to market. When asked to rate the success of such approaches, companies in this study reported that the re-engineering processes adopted had provided them with positive outcomes.

Computerisation and levels of education have also been linked to higher productivity. The higher the use of computers by non-managerial workers in a firm, the higher is the productivity of that firm. This is not the case for higher usage by managerial employees. And the higher the

education level of non-production workers, the higher the productivity (Black & Lynch 2001).

The restructuring of processes and tasks is also driven by changes in governance structures and compliance requirements. It often means that organisations need to reorganise work expectations to meet strict performance targets based on the completion of specific tasks, including increased documentation.

The re-design of jobs to provide employees with more autonomy and challenge and combining this with more people involvement is considered by Guest (2006) to have the most influence on increasing employee commitment, participation and willingness to contribute.

Training employees for jobs and for flexibility

High performance organisations are reliant for success on employees knowing their roles in different structures and work processes, and having the skills to be able to do it and willingness to learn (Guest 2006). Employees must be able to work with new technologies and systems, and engage in complex negotiations or service provision in an environment which is constantly changing. They may be required to generate innovative ideas, solve complex problems, and implement different ways of working. By improving their skills and knowledge, workers will then be able to produce high quality goods and services and so contribute to organisational success. They will also be able to transfer such skills to a variety of jobs. This naturally means increasing worker involvement in training, whether on the job or off the job.

Employee involvement in training has been positively related to actual and perceptions of organisational success (Birdi et al. 2008; Delaney & Huselid 1996). When the type of training provided for employees is analysed, Lawler, Mohrman & Ledford (1998) find that training in the areas of group decision-making, problem-solving and leadership training had increased between 1987, 1980 and 1996. However, they also find that most employees within organisations are not provided with training in business operation. They notice an increase in the occurrence of quality and statistical skills training, also considered to be key knowledge requirements for effective participation in quality processes and team and corporate-wide decision-making. This increase in provision only affects small numbers of workers; the great majority of employees do not participate in this training.

Team-building training has also increased over the years, but once again most employees are not trained to develop these team skills. What most workers are involved in (in 50% of the companies studies studied by Lawler, Mohrman & Ledford 1998) is job skills training. Companies are far more interested in workers developing the skills they require to do their jobs, rather than the skills required for working with others.

Companies want to hire workers who have the ability and willingness to learn a variety of skills so that they can be transferred between functions and processes to suit organisational needs for flexibility, and individual desire for variation and progression. This transferability requires workers to have multiple skills and is reflected in the concept of multi-skilling adopted in Australian award restructuring reforms of the 1980s.

Utilising skills to best advantage

The argument goes that when organisations create jobs that make best use of the skills and potential of their workers, they will increase job satisfaction and organisational commitment, which will, in turn, help them retain employees and reduce labour turnover. Having satisfied and committed workers with the competence and interest in doing their jobs will increase the amount of discretionary effort they are willing to apply, and will lead to higher levels of organisational success. Guest (2006) is of the view that it is important to focus on effective skills utilisation because 'there is no advantage in having highly competent workers who are demotivated or under-utilised ...[or in having] ... highly motivated but incompetent workers, or [those who are] ... neither competent nor motivated' (p.5).

A set of case studies (SQW Consulting 2010) which illustrates the type of skills utilisation practices to be employed by workplaces has been prepared for the Scottish Government. These practices are similar to those commonly associated with high performance organisations and rely on human resource concepts to recruit and reward workers and organise work (see Box 3).

Box 3

Best Strategies for Skills Utilisation (SQW Consulting 2010)

Enterprises wanting to make best use of the skills and potential of their workers for mutual benefit need to adopt practices commonly associated with high performance organisations, including 'meaningful and appropriate encouragement, opportunity and support' (p.1). These were the main assumptions of the Scottish Skills Utilisation Leadership Group in commissioning the research. Case study enterprises were found to have adopted these practices for a variety of reasons. For some, it was led by senior executives believing in harnessing the potential of workers for the benefit of the company and the organisation. For others, it tended to fit in with existing cultures which valued a supportive and open environment. Companies in highly competitive markets implemented such practices because they required skilled and flexible workers able to respond to changing volumes of customer demand. In many cases, such practices took time to evolve and often needed to be taken 'one step at a time'. Crucial to successful implementation was the commitment of senior and middle managers, and staying true to the fundamental principles of the approach. Communication channels were freed up to improve transparency and encourage feedback from workers. The case studies commonly applied practices associated with high performance but it was clear that no one practice used in isolation would be effective and that the success of an approach depended on the particular context in which it was applied. Nevertheless, appraisals and regular information sharing about the business were found to be most commonly adopted across the enterprises. Employee involvement practices and human resource practices were more frequently applied than reward and commitment (financial and non-financial rewards) strategies.

Reducing the occurrence of skills mismatch

Skills mismatch describes situations which are opposite to those of effective skills utilisation. In enterprises skill mismatches occur when they cannot employ workers with the job-specific skills required, or hire them at the going market rate. Skills mismatch may also occur when existing workers are placed in jobs for which they do not have all the required skills, either because it is an emerging area and skills are not yet available or are too expensive to buy in. Skills mismatch in organisations may also happen because of over-skilling or over-education; that is, when the worker has more skills or qualifications required for the job (Mavromaras, McGuinness & Fok 2009). Skills mismatch can also be a function of skill shortage generally (Strietska-Ilina 2008).

It makes good sense for enterprises to introduce jobs which provide workers with challenge, responsibility and control, and to involve them in problem-solving teams and decision-making. First, it makes best use of the skills and talents of employees to increase organisational commitment and discretionary effort. But it may also counteract negative effects that result from skills mismatch, including increased wages and recruitment costs, lowered company competitiveness, and greater workloads for other workers which have been found to result from skills mismatch (Strietska-Ilina 2008).

Mavromaras, McGuinness & Fok (2009) have examined skills mismatch by looking at over-skilling. They focus on over-skilling because they are of the view that this will give the best indication of under-utilisation of skills. Their study finds that in comparison with those who have no post-school qualifications or university education, workers with post-school VET qualifications (especially at Certificate III and IV) are less likely to be in jobs for which they are over-skilled. If they happen to find themselves in such jobs, they are less likely to suffer negative effects including periods of unemployment. Over-skilling can also happen to those with higher education qualifications, who tend to suffer the worst effects. For these graduates, skills mismatch has a longer persistence, and they suffer from lower wage returns as a result.

Implementing bundles of work practices

The take-up and application of high performance work practices is variable. Some organisations adopt such practices as one-off modifications to traditional ways of working, while others embed them in a more comprehensive or clustered approach. Typically, the comprehensive approach (also referred to as bundling in the literature) is more tightly linked to productivity growth Lawler, Mohrman & Ledford 1998; Appelbaum & Batt 1994; Stirpe, Zarraga & Rigby 2009), while changes in individual work practices have little or no effects (Ichniosky, Shaw & Prennushi 1997). The importance of viewing high performance work organisations as systems rather than as isolated practices is also supported by Guest (2006).

Cappelli and Neumark (2001) find some evidence for the positive impact of sets of high performance work practices in raising productivity and lowering labour costs. In contrast, their findings do not reach statistical significance when a number of different sets of practices are combined to produce desired synergies. Some practices can have a number of outcomes; for example, if organisations implement flexible work arrangements then they may raise worker involvement as well as worker commitment and so on (Sung & Ashton 2005). Concepts of worker empowerment, teamwork and extensive training have had higher impact on organisational performance than operational systems including total quality management, just-in-time production, advanced manufacturing technology, and supply-chain partnering (Birdi et al. 2008).

Despite these findings, the national uptake of multiple high performance work practices is very low, with very few establishments implementing them nationally in the United States (Blasi &

Kruse 2006) and in the United Kingdom (UK Commission 2008). In speculating on why it is that uptake is low in the United Kingdom, Guest (2006) raises issues about ignorance of just what these practices entail, and low valuing of their usefulness by managers. Implementing such systems may be felt by managers not to be worth the disruption required to have wholesale changes to the traditional ways of working. He also wonders whether managers may be too busy, may not really believe that investing in the skills and talents of workers will lead to competitive advantage, or are generally reluctant to give workers more autonomy and control.

Sectoral variations are also apparent in the uptake of high performance practices in the United Kingdom. An analysis of the Employer Survey comprising information from 13 000 employees found that where just one-third of employers had implemented these practices, almost seven in ten public sector organisations had done so and 20% of UK aerospace establishments had done so. The uptake of such practices is greatest in those sectors that compete in international markets, have higher levels of advanced technologies, and are required to respond to greater demand by customers for more customised products, timelines and specific quality (UK Commission 2008).

Organisational size also affects take-up and Edwards (2007) notes the although there is greater take-up among larger companies, high performance practices may have some usefulness for smaller firms. In the United Kingdom it seems that some practices like performance appraisals have been most commonly used (Sung & Ashton 2005).

Part II: Formal Skills Development and Utilisation Strategies in Australia and Overseas

This section is primarily about the skills development and skills utilisation policies and initiatives being advocated and adopted in different countries including the United Kingdom, United States, Germany, Australia and Singapore. It also touches in brief on concepts of skills mismatching. The section begins with some examples of different strategies for skills development and follows these with others about skills utilisation.

International skills development strategies

When looking at international strategic directions on skills development and skills utilisation, we turn to Europe—in particular Germany and the UK—both of which have mandates inside the European framework, under the National Reform Programme of European Union. In 2000, as a response to the European economies falling behind that of the US, the EU agreed on the Lisbon Strategy which aimed by 2010 to make Europe 'the most dynamic and competitive, knowledge-based economy in the world, capable of sustainable economic growth, with more and better jobs and greater social cohesion' (Her Majesty's Government 2008). Under periodic review, this agenda brings regular strategic change to the National Reform Programmes of each member state. The Spring European Council 2008–2010 refocused on four of the 2005 priority actions, that is:

- investing in knowledge and innovation;
- improving the business environment;
- increasing employment opportunities for the most disadvantaged; and
- defining a climate and energy policy for Europe (Her Majesty's Government 2008).

Additionally for the UK, the European Council endorsed a country-specific recommendation to 'implement recent plans to substantially improve skill-levels and establish an integrated approach to employment and skills in order to improve productivity and increase opportunities for the disadvantaged' (Her Majesty's Government 2008).

Not all countries are tied to such agreements; in the US, labour reform is driven by the American Recovery and Reinvestment Act 2009, which aims to create jobs and transform the economy (United States Office of Management and Budget 2009). The goal of Singapore's Economic Strategies Committee (ESC), charged with developing the strategic direction for Singapore's economic future, is to sustain economic growth faster than other advanced economies (Singapore Economic Strategies Committee website 2010). In Australia, each of the States and Territories has developed strategies to develop the skills required for the future and for international competitiveness. We discuss these later on in the report.

International skill strategies have many commonalities. They commonly adopt broad governmental approaches, often between the departments of labour, education, economic development and social welfare. Strategies take direction in the line of:

- fostering a continuous learning culture;
- engaging with and preparing youth for a knowledge-based economy;
- investing in advanced technologies through research and development and advanced technical training;
- supporting business to think innovatively to increase productivity; and
- facilitating the necessary reform to support the above.

Initiatives such as collaborative partnerships between industry and industry councils, trade unions, training providers and government aim to improve the responsiveness of the training system to emerging demands. A key aim is to simplify the training system to facilitate pathways from vocational training to higher levels of education. There is a strong move to financially support and encourage innovative business concepts and new business start-ups. Business is being persuaded to think resourcefully and to ensure it utilises workforce skills to increase productivity and this is supported by executive and senior management training. To empower the individual to adapt a lifelong learning philosophy, support mechanisms such as the Train to Gain program in the UK provide a single-point access to information on careers, further training and job opportunities.

In 2004 the Leitch Review (Her Majesty's Government 2006) looked at the UK's long-term ambition for developing skills. On international rankings, the UK ranked outside the top quartile in all skill levels against Organisation for Economic Co-operation and Development (OECD) standards. As a driver of productivity and employment, the review concluded that if the UK was to be a global economic competitor it needed to be a world leader in skills by 2020, benchmarked against the top quartile of the OECD (Her Majesty's Government 2006). The review highlighted that 70% of the 2020 working age population had already left compulsory education, resulting in many of the recommendations focusing around 'adult skills' initiatives. The UK's 'Skills for Growth—the national skills strategy 2009' has been developed on the recommendations of this review and the obligations under the National Reform Programme. It is annually reviewed against targets by the independent advisory body UK Commission for Employment and Skills.

In Germany, skills development and strategies for skills utilisation are driven by the 'National Reform Programme 2008–2010' and the 'Reforming, Investing, Shaping the Future—Policy for More Employment in Germany'. Germany has a skilled workforce in part due to the popularity of the dual education system, a pathway for around 60% of German youth (Germany Trade and Invest website 2010). German industry has a history of being proactive in the development of its workforce and has long embedded workforce development within strategic planning in support of the dual system. Coming from this position of strength based on the availability of a well-trained German 'Facharbeiter' (skilled worker) workforce, Germany is concentrating its effort towards advancing highly technical and mastercraft skills. It is doing this by providing support for small and medium enterprise (SMEs)[9] to develop and implement new technologies and adapt to new products and services (German Federal Ministry of Economic and Technology 2009). There is also a push to incorporate business thinking skills into training.

[9] SMEs employ 70% of the workforce (Die Bundesregierung website 2010).

Political and economic change in the US has shaped the immediate focus of the US labour reform to concentrate on reducing the unemployment rate. Training is on the agenda in the area of 'green' jobs in support of the recovery act, as well as to up-skill those recently out of work and the low skilled. The US Bureau of Labour Statistics projects that almost 7.5 million of the 15 million net new jobs created by 2016 will require postsecondary education. By 2016, jobs requiring postsecondary education will increase by 17%, which is double the rate of 8.8 for jobs which will not require this level of education (Centre for American Progress 2009). Like Germany, the US has a focused innovation strategy which embeds skills training and utilisation. The US aims to break from the competitive world of manufacturing and services and invest in emerging technologies such as nanotechnology, which may have potential benefits for multiple industries. Targets include an increase in college graduates, especially in the science, technology, engineering and maths subjects, to improve technical expertise. To best utilise these skills, the US is proposing a 'start-up' visa to encourage foreign entrepreneurs with innovative concepts to conduct business in America. It is worth noting here that in the 1980s internet-based information and computing services were in an embryonic state; now they bring an estimated value of $2 trillion to the US annual GDP (Executive Office of the President of the United States 2009).

In 2003 the Singapore Ministry of Trades Economic Review Committee released a report on equipping Singaporeans for the future to ensure the country's central position in the globalised economy. The report concentrated on how to build the human capital of individual workers and the human capital pool of the nation. Recommendations for action included: developing the full potential of every individual, engaging in manpower planning, fostering a global mindset, tapping overseas networks, attracting foreign talent, enhancing human capital management and enriching the environment (Singapore Ministry of Trade and Industry 2003). Since that time, the newly formed Economic Strategies Committee is progressing these objectives through its skills and innovation agenda. Singapore has been proactive in equipping its youth for a knowledge-based economy. The Ministry of Education has implemented a 10-year IT Master Plan to build information technologies into the national school curriculum. The plan is in its final phase of implementation[10] (Singapore Minister of Education website 2008). Singapore is also interested in improving higher-level skills like leadership and management, as well as adopting high performance systems like job design and the 5S approach to lean production.

[10] It is now in the position to take the learner to a deeper level of thinking, with 3-D representation of scientific concepts and reconstructions of events. The learning experience is reinforced by promoting further discussion and adapting collaborative learning strategies through a social networking medium.

Australia's National Reform Agenda (NRA)—agreed to by the Council of Australian Governments (COAG)—aims to improve the economic prosperity of Australia and Australians. A series of intergovernmental funding agreements has been made. Targets for 'Skilling Australia for the Future' have been agreed under the National Agreement for Skills and Workforce Development (coming under the umbrella of the Federal and Financial Relations Agreement). Key objectives are the improvement of outcomes for all Australians, with a particular focus on Indigenous Australians. The following statements act as guiding principles:

- All working aged Australians have the opportunity to develop the skills and qualifications needed, including through a responsive training system, to enable them to be effective participants in and contributors to the modern labour market.
- Individuals are assisted to overcome barriers to education, training and employment, and are motivated to acquire and utilise new skills.
- Australian industry and businesses develop, harness and utilise the skills and abilities of the workforce. (COAG 2009).

In table 3 we identify the priority objectives for skills development and utilisation for each of our countries of interest.

Table 3: International strategies for skills development[11]

UK & Germany	**Lisbon 2005: 6 out of 8 key actions:** • supporting of knowledge and innovation in Europe; • improvement and simplification of the regulatory framework in which business operates; • completion of the internal market for services; • removal of obstacles to physical, labour and academic mobility; • developing of a common approach to economic migration; • supporting of efforts to deal with the social consequences of economic restructuring.
United States	**Creating jobs and transforming the economy to deliver:** • a prepared workforce; • a competitive workforce; • safe and secure workplaces; • strengthening economic security for workers including unemployment insurance, workers' compensation, union transparency, and pension and health benefits.
Singapore	**Achieving sustained economic growth, faster than other advanced economies by:** • developing depth of talent and superior capabilities; • seizing growth opportunities; • optimising use of scarce resources; • creating quality jobs and real wage growth for the broad majority; • making continued social investments for an inclusive, upwardly mobile society.
Australia	**Australia has the workforce capability required for a productive, sustainable and inclusive future. Australian enterprises have the capacity to develop and use the skills of their workforce to maximum advantage for industry and community benefit.** **Actions areas:** • meeting Australia's future skills and workforce demands. • raising workforce participation. • improving adult language, literacy and numeracy skills. • better using skills to increase productivity. • enhancing the capability of the tertiary education sector. • creating a shared agenda on workforce futures.

[11] UK & Germany (Europa website 2010), United States (United States Department of Labor 2010), Singapore (Singapore Economic Strategies Committee website 2010), Australia (Skills Australia website 2010)

Articulated strongly, especially in Europe, is the drive to have all working age people skilled and into employment. This has long been a practice in Singapore, in the absence of the unemployment benefit scheme. Target groups include migrants, the unemployed, women at home, the over 50s and those marginalised by long-term unemployment. Lifelong learning—a concept that has been around for many years—has now become embedded into labour market policy as a safeguard against high unemployment in a knowledge-based economy (UK Department for Business Innovation & Skills 2009).

The UK has introduced the Education and Skills Bill to give employees the legal right to access basic and intermediate skill and qualification training. This encourages the employer to allocate time for this provision on the proviso that it will have a positive effect on productivity. The UK Foundation Degree aims to integrate workplace-based training with a flexible delivery of academic study, and involves employers and academics coming together to deliver skills and knowledge that can be used to raise workplace productivity. Nevertheless, there continue to be high numbers of skilled individuals not currently using the skills that they were trained in. For example, around 500 000 women in the UK are qualified in science, engineering and technology, but fewer than 150 000 work in these sectors (UK Department for Business Innovation & Skills 2009).

We see similar movement in Germany with the passing of the employment promotion law which supports an individual's rights to adult schooling to obtain a secondary modern school qualification. Germany is investing EUR 6 billion for the period of 2008–2012 to strengthen educational opportunities (German Federal Ministry of Economic and Technology 2006). In America, tax credits are given to make college more affordable and free online training courses for further learning are available through community colleges (United States Office of Management and Budget 2009). Singapore is looking to introduce an incentive scheme to encourage employers to support workers to participate in training and give financial assistance to the worker for partaking in training and on completion of a qualification (Singapore Economic Strategies Committee 2010).

National and State and Territory priorities for skills development in Australia

The Commonwealth Government is the custodian of national efforts for workforce development. It is also responsible for progressing the 'Skilling Australia for the Future' initiative and the 'Workforce Development Strategy'. It has collaborated with Skills Australia to build a national skills profile. It also works with the State and Territories, under an intergovernmental agreement, to drive a nationally consistent training agenda and implement an additional 1.15 million vocational education training courses by 2013 (Council of Australian Governments website 2010).The National Agreement for Skills and Workforce Development outlines the targets, but the method of delivery is at the discretion of the jurisdiction. This is meant to enable States and Territories to align national targets to their particular community needs.

In Australia, each jurisdiction works towards a strategic agenda of which labour reform plays a significant role. Economic, demographic, environmental and social stability are concerns that reflect across the board. On further exploration, skills development is reflected in the strategic agendas of a range of governmental departments and they collectively work towards the same agenda. In South Australia, for example, skill priorities are within the portfolios of departments that are responsible for further education, economic development and social inclusion. These are all underpinned by the SA Strategic Plan.

All States and Territories have articulated the importance of working towards the national priorities, stressing their regional position on issues of skill shortages, demographic change and

future economic conditions. All have recognised the need to adapt to changing circumstances in order to remain prosperous. Table 4 lists the priority actions developed by each State and Territory; particular community needs are determined by demographic impact, geographical dispersion of the population, and the economic conditions.

Table 4: Australian State and Territory skill strategies—strategic objective[12]

Tasmania: • Tasmanians have the skills to participate in a clever and connected community; • together Tasmanians will overcome individual disadvantage and exclusion to increase participation; • providers will partner with industry to deliver skills through high quality services; • employers will build workforce skills to innovate, invest and increase productivity.	**Victoria:** • increasing the number of people undertaking training in the areas and at the levels where skills are needed for Victoria's economic and social development; • developing a training system that engages more effectively with individuals and businesses and is easier to navigate; • ensuring our skills system is responsive to the changing needs of Victoria's industry and workforce; • creating a culture of lifelong skills development.
Queensland: • developing the skills of existing workers and apprentices; • engaging unemployed and under-employed people; • improving youth transitions to enhance education, training and employment outcomes; • building the capacity of the Queensland VET sector. • building bridges to the professions.	**Western Australia:** • a skilled workforce; • a contemporary apprenticeship and traineeship system; • individual participation in training; • support for regional communities; • a vibrant and diverse training market; • training system capability and capacity.
Australian Capital Territory: • addressing the need for people and workforce in light of the demographic challenge; • increasing the productivity of those already in the workforce; • lifting the participation of people currently outside or on the fringes of the workforce; • ensuring the education and training needs of today and tomorrow's workforce are met.	**Northern Territory:** • growing the workforce; • skilling the workforce; • supporting the workforce; • coordinating the workforce; • strengthening regional workforce.

[12] Skills Tasmania 2010, Skills—Creating our future Tasmanian Skills Strategy 2008–2015;Victorian Government 2008, *Securing Jobs for Your Future—Skills for Victoria;* Queensland Government 2008, *Queensland Skills Plan; WA* Department of Education and Training 2009, *Training WA Planning for the future 2009–2018;* Chief Minister's Department 2008, *ACT Skills Future Key Initiatives in a Long Term Strategy to Address the Skills Challenges;* Northern Territory Government Department of Business and Employment 2009, *Northern Territory Employment Strategy 2009–2012 Discussion starter;* NSW Department of Education and Training 2008, *Delivering Skills for NSW Strategic Pan for Vocational Education and Training 2008–2010,* Training & Skills Commission 2009, *Skills for Jobs Priorities for Developing South Australia's Workforce.*

New South Wales: • increasing workforce participation; • building skills to support economic development; • increasing skill utilisation.	**South Australia:** • raising the skill levels of South Australians; • increasing the number of South Australians with post school qualifications; • increasing employment participation.

International approaches to skills mismatch and skills utilisation

It is generally recognised by governments at home and abroad that equipping the workforce with skills is not enough to enhance productivity in the short or long term. What is also required is good leadership and management and the formal incorporation of aims for workforce planning in the business plans of companies (Government of South Australia Economic Development Board 2008). It is also important to ensure that there is an adequate matching of skills of individuals to those required for the job and for the labour market.

In Europe, as elsewhere, there are imbalances in skills possessed, skills applied and skills required. A study using European Community household panel data (Wasmer et al. 2007, cited in CEDEFOP 2009) found that around 20% of workers were in jobs for which they had the necessary training or qualifications. This means that almost 80% of employees in Europe were in jobs for which they were not qualified or had the necessary training or skills. A higher proportion of the workforce is more likely to be in jobs for which they are not qualified or trained in those countries with stricter employment protection legislation and regulations. The study also found that workers not employed in their area of expertise earn about 11% less than those who are working in their area of expertise. Skills mismatch can be a function of skills shortage, which at the firm level has been found to increase wages and recruitment costs, lower company competitiveness, and result in greater workloads for other workers (Strietska-Ilina 2008). It can also occur when new recruits need training to do their jobs, or when workers are over- or under-qualified for jobs, lack the necessary skills, or have qualifications which the job doesn't require. This means that skill mismatch is as much about the job itself as it is about the worker who does the job. Although in practice people generally know what is meant by concepts like skills utilisation and skills mismatch, they can be difficult to measure on a practical level. There is a continuing need to develop straightforward definitions and measurement approaches which are valid and reliable (CEDEFOP 2009).

- Scotland is currently progressing work in skills utilisation in the workplace, and has established a skills utilisation leadership group and formally identified what the concept of skills utilisation is about. The government has funded a research review and a case study including six key industry sectors. Companies involved in the study tended to have a culture which supported an open-door policy and a high degree of openness between different levels of staff. There was equity in human resource practice that included performance management and training, and rewards such as flexitime and opportunity for job rotation. Key findings highlighted that although managers did not easily recognise the term 'skills utilisation', they understood that skills needed to be used to the best advantage in practice and this required commitment from the top. The research also concluded that skills utilisation involved a suite of work practices that were seen to contribute to productivity gains. Such practices were to be introduced on a gradual basis with the full involvement of employees. The findings of this research point to three key principles for effective skills utilisation. These are about developing confident, motivated and relevantly skilled individuals who are aware of the skills they possess and know how

to best use them in the workplace; creating workplaces that provide meaningful and appropriate encouragement, opportunity and support for employees to use their skills effectively, in order to increase performance and productivity; and improving job satisfaction and employee well-being (SQW Consulting 2010).

- The trade union movement in the UK is reaching out to the low skilled and the older workforce to encourage them to up-skill and remain employable in an economy which is increasingly becoming knowledge-based (UK Department for Business Innovation & Skills 2009).
- Like other members of the EU, Germany is committed to the Bologna Process which aims to create a uniform European university sector with a compatible qualification throughout Europe (using a uniform points system under the European Credit Transfer and Accumulation System). It is in the process of progressing this move to facilitate the growing number of migrant workers attracted to Germany because of its central European location and the availability of jobs. Migrants possessing advanced technical qualifications are thus able to take advantage of recognised prior learning (RPL) assessment to fast-track them into employment. In Germany we also see a lifting of the retirement age to 67. The UK, Germany, America and Australia have a strong regional engagement to connect local business with local skills (Die Bundesregierung website 2010).
- Singapore is also dependant on foreign workers for raising economic growth. It is keen to maintain a suitable balance between investing in foreign workers as opposed to skilling the local workforce. The Economic Strategies Committee has proposed a safety mechanism to protect domestic workers by financially penalising those companies that hire foreign workers beyond the allowed threshold (Singapore Economic Strategies Committee 2010).
- In the US, levies are also charged to organisations that hire workers from overseas. These monies raised are then channelled back into workforce training in the associated skills shortage area (United States Department of Labor 2010).

Skills mismatch and skills utilisation in Australia

Concepts of skills utilisation have been adopted in different ways by Australian States and Territories, but the objectives have similar aspirations. These are generally to ensure that individuals and communities have the skills required for economic prosperity, and that there is a focus on innovation and workforce development to drive the economic prosperity of the jurisdiction.

Skills mismatch is also a concern of Australian governments. This is because skills mismatches may reduce productivity, quality of work, and job satisfaction for workers which, in turn, may lead to higher job turnover for companies. A solution to this may be to reallocate workers whose skills are under-utilised to jobs which require their skills. Skills mismatch is particularly important for countries with ageing populations who wish to reassign older workers to jobs that require their skills. A recent study has looked at this question by investigating the relationship between literacy and numeracy skills and their use in the workplace (Ryan & Sinning 2009). It has found that, for all age groups (including older workers), the higher a worker's levels of literacy and numeracy the more likely they are to be in jobs which require these skills. It has also found that older workers apply their skills at work more frequently than younger workers, and that there are relatively high quality job opportunities available to them.

A study of the effects of job mismatch on labour market outcomes (Mavromaras, McGuinness, & Fok 2009) has found that men suffer significant pay penalties for being over-skilled and over-educated, while women experience lower penalties on both counts. While being over-educated did not lead to lower rates of job satisfaction, being over-skilled for a particular job, or being over-educated and over-skilled, did so. Over-skilled and over-educated men and women are also more likely to move or lose jobs. The researchers concluded that it was over-skilling that tended to lead to wage penalties rather than over-education.

This review of the skills development and skills utilisation strategies of different countries– including Australia—has highlighted similar aspirations. They all have the same aim: to be a significant global economic player in a knowledge-based economy; they all have the same principal driver: increased productivity; and they all have the same objective: to prepare industry and the workforce to embrace future change. Although the strategic approaches are similar, their starting points will determine the intensity of the reforms. Countries that have historically invested in a skilled workforce tend to concentrate efforts on advancing higher-level skills, whereas those countries that have not made that investment are having to spend time developing a skills culture with both employees and employers.

2 SKILLS UTILISATION SURVEY RESULTS

Key Findings

- 95% of companies keep track of the skills of their workforce; 43% use a skills register, 35% keep formal records and 17% have an informal understanding of the skills of their staff. The larger the firm the more likely that some form of tangible record is held; 92% of large firms have formal mechanisms in place compared to 85% of medium firms and 63% of small firms.
- Around one in five companies have formal skills utilisation measurements in place, a further 35% use informal measurements of skills use and a quarter measure skills use in some areas of their operation. Only one in five companies do not make any attempt to measure skills utilisation levels.
- Large firms are more likely to formally measure levels of skills utilisation (26%) than medium (20%) or small firms (11%), which is consistent with the higher likelihood of large firms having formal human resources plans and formal workforce skills tracking arrangements in place.
- Higher level occupational groups have higher levels of skills utilisation: 91% of the skills of managers are mostly or fully utilised; 87% of the skills of clerical and administrative staff are mostly or fully utilised; 84% of the skills of professional staff are mostly or fully utilised; 82% of the skills of tradespeople and technicians are mostly or fully utilised; 70.5% of the skills of labourers and process workers are mostly or fully utilised and finally 65.5% of the skills of apprentices and trainees are mostly or fully utilised.
- The occupational pattern of skills utilisation largely holds across company size.
- The construction sector reports the highest levels of skills utilisation, followed closely by manufacturing with the services sector falling some way behind.
- Companies were asked to nominate which human resources management approaches they used. Over 50% of companies provide feedback for managers and clerical and administrative staff, utilise upskilling options and review training needs. Over 40% of companies offer multiple jobs, flexible working arrangements and provide feedback for professionals.

Introduction

In late 2009 Ai Group undertook a survey which focussed on two issues of strong interest to companies: workplace literacy and numeracy and skills utilisation levels. (The report on the literacy and numeracy findings of the report can be accessed through the Ai Group website www.aigroup.com.au.)This chapter considers the findings of the survey related to skills utilisation.

2.1 Research details: respondents by sector and company size

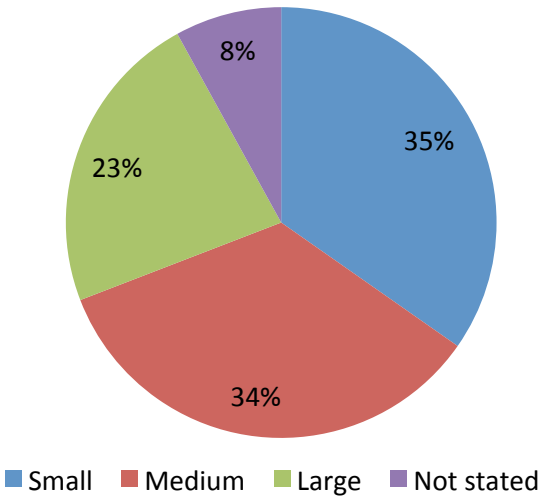
Companies were asked to locate themselves by industry sector, current value of turnover and total number of full-time employees in 2009/10. Survey responses indicate a varied range of sectors and companies. Data was collected from sub-sectors across the manufacturing, services and construction industries and was aggregated into three individual categories.

2.1.1 Companies by size

The survey generated responses from 338 companies with total employment of 56,000 employees and total annual turnover of $36.4 billion across a number of sectors and firm size.

- The largest number of responses was from small-sized enterprises of up to 25 employees, representing 35% of all respondents;
- Medium-sized firms of 26 to 100 employees accounted for 34% of respondents, while large sized firms (more than 100 employees) contributed 23%; and
- 8% of respondents did not indicate the number of people employed.

Chart 1: Survey respondents by size

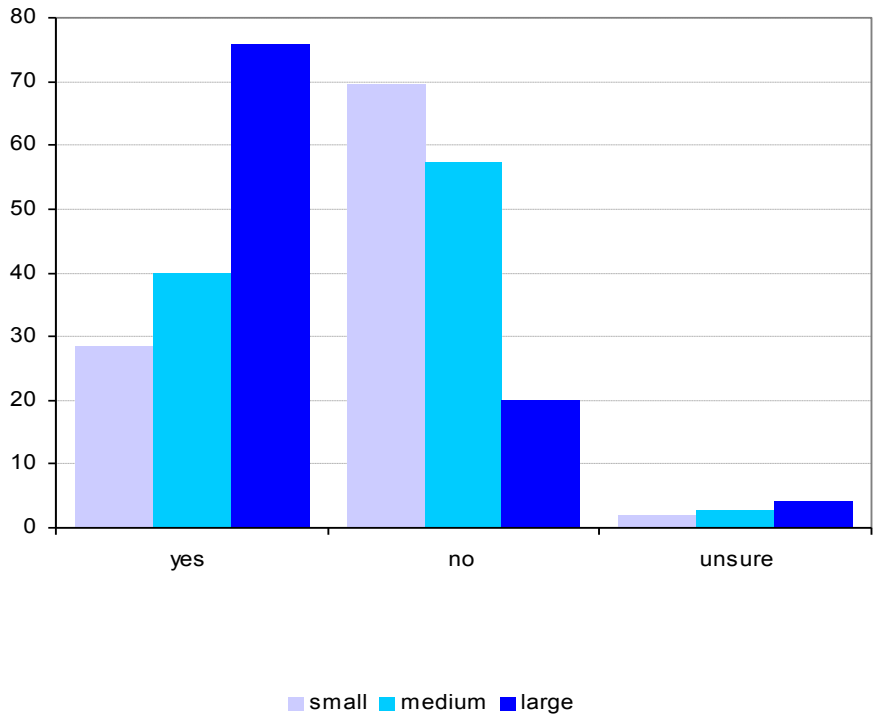


2.2 Survey Findings

2.2.1 Human resources planning

Just under half of the companies surveyed (46%) had a formal human resources plan in place. The larger the company the more likely that there will be a formal human resources plan; 76% of large companies, 40% of medium companies and 28% of small companies have these plans.

Chart 2: Human Resources plan in place by company size



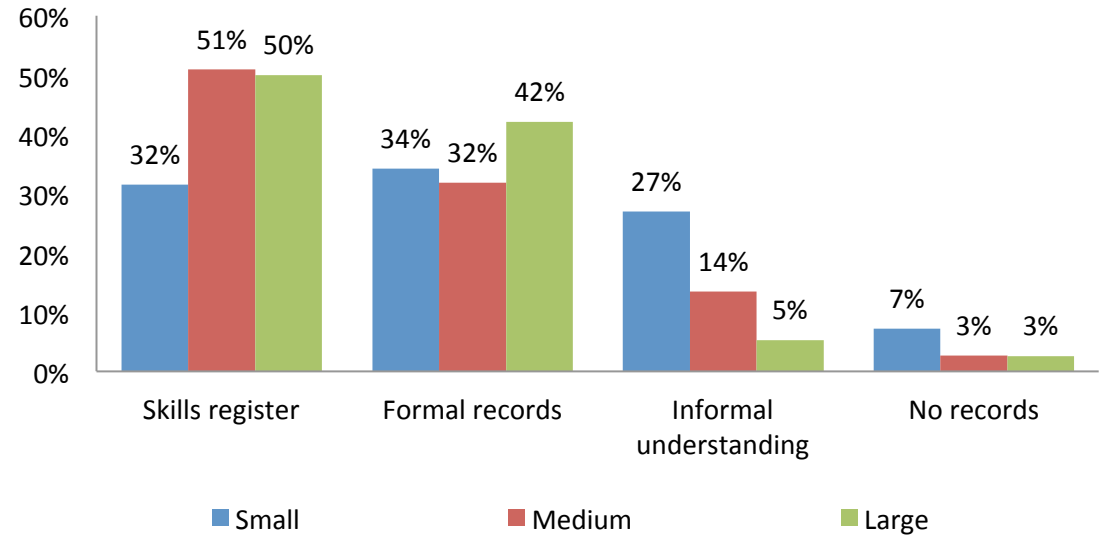
The industry in which the organisation is engaged is significant with service organisations having a higher level of human resources planning (58%) than either manufacturing firms (39%) or construction firms (40%).

2.2.2 Methods used to track workforce skills

95% of companies keep track of the skills of their workforce; 43% use a skills register, 35% keep formal records and 17% have an informal understanding of the skills of their staff. The larger the firm the more likely that some form of tangible record is held; 92% of large firms have formal mechanisms in place compared to 85% of medium firms and 63% of small firms. Medium and large firms are more likely to use a skills register than small firms (51% and 50% respectively compared to 31.5%) and large firms are more likely to rely on formal records than small and medium firms (42% compared to 34% and 32% respectively). Almost as many small firms rely on having an informal understanding of their skills of their workforce as utilise skills registers and formal records (27%, 31.5% and 34%).

There is little difference between industries; 83% of construction companies, 79% of services companies and 77% of manufacturing companies formally keep track of their employees' skills.

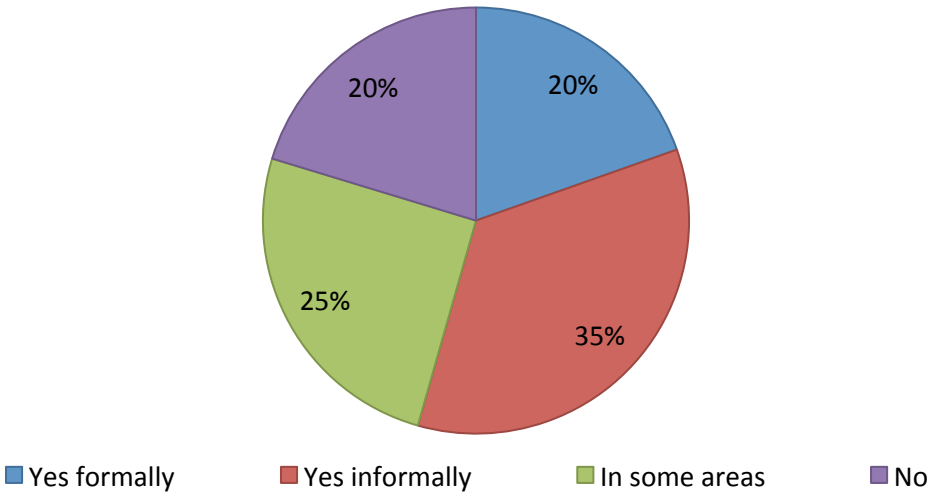
Chart 3: Methods used to track workforce skills by company size



2.2.3 Measuring workforce skills utilisation

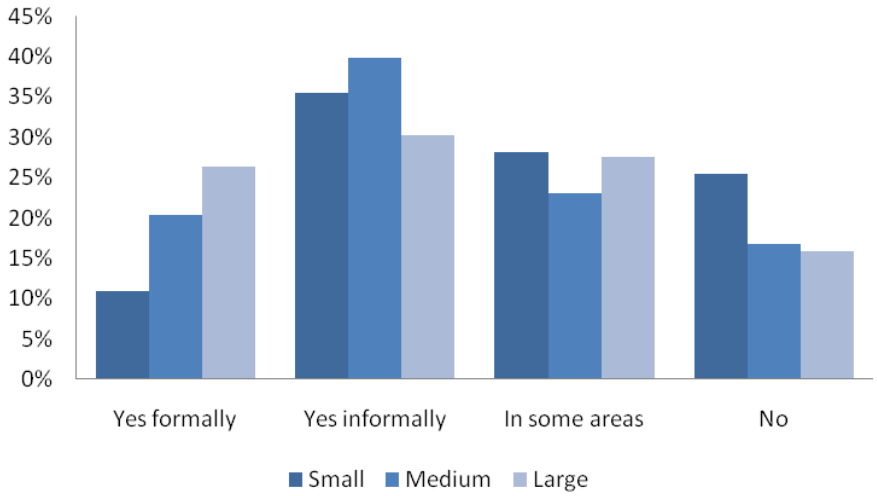
Companies were asked if they measured the extent of skills utilisation in their workforce. Around one in five companies have formal measurements in place, a further 35% use informal measurements of skills use and a quarter measure skills use in some areas of their operation. Only one in five companies do not make any attempt to measure skills utilisation levels.

Chart 4: Extent of company skills utilisation measurement



Large firms are more likely to formally measure levels of skills utilisation (26%) than medium (20%) or small firms (11%), which is consistent with the higher likelihood of large firms having formal human resources plans and formal workforce skills tracking arrangements in place as seen earlier.

Chart 5: Extent of company skills utilisation measurement by company size

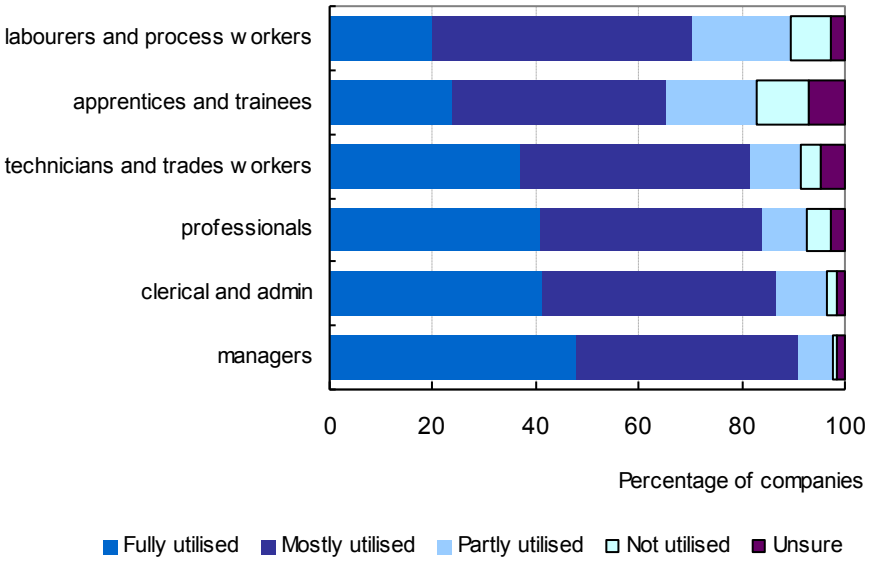


2.2.4 Workforce skills utilisation levels

Companies were asked to indicate the extent to which the skills of their workforce are utilised across occupational groups. The responses indicate that higher level occupational groups have higher levels of skills utilisation: 91% of the skills of managers are mostly or fully utilised; 87% of the skills of clerical and administrative staff are mostly or fully utilised; 84% of the skills of professional staff are mostly or fully utilised; 82% of the skills of tradespeople and technicians are mostly or fully utilised; 70.5% of the skills of labourers and process workers are mostly or fully utilised and finally 65% of the skills of apprentices and trainees are mostly or fully utilised.

It is interesting to note that across professionals, clerical and administrative staff and technicians and trade workers there are very similar levels of skills utilisation and conversely of skills underutilisation; for these groups skills were not utilised or only partly utilised for 11% of clerical and administrative staff, 13% of professional staff and 13.5% of technicians and trades workers. Over a quarter of the skills of apprentices and trainees (27.5%) and labourers and process workers (27%) are not being even mostly utilised.

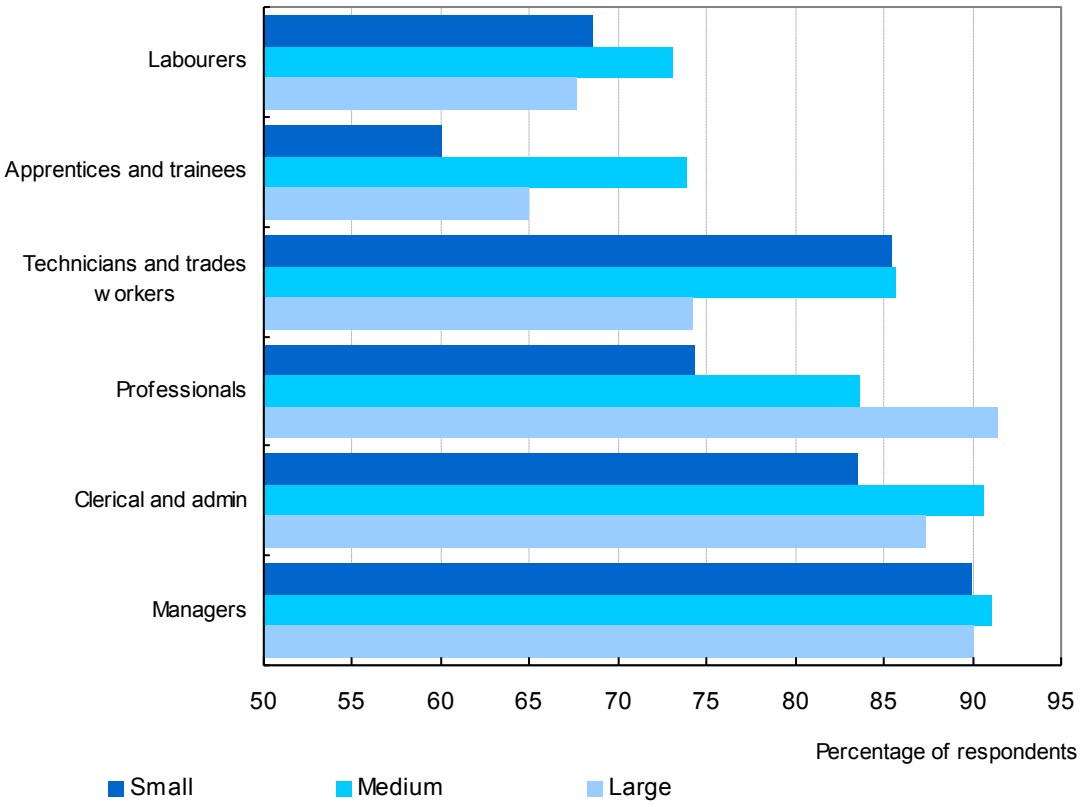
Chart 6: Extent of skills utilisation by occupation



The occupational pattern of skills utilisation largely holds across company size with higher level occupations showing higher levels of skills utilisation than lower skilled occupations with two exceptions; professional skills are less well utilised in small companies – 74% compared to the all company result of 84% and technicians and trade workers are less well utilised in large companies at 74% compared to the all company result of 82%.

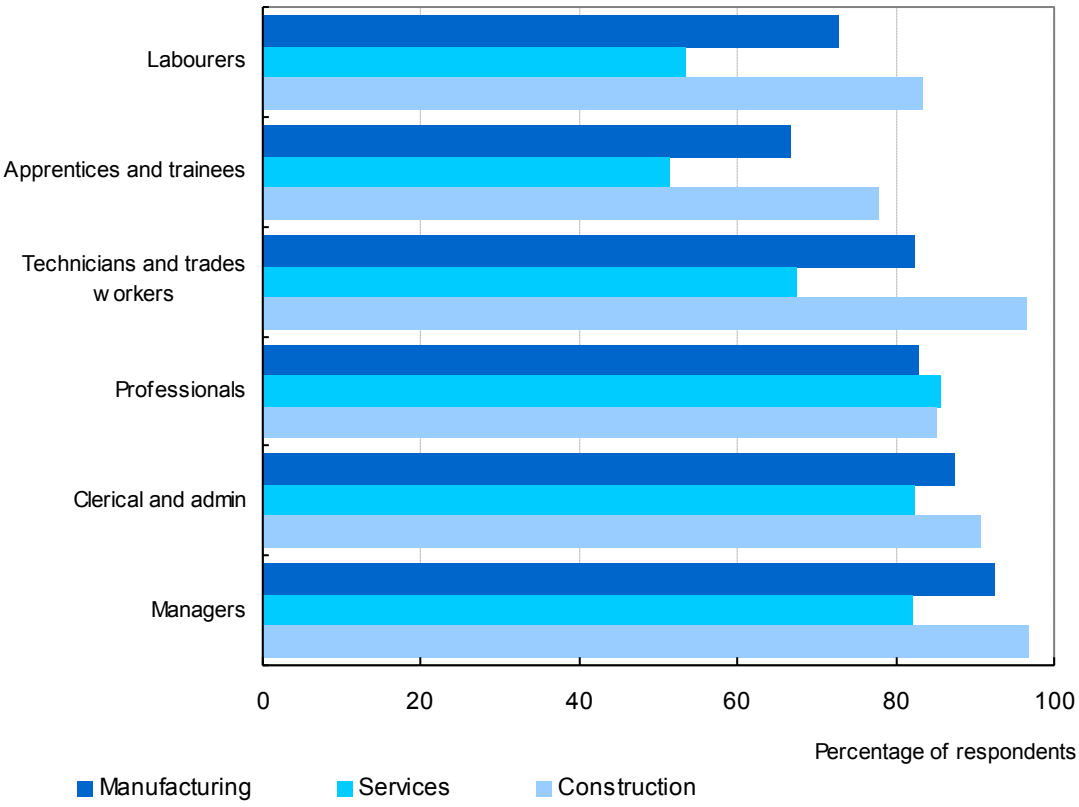
Looking at skill utilisation levels by company size, medium sized companies report slightly higher skills utilisation levels across the occupational groups than large companies and small companies. The highest levels of variance seen between companies is in their use of the skills of lower skilled workers – apprentices and trainees and labourers and process workers – with small companies reporting significantly lower levels of skills use than medium and large firms.

Chart 7: Extent of skills utilisation by company size



The construction sector reported the highest levels of skills utilisation, followed closely by manufacturing with the services sector falling some way behind. For example in management skills construction sector usage is at 97%, manufacturing 92.5% and services sector 82%. For the technicians and trades workers category in construction skills usage is 96.5%, in manufacturing 82% while in services it is only 67.5%. For apprentices and trainees, in construction skills usage is 83%, in manufacturing 73% and in the services sector 53.5%.

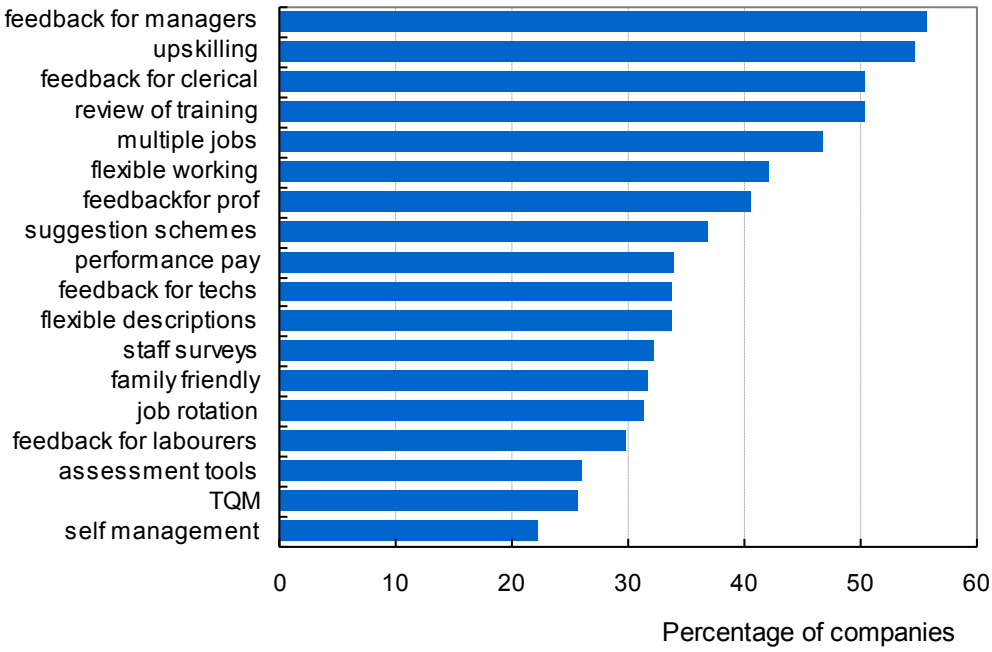
Chart 8: Extent of skills utilisation by industry



2.2.5 Human resources management approaches used

Finally, companies were asked to nominate from a list which human resources management approaches they used. Over 50% of companies provide feedback for managers and clerical and administrative staff, utilise upskilling options and review training needs. Over 40% of companies offer multiple job roles, flexible working arrangements and provide feedback for professionals. Over 30% of companies provide suggestion schemes, performance pay, feedback for technicians and trades workers, flexible job descriptions, staff surveys, family friendly policies and job rotation.

Chart 9: Human resources management approaches used



Over the 18 measures listed, large companies report higher levels of use in all but two measures – suggestion schemes and job rotation. For the other measures large companies have significantly higher levels of use than medium and small companies. For example, family friendly policies are in place in 40% of large companies, 32% of medium companies and 31% of small companies. Flexible working arrangements are available in 52% of large companies, 41% of medium companies and 38.5% of small companies. As a final example, feedback for technicians is provided in 44% of large companies, 40.5% of medium firms and 23% of small companies.

There are wide variations across industry sectors of the extent of the use of human resources management practices though there is considerable overlap on the most popular measures across the sectors. The five most popular in the services sector are feedback for managers and clerical staff, upskilling, review of training needs and feedback for professionals. The top five for the construction sector are review of training needs, upskilling, flexible working arrangements, feedback for managers and feedback for clerical staff. The top five for the manufacturing sector are upskilling, feedback for managers, multiple jobs, review of training needs and feedback for clerical staff. The measure with one of the widest variations of usage is family friendly policies; 49% of services companies have these policies in place compared to 22% of construction companies and 27.5% of manufacturing companies. Another measure applied with considerable variation across the industry sectors is job rotation; 37% of manufacturing companies, 33% of construction companies, but only 17.5% of services companies offer job rotation options to their staff.

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