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From 'skill shortages' to decent work

The role of better skill ecosystems

NEW SOUTH WALES
DEPARTMENT
OF EDUCATION
AND TRAINING

BVET

Status of this paper and acknowledgments

This paper has been prepared to prompt discussion of how to improve work and skills in Australia. It has benefited from workshops and discussions with key skill researchers including David Finegold, Ewart Keep, Geof Hawke and Tom Dumbrell, officials from the NSW, Queensland and Australian Government departments of education and/or training, and TAFE planners in NSW and Victoria.

Industry skills advisory bodies involved with community services and mining in Queensland, and representative organisations such as Group Training Australia, were also involved. A full list of organisations and individuals who have assisted in the production of this paper is provided in Attachment 1.

The NSW Department of Education and Training's Deputy Director-General (Strategic Planning and Regulation), Leslie Loble, inspired the paper and has provided very useful comments at various stages in its production. Noela Eddington of Queensland DET, an expert on that State's Skills Formation Strategies, has provided very useful briefings and comments. Caroline Alcorso, Program Coordinator of the Skill Ecosystem National Project in NSW DET, has been especially important in the production of this paper. She has been a constant source of advice and adebating partner. Several of the recommended features of the proposed new skill ecosystem program were initially drafted by her. Her understanding as a contract manager for this project is especially appreciated. Jeremy Gilling, who is also involved in the Skill Ecosystem National Project, has provided useful editing, comments and support.

A presentation which summarises the key elements of this paper is also available. Those who are interested in the subject matter but short of time may wish to consult it.

Comments are welcome and should be sent to J.Buchanan@econ.usyd.edu.au.

John Buchanan
June 2006

Foreword

The NSW Board of Vocational Education and Training (BVET) in 2000 undertook a major research project on the changing nature of work. The project examined the way in which work and skills are linked, how this linkage is likely to change, and the options for policymakers to shape the linkage between work and skills in the future. It produced several individual reports and a composite report, *Beyond flexibility: Skills and work in the future,* released in October 2001.

Beyond flexibility has had a considerable influence on VET policymakers, researchers and practitioners across Australia, and has reframed the debate on skills formation, encouraging a far more comprehensive approach to policy and practice in this area.

In Australia, the Skill Ecosystem National Project (funded by the Australian Government Department of Education, Science and Training and managed by the NSW Department of Education and Training) and the Queensland Skills Formation Strategies are two substantial initiatives that have adopted the *Beyond flexibility* framework to look outside narrow supply-side solutions to skills challenges. In NSW, BVET has funded innovation projects to trial new approaches. Similarly, the 2003 Report of the South Australia Ministerial Inquiry, *Skills for the Future,* recommended 'workforce development' – defined as 'those activities which increase the capacity of individuals to participate effectively in the workforce throughout their whole working life and which increase the capacity of firms to adopt high-performance work practices that support their employees to develop the full range of their potential skills and value' – as the overarching concept for developing a high performance workforce in that State by 2010.

BVET decided in 2005 that it was time to take stock of the changes in policy and practice, as well as more recent research outcomes, in the four years following the release of *Beyond flexibility,* and particularly at the implications of these developments for skills policy. This report by John Buchanan, *From 'skill shortages' to decent work: The role of better skill ecosystems,* provides this reassessment.

His thought-provoking report begins by analysing new approaches to skills challenges, here and overseas. He examines the three underlying concepts – of labour productivity, decent work, and coordination failures – that provide the key to 'making sense of current and emerging challenges concerning skills'. Finally, he outlines the shape of a new program that would, he argues, achieve the 'better links between workforce and business development' that are necessary if we are to depart from our 'current trajectory of both wasted skills and the sweating of skills [to] a future based on sustainable work, with time for renewal and upgrading of skill at work and beyond'.

BVET will be examining the report and its implications, in consultation with key stakeholders within the VET system and in industry. We anticipate that this report, like its antecedent, *Beyond flexibility,* will have a significant influence on the direction of skills policy in NSW and across Australia.

Bert Evans

Chair, NSW Board of Vocational Education and Training, June 2006

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Abbreviations

ACCI	Australian Chamber of Commerce and Industry
Ai Group	Australian Industry Group
ANTA	Australian National Training Authority
ASCH	Annual student contact hours
CRI	Collaborative Regional Initiatives
DEST	Australian Government Department of Education, Science and Training
DET	NSW Department of Education and Training
RTO	Registered Training Organisation
RWDC	Regional Workforce Development Collaborative (California)
SME	Small to medium-sized enterprise
TAFE	Technical and further education
VET	Vocational education and training

Executive summary and recommendations

Skills policy in Australia is at an impasse. Despite unprecedented employer control over the VET system, skills problems – shortages, recruitment and retention issues – persist, and may be worsening. This paper argues that these problems can only be overcome if workforce development is better linked with business/organisational development. This is essential for continued productivity growth and more decent work.

In order to understand the problems, we need first to examine three terms and concepts: labour productivity, decent work, and coordination failure.

There are two dimensions to labour productivity: first, the person's underlying capacity to perform, which is largely determined by their education and training; and second, the application of that capacity on the job. Their capacity can be enhanced by upgrading their capabilities (mainly through training); its enhanced application is a deployment issue that requires attention to other aspects of work.

Surveys consistently reveal that people place a high value on the quality of their work – who they share it with, and how satisfying they find it. If a job cannot readily be made satisfying, it is important that the pay and conditions at least enable people to flourish outside of work. Decent jobs embody at least one, and ideally both, of these aspects.

Inadequate levels of training and the dearth of decent jobs were once seen as a failure of the market – its tendency to fail, without government intervention, to develop adequate numbers of skilled workers and desirable standards for all concerning wages, hours and forms of employment. But governments can fail in this respect just as badly – a failure of coordination. Economic and industry restructuring, and globalisation, pose huge challenges to governments committed to ensuring better workplace outcomes, including the development and deployment of labour. The skills problems we currently face reflect this coordination failure as well as market failure.

The debate about skills and work has become polarised between advocates for maintaining tightly defined occupations and those who promote a competency approach. But in practice workers and employers seem increasingly to define work on the basis of vocational streams – for example, logistics, customer service, and information technology. Skills policy needs to give greater attention to defining and organising around the notion of vocational streams, or 'job families' – to balance the pride that attaches to occupational identity with the increased accessibility of a vocational stream.

A major barrier to pursuing a successful skills policy is a culture in which 'employers whinge and governments react'. Current administrative and funding arrangements are equally important. They encourage an almost exclusive focus on processing students and meeting new apprentice targets.

Recent studies of work and skills in the future provide leads on how these problems can be addressed. They highlight the importance of engaging with skill ecosystems: clusters of high, intermediate and low levels of competence in particular regions or industries which are shaped by interlocking networks of firms, markets and institutions. The Australian skill ecosystem pilots, other industry-based pilots and US regional workforce development programs provide practical lessons on how this can be done.

Any new approach must build better businesses and organisations by building better skill ecosystems. A new 'skill ecosystem program' should have the following characteristics:

- Provide substance to Key Performance Measure 3 of *Shaping Our Future, The National Strategic Plan for VET* (building community and enterprise capability and capacity).
- Fund initiatives that will promote skill ecosystems that nurture decent work. The form these initiatives take will vary from ecosystem to ecosystem – but all will be 'collaborative, regional, data intensive and career oriented in nature'.
- Six areas (skill sets) of critical need should be identified for immediate funding. Priority should be given to multi-employer consortiums (not just employer associations) that can draw on broader social networks at the local level.

- Establish a support and management structure that
  - is based on a guiding coalition of the Australian Government and State governments, employer and union representation, and TAFE and other RTOs
  - oversees a new technical assistance support service that provides consultancy, and helps to build new networks that better link business and workforce development
  - is administered by a small secretariat, half of whom are from the education/skill system.
- Funding arrangements
  - public VET funds should not 'buy projects' but, by leveraging off established funds, establish sustainable and desirable skill ecosystems
  - only those intermediaries which both attract active (and preferably joint) employer contributions and also draw in the expertise of technical educators and others should receive public funding
  - in the short term, three per cent (and in the longer term up to 10 per cent) of current public VET funds should go to a skill ecosystem program
  - the systematic collection of qualitative information should also be used to assess the performance of new funding arrangements.
- Monitoring and evaluation
  - performance measures should be broadened: for example, data on substantive productivity and employment outcomes (not just basic outputs), change in the per cent of workers using skills held within the locality of the network, change in the balance of skill supply and vacancies within the locality.

1.0 Introduction

Australian skills policy is at an impasse. Over the last fifteen years, peak employer organisations have gained increased control over the formal vocational education and training (VET) system (Hampson 2004). Funds given directly to employers, especially for traineeships, are at an all time high, as unprecedented numbers of publicly subsidised trainees have been recruited.[1*]

Despite these gains, growing numbers of employers complain of skill shortages and deepening recruitment and retention problems (ACCI 2005a, ACCI 2005b, ACCI-Westpac 2005). On the other hand, increasing numbers of workers report that their skills are not used by employers (Livingstone 1999, Considine 2000). One response to current frustrations has been the abolition of the Australian National Training Authority (ANTA). Clearly in Australian skills policy and practice, the old is dying and the new is waiting to be born.

This paper outlines a way out of the current situation. The primary question of interest is:

- What should be the key features of a new Australian approach to linking the development of the workforce to the development of the workplaces in which they work?

This question cannot be answered without considering the changing context and content of work. As such, the paper is also concerned with:

- How can Australia maintain strong labour productivity growth and simultaneously create decent work for all?

The answer to this latter question depends on a wide range of policies. It is well known that the overall level and composition of employment are primarily determined by policies concerning taxation, public expenditure, interest rates, exchange rates and industry development. A poor mix of such policies profoundly limits the effectiveness of skills policy. Devising a new approach to skills policy does not have to await a change in the overall policy mix. Indeed, a new approach to developing and using skills could open up the debate on how best to change current settings. It could also improve labour productivity and job quality. While realising potential gains in full may require a different policy mix, immediate (although more modest) gains are possible even within current policy settings.

The paper is structured as follows. It begins by briefly outlining the motivation for its production. This is to draw out the lessons from the most recent research on, and new approaches to solving, emerging skill problems. Both highlight the need to change the nature of jobs as well as workers' levels of competence to meet skill needs in the future. The analysis begins (section 3) by outlining the key challenges which any modern policy concerned with skill must address. These are nurturing improvements in labour productivity, promoting decent work, and overcoming coordination failures of both markets and governments. Section 4 then summarises how the context and content of work is changing. This section highlights the need to understand the importance of engaging with changing skill ecosystems (clusters of competence shaped by interlocking networks of firms, markets and institutions) and vocational streams/skill sets (job families more coherent than aggregations of units of competence but less tightly defined than traditional structured occupations). Lessons on how this is best done are gleaned from recent pilot projects in Australia and the US which have been explicitly directed at improving the links between workforce and business development.

*Footnotes are at the end of the paper (page 39).

The barriers to shifting skills policy in this new direction are considered in section 5. Section 6 outlines how these barriers can be overcome by establishing a new 'skill ecosystem program'. This section notes the need for realism in rolling out the new program, and especially the need to change current underlying funding arrangements. The paper concludes (section 7) by noting that in the area of skills, we need to move from defining the issues in terms of what 'VET' can do for 'industry'. Instead, we need to focus on how workers can be better developed and deployed through improved work arrangements within and between workplaces. The shift from 'VET' to a concern with workforce development in better skill ecosystems is not so much about getting the workforce more 'developed' – rather, it is about how it is developed.

The key challenge for future analytical and policy research is to identify how best to achieve such a change. In particular, the major priorities are identifying the domains covered by different skill ecosystems, identifying the contours and content of the different vocational streams, improving knowledge management systems concerning changing skill requirements at workplace and multi-employer levels, and identifying new funding models that promote the development and use of skills in decent jobs.

2.0 Motivation

In recent years, problems concerning the recruitment and retention of workers have increased (ACCI 2005a, ACCI 2005b, Ai Group 2004a). During this time, a number of initiatives has emerged which have taken seriously the dictum that 'while skills are not "the answer" to problems of work, there can be "no answer" without skills' (Buchanan et al. 2001: 33). This paper draws out the analytical and policy significance of these developments.

Examples of innovative initiatives come from sectors as diverse as the Victorian dairy industry (Cole 2004a, b and c), the Gold Coast boat-building industry (Queensland Department of Employment and Training 2005) and the NSW public hospital system (Greater Metropolitan Clinical Taskforce 2005). One of the best examples comes from a skill ecosystem pilot project run by the racing industry in rural NSW. This project involved overcoming the chronic 'shortage' of trackwork riders. The solution to this problem did not involve having the VET system produce more Certificate II and III trained riders. Rather, the problem required changing the nature of the job. Traditionally, trackwork riders have operated as contractors on 'piece rates', paid by horse owners or trainers for only part of the day. This pilot enabled the parties involved to create a situation in which the trackwork rider classification is now attached to a worker engaged by the local racing club. This enables the worker to earn a living wage, and gives the club and trainers a reliable source of labour, which in turn attracts more training business for the club.

Two pilot programs now operate to support initiatives such as these. A national level skill ecosystem pilot program has sponsored nine such initiatives. Initially funded by the Australian National Training Authority, this project is now funded by the Australian Government Department of Education, Science and Training and administered by the NSW Department of Education and Training. In Queensland, a Skills Formation Strategies program is funding 23 initiatives. In addition, a range of projects have been initiated by employers and public officials in response to immediate needs of particular industries, such as aged care in Queensland and the workforce involved with those adversely affected by drugs and alcohol.

The initiatives of interest appear to have three core features:

- recruitment and retention problems are not defined as 'skill shortages', but rather treated as problems involving the structure of jobs on offer, often defined as a shortage of decent jobs
- the response involves groups of employers accepting joint responsibility for overcoming the problem
- the crucial factor behind successful innovation is the existence of highly competent brokers or facilitators capable of dealing with issues of business development and not just the development of the workforce.

This paper identifies the analytical and policy setting within which these initiatives are emerging. It also outlines ways in which public policy can be refined to help turn fledgling initiatives into new institutional arrangements which overcome current skill problems in ways beneficial to employers, workers and the community.


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3.0 The challenges

Skills problems persist despite more than fifteen years of reform:

- Reports of 'skill shortages' are widespread (ACCI 2005a, ACCI 2005b, AiG 2004a, DEST 2005, Productivity Commission 2005).
- Despite a huge increase in employment-based training in the form of 'traineeships'[1], nearly all this growth has occurred in occupations where skills are not in short supply – for example, lower level retail work (DEST 2005).
- Employer training expenditure has stagnated, while individuals are spending more time and money on education and training than ever before (ABS 2003, Watson et al. 2003: chapter 10, Dumbrell 2004).
- Poor quality information and information systems continue to impair the efficient operation of our technical education system (Buchanan and Hall 2005).
- The core workforce involved in technical education is ageing at a faster rate than the population as a whole.
- Current policy settings – especially funding arrangements and the push to establish a training market – appear to be part of the problem, not part of the solution (Hall et al. 2002, Schofield and McDonald 2004).

How are we to make sense of this jumbled data and policy situation?

The research we have undertaken into skills and the changing nature of work over the last decade has revealed that three concepts are extremely useful for making sense of current and emerging challenges concerning skill. These are:

- a comprehensive notion of labour productivity
- decent work, and
- coordination failures.

3.1 Labour productivity: developing and deploying workers[2]

Over the last decade, the University of Sydney's Workplace Research Centre (formerly acirrt) has studied changing and future skill requirements in sectors as diverse as dairy farming, engineering, food manufacturing, biotechnology, chemicals and plastics, retail, community services, banking, hospitality, health and information technology.[3] A key finding across all these studies is that the current preoccupation with using every available minute of working time in directly productive activity is driving out the space for the coherent development and orderly transmission of skill in the workplace. People just don't have sufficient time to pass their skills onto others. In making sense of this finding, we have found debates around the notion of labour and productivity very helpful.

Labour productivity is much talked about, but is rarely defined precisely. For most economists and policymakers, it is the relationship between the quantity of a good or service produced for a given quantity of hours worked. Labour is taken to be a self-evident category. It is assumed that the key objective is to use less of it for any given level of output. This reasoning is understandable but limited. In essence, it is merely an axiomatic statement on the relationship between inputs and outputs. Few people would take issue with the objective of producing as efficiently as possible. This approach offers little in the way of guidance as to the determinants of increased efficiency or reduced waste.

Compared to the mainstream policy debate, this paper is based on a more comprehensive understanding of labour productivity. Most importantly, it takes seriously the basic assumption of all schools of economic thought that labour is only one factor of production. Treating labour issues as if they are independent of

the wider economic and social settings in which they are embedded at best limits understanding of the key issues; at worst it results in erroneous understandings.

Just as importantly, this paper takes seriously the proposition that labour is a distinct commodity, or not even a commodity at all. When an organisation hires labour, it obtains the potential that a worker has to perform on the job. It does not buy completed services. This is sometimes referred to as the open-ended nature of the employment contract or the labour process problem; that is, potential labour is not equal to actual performance on the job. It means that there are two dimensions to the productivity of labour. The first concerns people's underlying capacity to perform. This is determined by their levels of education and training. This is gained at school and beyond, as well as on and off the job. The second concerns the application of the worker on the job. Although a worker may be capable of considerable input in production, his or her capabilities may not be fully used by the employer or the worker may not fully apply him or herself on the job. This is what makes labour a distinct commodity, quite different to that of inanimate commodities, such as machinery or computers.

Maintaining and improving labour productivity requires two distinct types of activity. The first concerns constantly upgrading people's capabilities. This is vital to enable people to adapt and make best use of opportunities as they emerge. We refer to this as the challenge of developing labour. Second, it is vital that the capabilities once developed are actually used at work. Workers may be capable of all kinds of performance. How diligently they apply themselves and what elements of their skills and talents are actually used are open questions. This is the challenge of fully deploying labour.

Currently in Australia we are not getting the right balance between the development and deployment of labour. Two problems in particular stand out. While education levels are rising, many people are not using their higher order skills at work (c.f. Livingstone 1999 and Considine 2000 with Watson et al. 2003: chapter 10, and OECD 2001). In this sense, the development of labour is out of synchronisation with the way that it is deployed. On the other hand, the pressures of competition and of maximising shareholder value have resulted in a profound shift in the degree to which labour, once hired, is fully deployed on the job. This leaves little time for releasing people from work to upgrade their skills or any quality quiet time in the workplace for the orderly transmission and rounding out of skills in the workplace. In this sense, current approaches to deploying labour are undermining its development. Both dynamics are behind a variety of widely recognised policy problems, most notably 'skill shortages' and work-life imbalances.

3.2 Decent work: material and subjective elements

Work is not just about productivity; it is also about the quality of life. For many it is the primary, if not the sole, source of income. Success or failure in the labour market has a profound effect on material living standards. In assessing how work is evolving, it is vital to devote particular attention to understanding wages, hours of work and the forms of employment which determine employment conditions.

In addition to its importance for material living standards, work for most people is also about companionship and, ideally, giving them an opportunity to take pride in what they do. Survey after survey over the decades has found that among the most desired features of a job are that it has 'good people to work with' and 'ability to do satisfying and interesting things' (Murphy 1993, Buchanan et al. 2001: 23). Notions of occupational identity consequent upon mastering and applying particular skills are especially important (Standing 1999: 1-7). As Standing notes,

interesting work involves more than having a job that is challenging at a particular point in time. It involves undertaking work that, with the passing of time, leads to a deepening of competence – the ability to undertake increasingly more challenging tasks. In studying how work is evolving, it is important to pay attention to both its material and subjective dimensions. The notion of decent work, especially as developed by people like Standing, encompasses the two. And a concern with decency at work means that even though opportunities for flourishing in paid employment may be limited due to the nature of vacancies on offer, all the more attention needs to be devoted to promoting civilised standards of pay, hours of work and forms of employment to allow people the ability to flourish beyond work (Buchanan et al. 2001: 25-26).

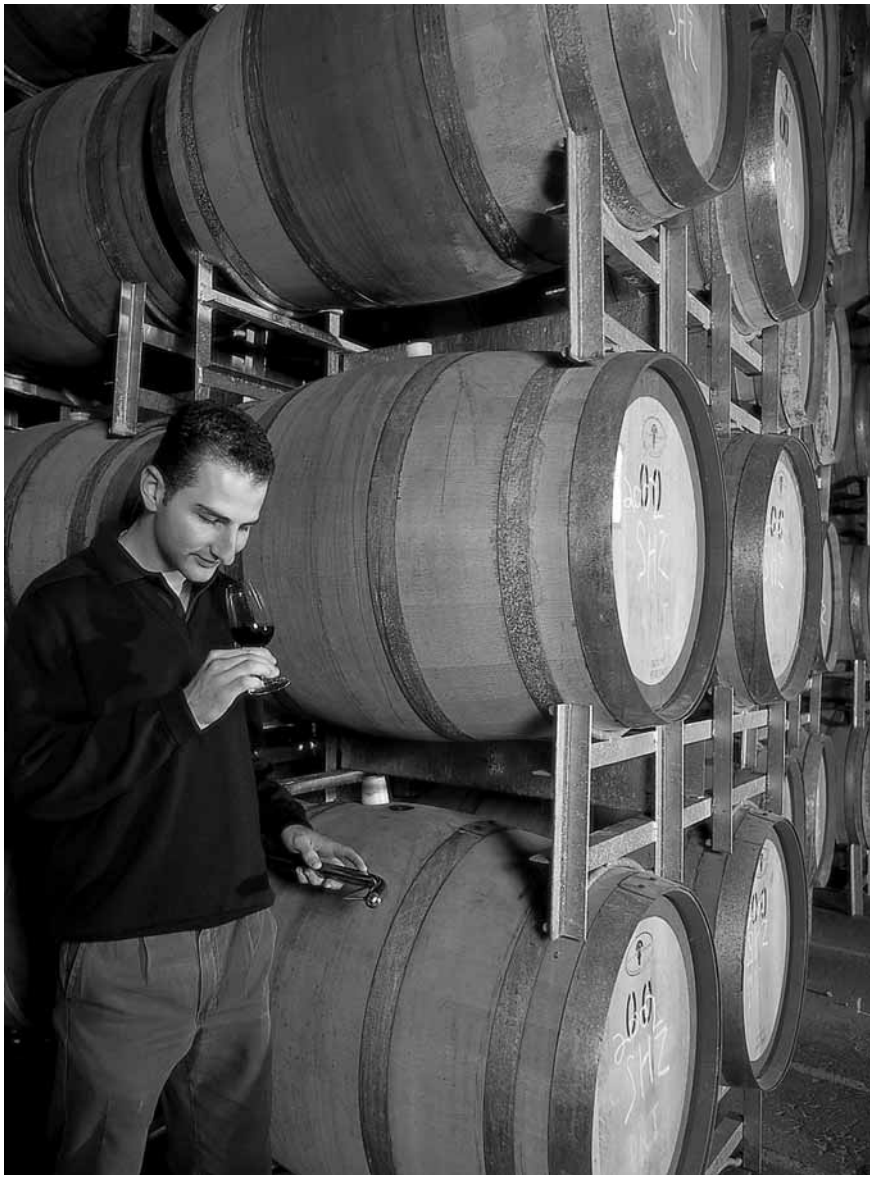
The implications of this research for policy are significant. The key challenge for public policy is not just to create jobs at any price. The quality of jobs created is just as important. Ideally, they should allow people to develop and grow through undertaking tasks which extend them and build higher levels of competence over time. Given that many jobs do not have this character, it is vital that their pay levels and hours of work enable people to flourish beyond work.

3.2 Coordination failures: the limits of market and government action

Problems of labour productivity and decent work arise from many sources. At their most abstract, however, they reflect market failure. It has long been recognised that, in the area of work and education, markets often lead to the under-provision of jobs and skills. The reality of market failure has provided an economic rationale for extensive government involvement in economic development and the education system – especially in the realms of labour market standards and macroeconomic stabilisation. Without such standards, the market has a tendency to generate many low skill, low wage jobs. Without macroeconomic policy interventions, the trade cycle tends to gyrate dramatically between booms and busts. However, after years of government intervention, it is now clear that governments can fail just as badly as markets in providing decent work and skills. The problem is not simply market failure but coordination failure. Ensuring labour market standards remain up to date is a constant challenge, as market-driven restructuring constantly changes occupational, industrial and legal forms of employment. The restructuring and ongoing pressures associated with globalisation pose especially serious challenges for those interested in nurturing new forms of multi-employer coordination to overcome both market and government failures. In Australia, as in the UK, traditionally much multi-employer coordination has been generated as a defensive response to union initiatives and threats (Plowman 1988, Gospel 1992). Increasingly, however, coordination is needed in a positive sense – to increase the realm of choice by generating economies of scale and better risk-sharing by ensuring initiatives are based on the mutual provision of services, as occurs through institutions like group training arrangements (Buchanan and Evesson 2004). However, as Finegold has recently observed, while there is a 'greater need than ever for employer involvement in skill development, [there] is greater difficulty than ever in securing employer involvement' (Finegold 2005). The pressures of competition drive businesses apart, but their possibilities for success are maximised by increased levels of cooperation.

In response to these developments, there has been a growing literature on ways to avoid the limits of both market and state modes of governance. This literature has highlighted the importance of promoting coordinated flexibility (Briggs 2002). In essence, this holds that in devising social arrangements, we should aim to capture the benefits of economies of scale and fairness associated with the consistency in the application of common standards to like situations, and at the same time

maintain the capacity to adapt such standards to local needs (Briggs, Buchanan and Watson, forthcoming). When defined in this way, the key challenge for research and policy is not simply about how to help markets function better or how to design more effective, accountable government interventions. Rather, the challenge is to identify what are the appropriate spheres of coordination – sector, supply chain, region or enterprise group. Equally important is who should be involved in defining and governing them – all relevant employers, unions, community organisations, labour hire and group training organisations as well as governments? These are issues that require a cooperative approach between a variety of stakeholders, including employers, unions and education authorities. Given recent trends in the labour market, institutions such as labour hire companies and group training organisations also have a key role to play in ensuring that the potential gains arising from both coordination and flexibility are achieved in ways that are efficient, fair and sustainable.



4.0 New directions

One of the great strengths of orthodox approaches to public policy is that very clear guidelines are provided by the core concepts underpinning both market and state visions of social organisation.

For example, advocates of free markets 'know' that the critical issue is to specify clear property relations. Once these are clarified, the market can then be left to work its wonders. For advocates of government intervention, the key issue is accountabilities – if these are clearly specified, then precise, desired 'outcomes' are assumed to follow. By contrast, guidelines on how best to capture the benefits of coordinated flexibility do not exist. Ensuring that the benefits of coordination and flexibility are captured requires careful empirical analysis and institutional design. General theories about market operations and government accountability that inform the market, and state-based logics of reform, are resources for such an approach. Unlike these other traditions of reform, the coordinated flexibility approach has few general prescriptions to guide institutional design. Its most powerful stricture is to have a very precise understanding of the object of analytical and/or policy concern.

We are lucky on the topic of skills and the changing nature of work because we have examined these issues in a wide variety of industries. Most significantly, we now also have the experiences of a number of pilot projects devised to test out the issues identified in this research. Analysis of this research and reflections on the experiences of the pilot projects provide simple but powerful leads on where next to take Australian policy and practice concerning skill. In short, the research has highlighted what needs to be more effectively coordinated. The pilot projects offer lessons on how best to overcome coordination failures.

4.1 Skill ecosystems: the changing context of work and skill

The nature of the dysfunctional connections between the development and deployment of labour varies across the labour market. They are best understood as the outcomes of distinct skill ecosystems. Drawing on the work of Finegold (1999) and Keep and Mayhew (1999), a skill ecosystem is defined as

- clusters of high, intermediate and low-level competencies in a particular region or industry, which are shaped by interlocking networks of firms, markets and institutions.

The key aspects to skill ecosystems are:

- the business setting, for example, the type of product market, the competitive strategies pursued, the business organisations and networks, and the financial system
- the institutional and policy frameworks, both VET and non-VET
- the predominant modes of engaging labour, such as labour hire
- the structure of jobs, including job design and work organisation, and
- the level and type of skill formation, such as apprenticeships, and informal on-the-job training (Buchanan et al. 2001: 22, Watson et al. 2003: 159ff).

It is also widely recognised that the technology in use shapes the settings in which skills are developed, deployed and evolve.

All the factors listed above primarily concern the demand side of the labour market. It is important to recognise that developments on the supply side also shape the settings in which skills are developed and deployed. Changing life courses, especially concerning the roles of women and students in the workforce, have profoundly reshaped the options available to both workers and employers in recent years (Schmid 1995, Schmid 2002a, Schmid 2002b). Their effects on industries in the services sector have been especially significant (Buchanan and Hall 2005).

Consequently, while the problem of appropriately balancing the deployment and development of labour is widespread, the form it takes varies enormously. Overcoming it will require an approach

that is sensitive to the needs of particular skill ecosystems. At its most abstract, the 'solution' is better coordination of the forces and resources involved in developing and deploying labour. Identifying how such coordination failures can be overcome will require developing the capacity to understand and respond appropriately to particular clusters of social, political and economic practice.

It is important to recognise that coordination failures threaten the sustainability of many extant skill ecosystems. The clearest example comes from the health and community services sectors. Here the preoccupation with fully utilising labour is profoundly damaging the capability of these sectors to retain and develop experienced professional clinical staff. There is no shortage of people with nursing qualifications, but there is a profound shortage of decent jobs. In this case, the unsustainability of a skill ecosystem does not mean the impending death of a sector. Rather, the skill ecosystem will adjust, much as a rainforest environment eventually adjusts after clear felling has occurred. One ecosystem ultimately evolves into another, even though the rich and vibrant may be displaced by the desolate and barren. In health and community services, we are witnessing a decline in professional level staff and a rise in non-professionals. Access to professional workers has never been evenly distributed. It is becoming even more skewed, especially in sectors like aged care. People living in more prosperous localities will get access to all the registered nurses they need. Those living in less well off areas will have to make do with what they can get (Buchanan et al. 2005).[4] The question of job quality and decent work is important when we consider the future of various skill ecosystems. The policy challenge is not just nurturing and maintaining particular skill ecosystems. Rather, the question is what type of skill ecosystems do we want to promote?

4.2 Vocational streams: changing the content of work

In recent years, debates about skills and the content of work have been polarised. On the one hand, there have been the reformers who have promoted a competency standards approach to defining jobs and skill requirements. On the other hand, there have been those who advocate the need to preserve fairly tightly defined occupations. While both schools of thought have their strengths, their limitations are serious. The competency approach strips out any notion of meaningful clusters of competence. The occupational approach can arbitrarily restrict who has access to particular types of work. The debate about 'generic' or 'employability' skills has merely reworked, not transcended, this binary conception of skill content. A key assumption of much of this debate – especially among employers – is that workers' ability to obtain and apply dismembered competencies will be increased if they have higher order cognitive and behavioural skills (Mounier 2001).

In looking back over the research that we have undertaken since the mid-1990s, it appears to us that, as a matter of practice, workers and employers tend to define types of work on the basis of what could be defined as loose vocational streams. These are clusters of competence which are more coherent than a mere aggregation of particular units of competence, but which are more openly defined than traditional notions of occupation. From projects examining changing skill requirements in agriculture, manufacturing and services, there appear to be tacit or loosely defined vocational streams in the areas of logistics, care work, customer service, engineering, business services and information technology/ processing. While they have not been the prime focus of attention in our research, the key feature of these vocational streams is that they are more latent than manifest in nature.

The notion of 'customer service', for example, is applicable in the retail, hospitality and finance industries, as well as in many of the services provided by public utilities. Within care work, there are common issues of manual handling, ethics of responsibility and judgment that straddle workers providing services to pre-school children, the aged and people with a disability. The existence of such commonalities does not mean that we should, for example, merge training in child, aged and disability services care. However, it does mean we should rethink how skills are defined for such workers. There may be better ways of providing foundation skills for them. Better specification of such foundation skills would provide a clearer basis for identifying how such workers can work more effectively with those at higher levels (such as professionals and paraprofessionals in health and education) on the basis of this better formulated notion of vocational competence. Debate on this matter is already operating at a fairly advanced state in the health sector (Davies 2003, Duckett 2005). It is also closely associated with changing industrial relations arrangements (Buchanan 2005).

If the skills policy of the future is to engage more effectively with reality, greater attention will need to be given to defining and organising around the notion of vocational streams – in short, to identifying different 'job families'. Some efforts are underway to identify 'skill sets in the VET sector' (Precision Consultancy 2005), but these are pitched in a very abstract way and are predicated on the notion of merely aggregating units of competency specified in training packages. The challenge is to identify modern notions of vocation with a sense of quasi-occupational identity and pride, but to define them in ways that are open to all with the required levels of ability. Such a task will require both analysis and diplomacy. Evidence alone will not be able to settle which vocational streams should be recognised and which should not. Matters of valuation and judgment will also be necessary – as they have always been in the evolution of occupational structures.

4.3 Integrating employment and learning better: building new capacity in Australia and California

Engaging with the new realities of skill ecosystems and vocational streams is difficult. Current institutional arrangements concerning skills and technical education reflect the concerns of earlier eras. These were a commitment to trade training and support for those, especially the unemployed, who relied on technical and further education to improve their labour market position. More recently, there has been a preoccupation with 'user choice', 'contestability' and promoting a 'training market'. Underpinning all these elements is a funding model that primarily allocates resources on the basis of producing outputs: annual student contact hours (ASCH) and the number of 'new apprentices' employed.[5] Given the way work and skills are changing, it is unsurprising that such institutional arrangements are associated with growing pockets of skill shortage and growing numbers of workers with wasted skills.

A number of pilot and demonstration programs have been run to promote the development of new institutional capacity better suited to emerging realities. Central to these initiatives has been the objective of devising improved forms of collaboration to overcome coordination failures in the systems of work and skill. The initial insights arising from a number of Australian skill ecosystem pilots are briefly summarised. This is followed by a summary of the key findings arising from a recent evaluation of the Regional Workforce Development Collaboratives (RWDCs) in California.

4.4 Lessons from the skill ecosystem pilot programs

There have been two pilot programs explicitly established to test the skill ecosystem idea. As noted earlier, one is funded by the Australian Government and

is administered by the NSW Department of Education and Training. The other, which is funded by the Queensland Department of Employment and Training, is known as support for 'Skills Formation Strategies.' There have been a range of initiatives in other sectors which also offer important lessons. These include:

- work on overcoming labour shortage and skill retention issues in the Victorian dairy industry – the Dairy Employment for the Future Project (Cole 2004a, 2004c)
- efforts to improve the provision of technical education in the NSW and Victorian manufacturing sector to assist in the renewal of these sectors (Buchanan and Briggs 2004)
- the challenge of upgrading the capacity of the workforce involved in overcoming problems associated with drug and alcohol abuse in NSW – the Drug and Alcohol Workforce Development Project (NSW Drug and Alcohol Development Council 2005).

Most of these initiatives have only been underway for a year or two. None have been comprehensively evaluated. Preliminary experiences have, however, been noted by program coordinators or participants. The key lessons learnt so far from these experiences are outlined in a paper being prepared by NSW DET. They can be summarised as follows.

Lesson 1: The defining feature of the pilot programs is that they do not solve a 'standard' training problem.

A comprehensive typology of the different forms of funded pilot projects has recently been prepared (NSW DET 2006). An initial study of these experiences noted that they fell into one of four categories:

- the reshaping of work and the labour market to solve the key cause of a skill shortage (for example, unattractive, fragmented trackwork rider jobs in the NSW racing industry)
- VET institutions as an innovation partner working closely with leading research institutes and/or businesses developing new products and processes
- improving quality arrangements, especially across supply chains or networks of production and service provision
- customised, multi-employer responses to particular skill shortages.

This categorical system captures those initiatives concerned with demand-side issues. Interventions directed at mobilising different pools of labour have also been devised. For example, some group training organisations actively mobilise different types of welfare beneficiaries (such as long-term sole parents) into non-traditional occupations (such as security workers) on the basis of quality on-the-job training arrangements and improved opportunities for career progression (Buchanan and Evesson 2004).

Lesson 2: Getting employers to accept joint responsibility for developing the skilled workers they need is difficult and takes time.

In the course of preparing this paper, we have been able to benefit from the latest thinking of David Finegold and Ewart Keep – two of the researchers who originally developed the term skill ecosystem. A key point Finegold made concerned what he identified as one of the greatest dilemmas facing those interested in coherent work and skills policy today. There is a greater need than ever for employer involvement in skill development, but pressures associated with current economic and political fashions mean that it is more difficult than ever to secure employer involvement (Finegold 2005). Reflecting on UK experience, Keep has observed that governments have intervened massively because employers have failed to take responsibility for their own skill requirements. This has had the perverse effect of making the problem worse,

not better. Employers have now come to depend on government to solve their skill problems. The new British disease is 'business welfare dependency' (Keep 2005).

The experiences of the Australian skill ecosystem pilot projects (especially those in Queensland) indicate that while Finegold's dilemma is real, the dynamic identified by Keep is not inevitable. However, great care in program design is required. The key factors for success on this matter appear to be:

- support for intermediaries who work with and not on or for the industry, sector or region they are servicing
- allowing the type of initiatives undertaken by intermediaries to vary quite differently by sector and region
- allowing facilitators time to make mistakes, to learn from them, and then successfully address the key issues that need attention with activities that work.

The NSW DET project manager has also observed that the pilot skill ecosystem projects managed by NSW DET confirm that skill formation issues are, for employers, often a second or third order issue, less important than securing a reliable workforce, getting the most out of new technology, delivering a service more efficiently or effectively, or accessing a new market. Intermediaries play a crucial role in raising the profile of training in an industry context, especially when they are equipped to help employers access the desirable and cost-effective training easily. Continual advocacy on behalf of skill development is often needed. The different interests of those making up the skill ecosystem network can be productively negotiated but not always resolved.

Lesson 3: Successful pilot programs have involved a wide range of stakeholders.

The nine ANTA/DEST/NSW DET pilot projects involved industry associations, enterprise and workplace managers, VET providers, industry skills councils and education authorities. Among the Queensland Skills Formation Strategies, the key players in particular projects have been enterprise level employers, other State Government agencies (especially the Department of State Development), VET providers and workplace managers.

Lesson 4: The quality of the projects has been profoundly influenced by the quality of the facilitators and their institutional location.

Facilitators have come from a wide variety of backgrounds. It appears that those who have either direct experience with or a deep commitment to the network of employers they are dealing with have a very strong, positive influence on the success of an initiative.

Reflecting the experiences of the skill ecosystem pilot programs, NSW DET has observed: 'From the skill ecosystem project perspective, we can see that capacity building and active project facilitation are necessary to ensure that the industry networks are off to the best possible start. All projects have struggled with the way to develop interventions in their ecosystems that are at once multi-faceted, feasible and achievable, likely to be sustainable, etc. Very skilful project management, the development of implementation guidelines and tools, and strategies to ensure knowledge developed through practice is documented and shared, are important in making skill ecosystem interventions work.'

Lesson 5: Educators and education policymakers must be neither masters nor servants of particular projects or the program at large.

If educators are too prominent, they fail to draw workplaces into new arrangements that better link employment and learning. On the other hand, if educators are sidelined, employers will focus almost exclusively on meeting their short-term labour requirements, and will tend to neglect issues of broader training and credentialling of skills acquired.

The best way to balance the competing demands of employment and education appears to be associated with the location

of project and program coordination personnel. It is vital that no facilitator for a particular project is based in an education department or an education institution. Instead, they should be located either at a workplace that is part of the network or in an establishment located near leading employer members of the network. On the other hand, there appear to be advantages in having educators and/or education policymakers centrally involved in overall program coordination. They are well placed to ensure that while a particular project is firmly based in the workplace, the guiding forces shaping the activities of the program should have a strong education component.

4.5 Lessons from the Regional Workforce Development Collaboratives in California

The United States has a long history of community-based programs directed at improving the employment prospects of disadvantaged job seekers (Osterman 1988). At their best, these have actively drawn groups of employers into workforce development networks (Harrison and Weiss 1998). In recent years there has been growing interest in directly linking the processes of workforce and economic development at regional level.[6] These initiatives offer very important lessons for all those interested in improving the links between employment and learning. While they are concerned with broader linkages involving workforce and economic development, their insights into the dynamics of multi-employer collaboration and employer coordination with others interested in education and training are invaluable.

For this paper, the Regional Workforce Development Collaboratives (RWDCs) in California were the most relevant of recent initiatives. In March 2001, a consortium of community-based organisations, foundations and government agencies worked with a range of organisations to develop a number of demonstration projects that endeavoured to simultaneously improve workforce and economic development. Three Collaborative Regional Initiatives (CRIs) were sponsored, and one community college was also involved as a demonstration project. The experiences of these projects were also compared with a RWDC run independently of the CRI process. An evaluation of the experiences of these projects has recently been released (Chapple 2005). A summary of this report is provided in Attachment 2. Its key findings are summarised below.

The defining feature of each of the projects was that they endeavoured to link workforce and economic development on the basis of initiatives that were 'collaborative in scope, regional in scale, career-oriented in focus, and data-intensive in strategy' (Chapple 2005: iii-iv). The evaluation examined whether the 'CRIs organise problem solving around workforce development more effectively than do other collaboratives'. Chapple's conclusion is clear:

'[R]egional collaboration is not well suited to addressing both workforce and economic development goals; however, it can make workforce development programs more effective if partners from both inside and outside the current system are engaged in a networked structure with clear roles and responsibilities, as opposed to a collaboration on paper' (2005: iv).

She also concluded that they were 'more effective as catalysts for long-term system change than as implementers of workforce development programs' (2005: 58).

In addition to this overall finding, Chapple provided a wealth of insight into issues relevant to all with an interest in getting better links between employment and learning. The following listing of 'lessons' distils some very rich empirical material and subtle argumentation. Those with an interest in learning from Chapple's research would benefit greatly from reading her full report.

Lesson 1: Economic development is not an unambiguous notion: two paradigms informed the various projects.

One group of projects was primarily concerned with increasing economic activity in the region by making business more competitive. In the other philosophy, the focus was less on business than on the capacity of community members to participate in the economy. These philosophies informed the project's governance strategy - whether the initiative worked with the training system or whether it tried to change it from the outside. Those concerned with merely raising skill levels to meet the immediate needs of business took the education system as they found it. Those interested in raising skills for social as well as economic development sought change to systems of skill formation to better achieve this end.

Lesson 2: Collaboration is important and difficult to achieve, and takes at least two different forms.

Chapple noted that 'collaboration is very difficult, costly, and time consuming' (2005: vi). She also found that forms of collaboration differed markedly. They ranged from 'an exploratory process of identifying differences and developing shared purposes to the more formal process of joint decision-making with shared responsibility' (2005: vi). Most importantly, she drew a distinction between collaboration that was essentially based on intermediaries actively brokering networks, and more encompassing arrangements in which responsibility was shared and action was taken on a joint basis. The former were more prevalent where there was an intermediary and a large number of stakeholders, and where the objective was more broadly defined (for example, business development). Situations involving joint ownership and shared responsibility were more common when there was only a limited number of stakeholders focused primarily on education and training issues (for example, between training providers and workforce investment boards) (2005: vi).

Lesson 3: Achieving simultaneous improvements in workforce and economic development is difficult.

None of the projects examined was successful in simultaneously achieving workforce and economic development. This is not inevitable, as other projects have demonstrated that it is possible to achieve such an outcome. Examples of such successes noted by Chapple were Project QUEST in San Antonio, the Center for Employment Training in San Jose, and the Bay Area Video Coalition in San Francisco (2005: xii).

Lesson 4: If better links between workforce and economic development are to be achieved, greater attention needs to be devoted to directly managing four contradictions or tensions.

Arguably the most powerful insights provided by Chapple are her observations about the key issues that limited the success of the projects. These can be summarised as a series of questions about four key issues (xii, 64):

- who is connected: primarily businesses or business and other relevant experts?
- on what basis are the connections built: networks of production, common output, common occupations or shared skill sets?
- what is the spatial setting of connection: region or locality?
- what is the time horizon for action: short term or long term?

Clarification of these issues is vital for success. Businesspeople are often inclined to want to do things on their own, within established networks at regional level, and with a short timeframe in mind. This approach rarely succeeds in overcoming deep-seated skill and business development problems. Optimal outcomes appear to require collaboration between employers and other experts (such as educators) on

coherent skill sets, at a local labour market level, and over quite a long time.

Lesson 5: The priority for a new approach to policy is to ensure that the building of new capacity is built into established flows of funding.

Chapple noted that the funding base for most of the initiatives she studied was insecure. The key challenge was to incorporate them into existing funding streams. Although she did not offer concrete suggestions on how this could be done, she identified a number of features that should characterise any new funding program. These are:

- funding should be available for initiatives that are a catalyst for long-run system change and not just for program delivery
- 'don't fund projects, fund leveraging'
- avoid narrow performance targets based on output
- get beyond the mechanistic approach to program design and be more organic
- support capacity to adapt to uneven development of employment and skill formation arrangements (2005: 58 and 66-67).

Both the Australian and Californian programs provide a rich set of experiences for policymakers and researchers alike. However, their key lesson can be simply stated. Better integration of employment and learning requires fundamental changes in employer collaborative behaviour and in the way that they as a group coordinate with others, especially educators. This can be summarised in two simple propositions:

- The ability of employers to become more self-reliant in obtaining the labour they need requires greater acceptance of joint responsibility for skill development and use. At the very least, it requires better coordination of their efforts to acquire, develop and use the labour they need. This takes considerable time and resources to nurture. In particular, it requires the development of an effective set of intermediary organisations to broker better connections.
- Educators and other stakeholders have a vital role to play. They must be neither masters nor servants in any new approach to linking employment and learning.

5.0 The way forward

The need to establish better links between workforce and business development is undeniable. The analyses summarised in this paper provide clear pointers for the direction that change should take.

In moving forward, we must resist two temptations. The first is the impulse to 'just do it'. Frustration with current skill shortages and labour retention problems is rising. Pressure for a quick fix is understandably increasing. The temptation to immediately embark on a bold new approach should be resisted. The education and training system, especially where concerned with intermediate level skills, has been subjected to numerous rounds of 'restructures' in the last fifteen years. Reform fatigue among all involved is substantial. Any new approach should be done in a way that draws in and involves those most immediately affected. Another top-down, centrally imposed set of changes is unlikely to succeed, no matter how well intentioned. Equally, the temptation to call for more research must also be resisted. A huge amount of information has already been collected and analysed. While it could be improved, what we do know offers enough insight on how best to move forward. In particular, it helps us to clarify objectives and criteria for program design, and to identify the issues needing priority attention.

5.1 Objectives

The overriding aim of any new program must be to overcome and prevent skill shortages and create more decent work by building better skill ecosystems. In this way, workforce development should be intimately connected with business/organisational development.

The specific objectives must be:

- to help employers become self-reliant by accepting joint responsibility for key skill issues
- to build new organisational and analytical capacity to achieve this.

These objectives will only be achieved if we move beyond the rigidities of the training market mindset. They will also require the emergence of effective intermediaries/brokers dedicated to nurturing healthy skill ecosystems, not just better partnerships for training provision.

It is important to note that nurturing healthy and more desirable skill ecosystems is a policy objective that cuts across many areas of public policy. It concerns not only the system of technical education. Indeed, within the realm of technical education, it deals with only some aspects of it – especially those concerned with the connection between learning in the workplace and within more formal off-the-job settings. Systems of technical education are concerned with more than this. In particular, they have a critical role to play in giving people foundation skills in general, and core capacities for specific occupations or vocations in particular. It is important that any initiatives directed at promoting healthier and more desirable skill ecosystems are seen to complement rather than to replace a system of mass technical education provided by TAFE and others.

5.2 A new skill ecosystem program for integrating employment and learning

If these objectives are to have any chance of being achieved, a special program designed to promote the building of new capacity will be required. It should have the following features:

Policy setting

Given that the problem of improving the links between employment and learning is not solely a matter of VET policy, much of the funding should come from across a range of portfolios. For example, half could come from agencies responsible for industry, State and regional development and innovation. Such a diverse source of funding would encourage a whole-of-government approach to addressing the key problems of maintaining strong productivity growth and promoting decent work.

The core of any program funding should, however, come from money allocated for VET. While achieving improved linkages between employment and learning requires more than changes in education policy and practice, most of the interest

in this issue comes from those responsible for skills and work issues, the central object of VET policy. The current National Strategic Plan for VET, *Shaping our future* (ANTA 2004), envisages the need for new capacity building. This strategy has four objectives. The third states that 'communities and regions will be strengthened economically and socially through learning and employment.' Its vision is described in the following manner:

- Integrated learning and employment solutions will support regional economic, social and environmental development and sustainability. Vocational education and training will stimulate interest in learning. It will strengthen the capacity of TAFE and other providers and brokers to partner with local government and non-government agencies, businesses and industry clusters. It will encourage local planning and innovation, and help communities deal with change and take advantage of opportunities for growth (ANTA 2004, NSW DET 2006).

To set up a new program to promote better links between employment and learning through establishing new intermediaries is perfectly consistent with these sentiments.

What would be funded?

There is no standard set of initiatives that will create better skill ecosystems. The problems affecting particular systems will require particular evidence-based solutions. For example, as noted in the opening part of this paper (page 8), in the NSW Racing skill ecosystem pilot, the solution to a 'shortage' of trackwork riders did not involve having the VET system produce more Certificate II and III riders. Rather, the problem required changing the nature of the job. Similarly, in Victoria, some of the intensity has been taken out of the nursing 'shortage' there because mandatory nurse-patient ratios now give nurses in public hospitals greater capacity to provide the quality of care to patients and support to each other that is so vital for keeping them in the profession. While this initiative has not solved the nurse retention problem, it has contributed significantly to stabilising it (Buchanan and Considine 2005).

In addition to making resources available for identifying customised solutions for specific skill ecosystems, particular attention would also be devoted both to supporting new intermediary arrangements and to increasing the resources available for quality on-the-job learning. The importance of the development of intermediaries capable of overcoming key coordination failures was noted in the previous chapter. Following an insight from the CRI experience, preference would be given to proposals that identified how different resources could be better integrated on the basis of funding brokerage and/or collaborative activities. That is, the program would 'fund leveraging, not projects' (to use the words of one key informant cited in Chapple's evaluation).

Following the lessons on the factors that contribute to the simultaneous achievement of workforce and economic development objectives, preference would also be given to proposals which:

- connected employers as coherent groups with networks of other relevant experts in areas like education and job placement services (funding for networks based primarily on employers or one other set of stakeholders would not be encouraged)
- built connections on the basis of clearly identified shared skill sets to avoid problems associated with merely funding on the basis of associations based on industry, occupation or networks of production or service provision (which often lack common skill situations)
- defined spatial coverage sensibly (that is, clearly defined the scale of geographic coverage with reference to labour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market and education criteria, not primarily production or service boundaries)

- identified realistic time scales for action and noted how the usual employer pressure for quick results is to be balanced with the educational and worker need for appropriate time to learn coherent and transferable ensembles of skill.

Given Keep's hypothesis on the problem of growing dependence of employers in the UK on government funding for expenditure on training (see page 17), preference should also be given to employers, especially groups of employers, who commit to making their own financial contribution to the development of the new networking arrangements.

Resources would also need to be available for intermediaries who address problems of labour supply. Skill problems often have their roots in the changing nature of family and community arrangements. The restructuring of life courses, especially for women and students, has dramatically changed the pools of labour available in sectors as diverse as community services, retail and sport and recreation (Buchanan and Hall 2005). Intermediaries could play a vital role in improving structures of community support and advice. Examples of this kind of intermediary are provided by the NSW Government's Drug and Alcohol Workforce Development Council (2005). The council is sponsoring a range of initiatives that help nurture and retain the workforce that supports and rehabilitates those afflicted by drug and alcohol dependence. Effective support structures here help both these workers and clients – clients who more often than not provide labour on an erratic basis to employers in a wide range of industries. Social support arrangements could also extend to new intermediaries who ensure economies of scale are captured in the provision of child care and aged care, thereby freeing up informal carers to enter the local workforce.

Improved intermediaries will go part of the way to improving linkages between employment and learning. Extra resources should also be available to workers and workplaces to create the space for improved on-the-job learning arrangements. These resources could be used to support

- 'release time' funding for experienced personnel to codify and pass on skills
- purchase of 'training places' at workplaces with the latest technologies/service provision arrangements which workers from beyond the immediate work area or workplace can access
- workplace training coordinators within larger workplaces and for networks of SMEs (such as union workplace learning representatives) to help capture economies of scale in the planning and conduct of learning at workplace level.

Who would be funded?

The program should be rolled out in an orderly manner. Instead of attempting a 'crash through or crash' approach, it is better to move gradually and effectively – learning as much from 'failures' as from 'successes'. Suggestions as to how funding could be rolled out are summarised below.

(i) Start with six priority skill sets:
- initially in two jurisdictions each
- selected on nationally agreed criteria such as
  - recruitment and retention problems where demand is growing
  - need to raise capacity of SMEs to use more innovative and higher skill methods of production/ service provision
  - emerging industry facing global competition
  - improve quality across the supply chain

(ii) Sponsoring agencies – consortia and multi-employer networks would need to
- have representatives with an interest in the relevant skill set – both users of the labour (employers) and providers of this labour (employee

or union representatives, as well as key personnel from labour hire and group training organisations)
- have locality/regional networks
- have the interest and capacity to link employment and learning
- include a training provider
- have the ability to increase the use – not just development – of intermediate and higher level skills.

(iii) Program requirements:
- trial new practices concerning work organisation, technology, job redesign and forms of employment, as well as on-the-job learning
- holistic analysis of how better skill development and use will improve business
- RTO engaged as broker, not just service provider
- promote multi-employer cooperation
- propose strategy for ecological, social and economic sustainability
- note networks of support to be mobilised and relied upon.

Governance and support structures

The collaboration that the program would seek to promote at the local level should be reflected in its own governance arrangements. Consequently, the program should be overseen by a guiding coalition with representation from the Australian and State governments, employers and unions, TAFE and other RTOs. In addition, the program would need to be supported by a new 'extension service' similar to those that operate in many agricultural industries. Such a service would help brokers working for intermediaries at the local level to build new networks that better integrate employment and learning. Day-to-day administration of the program would be managed by a small secretariat. Half the personnel would have an education/skill system background, and the other half would come from other stakeholders (government and non-government). All involved with the program would ultimately be accountable to the ministerial council responsible for education and training matters.

Funding arrangements

As noted earlier, public VET funds should 'not buy projects but rather fund leverage'. Only those intermediaries who show they can both attract active (and preferably joint) employer contributions to skill development and also draw in the expertise of technical educators and relevant community-based organisations should receive public funding. At least 10 per cent of current public VET funds should ultimately be allocated for the skill ecosystem program. If employers are not forthcoming with matching funds after the first year of the program's operation, they should be required to make a co-payment so that funds can be pooled and then allocated back to them in a way that helps them overcome their coordination failures. Further details on how to learn from previous experiences with such levies are provided in Hall et al. (2002).

Indicative quantums to be associated with the program could be as follows:

- Per local skill set network
  - \$750,000 over three years from public funds to pay for the broker, a support person and administrative/other support (assume average of five intermediaries needing funding per jurisdiction)
  - matching funds from industry to help with particular initiatives such as workplace release arrangements, 'training place' positions or workplace training coordinators
  - a central person for each skill set capable of coordinating and advising local brokers and dealing with representatives from the other skill sets or vocational streams, to help clarify area of coverage and potential collaboration.
- Anticipated aggregate funding per annum
  - brokers and support for six skill sets, each in two jurisdictions (60 brokers in total)

– 6 million (public)

– workplace learning initiatives $6 million (employers)

– extension service $6 million (public)

– governance and coordination arrangements

– $2 million (public).

Monitoring and evaluation

Performance measures should be broadened to include data on substantive employment-based outcomes, not crude measures of training output like ASCH or New Apprenticeship commencements. The types of indicators that should be developed are:

- change in the percentage of workers using skills held within the locality of the network, or
- change in the balance of skill supply and vacancies within the locality, controlling for demand conditions.

The systematic collection of qualitative information should also be used to assess the performance of new funding arrangements.

5.3 The mechanism: A new role for VET providers and other public sector agencies as catalysts for change

Consideration could be given to developing a new role for TAFE as catalyst/key sites for change. This could take the form of a new, semi-autonomous section of TAFE that was not caught up in the current 'sausage machine' logic of ASCH. It would aim to make TAFE integral to economic and social renewal, but organise TAFE's involvement in ways that are independent of current funding arrangements.

RTOs should not have a monopoly on the catalyst role. Arguably the most important issue for reform in this area is the character of the jobs created, not just more and/or better education and training. By definition, this takes us beyond the realm of skill formation policy and into that of industry development. Organisations that provide the venues for workforce development initiatives could be outside of education establishments. Moreover, there could be a role for funds from education/training being matched with funds from line agencies responsible for particular sectors, particularly State development, health, community/human services, local government, or tourism, sport and recreation. In this way, strategies for improving how the workforce is developed would be more closely integrated with strategies for industry development.

6.0 The importance of changed funding arrangements

It was noted at the beginning of this paper that most skill problems do not originate from the system of skill formation. For some time, pressures from competition, shareholder value and public sector funding austerity have squeezed the space and resources available for the coherent development, transmission and refinement of skill.

Achieving change in this context will not be easy. Clarity of purpose and objectives will be central to success. The idea of decent work provides an important coordinate for future policy on employment and learning. Equally critical is the need to ensure that we have the social as well as financial resources to move forward. It is critical to recognise that while the potential for reaping major gains from improved coordination arrangements is real, to achieve it requires the development of organisational and analytical capacity that currently does not exist.

Unless great care is taken in designing initiatives that have the ability to engage with new realities, it is likely that the reforms will fail to make much difference. The greatest immediate threat is a concern with workforce development fitting in with a 'training/VET/skill formation' mindset. Experience in the UK has shown that the idea of workforce development has narrowed to become concerned with 'how we can get the workforce to develop its skills to be more job ready for the future' (Buchanan and Hall 2005). However, this is not the key problem. The key challenge is to change how skills are developed and used – to change the role of workplaces, forms of business organisation and modes of engaging labour so that the day-to-day practice of work positively contributes to the development and use of skill.

But the problem is more than lack of policy initiatives and underdeveloped networking arrangements. Most of the problems are inscribed in the flow of funds and resources – flows driven by intensifying competition arising from excess capacity, preoccupation with maximising shareholder value in the short run, and public sector policies preoccupied with fiscal austerity (Watson et al. 2003: chapter 12). New skill and networking initiatives are important, but they are unlikely to result in lasting change.

We need to be constantly aware of the fundamental nature of the problems we need to solve. It is not how we can ensure that the workforce is better developed – rather, it is how we can ensure that the key forces retarding development or underutilising skill levels can be changed. The problem is not just about funding levels and sources; it is about distinctive regimes of skill development and use. Change on a voluntary basis would be ideal, but as realists we must prepare ourselves for something more decisive. The current regime exists for good reasons, which are unlikely to disappear of their own accord in the foreseeable future. It is essential that we consider what initiatives will work most successfully to move us beyond the current trajectory – one which has resulted in a preoccupation with deploying labour to the detriment of orderly systems of developing labour. Without such a shift, the future looks bleak, and future 'skill formation' initiatives are destined to yet again miss their mark.

The funding of skill formation capacity, not just 'outcomes', will be central to future success. The source of funding will be equally, if not more, important. The requirement for employers to match any public funding for skill ecosystems will be vital if business welfare dependency is to be avoided.

7.0 Conclusion

If labour productivity is to grow in the future, a better way of balancing the requirement for properly developing and deploying labour is needed. Increased quiet time for the coherent development and refinement of skills on the job is essential. People need time to learn and apply what they have learnt. This is not a cost but an investment in sustainable growth. It also allows space for innovation.

The choice is clear. We can continue on the current trajectory of both wasted skills and the sweating of skills. Or we can have a future based on sustainable work, with time for renewal and upgrading of skill at work and beyond. As we noted in *Beyond Flexibility* (2001), while skills are not the answer, there can be no answer without skills. Only by engaging with the dynamics associated with the productivity of labour can we move forward. Central to this will be overcoming current coordination failures in an orderly, evidence-driven way that pays careful attention to building the organisational and analytical capability of comprehending and responding to the rapidly changing world of work.

Prime responsibility for driving the change process will have to come from the education portfolio. It will need to rethink its role. In the area of skills, we need to move from defining the issues in terms of what 'VET' can do for 'industry'. Instead, we need to focus on how workers can be better developed and deployed through improved work arrangements within and between workplaces. The shift from 'VET' to a concern with 'workforce development' is not so much about getting the workforce more 'developed'; rather, it is about how it is developed. The key challenge for future analytical and policy research is to identify how best to achieve such a change. In particular, the major priorities are

- identifying the domains covered by different skill ecosystems
- identifying the contours and content of the different vocational streams/skill sets
- improving knowledge management systems concerning changing skill requirements at workplace and multi-employer levels, and
- identifying new funding models that promote the development and use of skill.

Most importantly, it also requires gaining a better understanding of how trust relations in employment and learning systems are nurtured and undermined. It is only by building better trust relations that better approaches to collaboration can emerge to overcome the coordination failures that are the immediate cause of many skill problems today.

Attachment 1

Consultations, workshops and presentations associated with the production of this paper

This paper has benefited from the following workshops, conference presentations and discussions:

- workshop on the role of sector skill councils led by David Finegold, Keck Graduate Institute of Applied Life Sciences, Claremont College, California
- workshop on recent developments in skill analysis and policy at acirrt and Centre for Skills, Knowledge, Organisational Performance and Education (SKOPE) led by Professor Ewart Keep, University of Warwick. Subsequent extended discussions with Professor Keep have had a major influence on the content of this paper.
- Queensland Mining Industry Skills Centre – presentation to annual conference and follow-up discussion
- Queensland 'whole of government' forum on new directions in policy on skills
- Queensland community services training network 'discussion night' on new directions in skills policy
- Australian Senior Human Resources Roundtable – Chris Reynolds (Chair)
- Australian Government Department of Education, Science and Training skills forum held in Melbourne in September 2005
- meeting of the Victorian TAFE planners network, together with other Victorian TAFE researchers, in Melbourne in October 2005
- a special meeting of NSW TAFE planners
- Group Training Australia national conference, 2005 – presentation and subsequent discussions
- a day-long workshop with VET officers from the Australian Government Department of Education, Science and Training on current and new directions in skills policy and practice.

The paper also draws on the extensive insights generated by an earlier research project undertaken jointly by acirrt and NSW TAFE personnel that examined the changing skill requirements of NSW manufacturing (Buchanan and Briggs 2004). Contributors to that project included Keith Falconer, Warwick Jones, Brian Hartshorne, Ken Fraser, John Rumens, Julia Shortus, Rex Davies, Keith Dykes, Dave Rowland, Gordon McLean, Steve Parkinson, John Lawler, Alan Linklater, Richard Jones, Cindie Crannis and the late Peter Wright.

Attachment 2

More details on Chapple's lessons from the Regional Workforce Development Collaboratives in California

Lesson 1: Economic development is not an unambiguous notion: two paradigms informed the various projects.

One group of projects was primarily concerned with 'increasing economic activity in the region by making business more competitive. For these organisations, workforce development is primarily a means of increasing business productivity, by improving the quality of the workforce available' (2005: v-vi). It was assumed in these projects that the disadvantaged ultimately benefit from faster growth.

In the other philosophy, the focus is not so much on business 'but on the capacity of community members to participate in the economy'.

While this workforce development philosophy is also about making business more competitive, the idea is to do so by simultaneously shaping the demand and supply sides of the labour market, that is, ensuring that low-skill jobs are available and offer a career ladder, and preparing underprivileged community members to fill the jobs (2005: vi).

These philosophies inform governance strategy whether the initiative works with the training system or whether it tries to change it from the outside.

Lesson 2: Collaboration is important, is difficult to achieve and takes at least two different forms.

A key assumption of all projects was that collaboration would make programs of regional and workforce development more effective. Chapple notes that 'collaboration is very difficult, costly, and time consuming' (2005: vi). She quotes a number of participants involved in the project who made some powerful observations on this point. One noted that '[t]he problem is that most don't know how to collaborate' (2005: 37). Another noted that learning to collaborate is slow because collaboration has a cost: 'Combining does not increase resources … It increases complexity' (2005: 37).

She also found that forms of collaboration differed markedly. They ranged from 'an exploratory process of identifying differences and developing shared purposes to the more formal process of joint decision-making with shared responsibility' (2005: vi). Most importantly, she drew a distinction between collaboration that was essentially based on intermediaries actively brokering networks, and more encompassing arrangements in which responsibility was shared and action was taken on a joint basis. The former were more prevalent where there was an intermediary and a large number of stakeholders, and the objective was more broadly defined (for example, business development). Situations involving joint ownership and shared responsibility were more common when there were only a limited number of stakeholders focused primarily on education and training issues (for example, between training providers and workforce investment boards) (2005: vi).

Lesson 3: Achieving simultaneous improvements in workforce and economic development is difficult.

None of the projects examined was successful in simultaneously achieving workforce and economic development. This is not inevitable, as other projects have demonstrated that it is possible to achieve such an outcome. Examples of such successes noted by Chapple were Project QUEST in San Antonio, the Center for Employment Training in San Jose and the Bay Area Video Coalition in San Francisco (2005, xii).

Lesson 4: If better links between workforce and economic development are to be achieved, greater attention needs to be devoted to directly managing four contradictions or tensions.

Arguably Chapple's most powerful insights are her observations about the key issues that limited the success of the projects. These can be summarised as a series of questions about four key issues.[7]

Question 1:
Who is connected: primarily businesses, or business and other relevant experts?

It appears that a number of the CRIs were primarily driven by business for business. In these arrangements, other players, especially educators and community based organisations with extensive labour market experience in job placement, were left out. Such arrangements did not work well. As Chapple notes, just because an arrangement is business-driven, it does not follow that it is responsive to business (2005: xii). Expertise other than in business, especially in training in soft skills and job placement, is often better provided by those who specialise in these areas (2005: 58). As she notes, the key to success is not who does day-to-day management or whether collaboration is 'full blooded or intermediary based.' Rather, 'the key to the effectiveness of the [two most successful] initiatives … was not open dialogue but the intermediary role, negotiating with individual partners' (2005: 59). The concluding paragraph to her report makes her findings on this point clear:

'Yet the best business minds may still not be able to solve the complex problem of simultaneous economic and workforce development. The failure of the projects reveals the importance of certain factors, such as participation, commitment, and leadership from a diverse group of experts, not just business' (2005: 69).

Question 2:
On what basis are the connections built: networks of production, common output, common occupations or shared skill sets?

Consistent with the growing literature on network production, Chapple found that while business clusters are very good for economic development, they did not necessarily provide the ideal basis for workforce development (2005: xii). Healthy clusters will often have only limited labour demand, or they may network a diverse range of businesses which have few common skill needs (2005: 64). Arranging collaboration on a sectoral basis can help, but it then leaves workers dependent on the fortunes of that sector for future job prospects (2005: 64). Organising on an occupational basis can avoid this, but it is hard to organise employers on such a basis (2005: 64). The most successful initiatives she studied, however, found a way around these problems:

'The solution that [Gateway Cities Partnership] identified was to look across industries for common skill sets; as it turned out, familiarity with the supply chain is valuable for a variety of occupations – not just in port-related businesses, but also at retailers and wholesalers. [Watsonville Digital Bridge Academy] has already adopted this skill-based approach, and it is also embodied in the new Regional Skill Alliances in Orange County' (2005: 64).

That is, the notion of skill sets seems to offer the key to more coherent coordination for improved approaches to workforce development – it gets beyond the limitations of sector, industry and occupation.[8]

Question 3:
What is the spatial setting of connection: region or locality?

Chapple's analysis is informed by a great sensitivity to the importance of spatial dimensions of economic and labour market practice. As she points out:

'A major unresolved contradiction is the scale at which economic and workforce development goals are realised. Successful economic development strategies are regional in scale because the economy works across jurisdictional boundaries … In contrast, successful placement of disadvantaged training program graduates works primarily at a local scale through local relationships' (2005: xiii).

In the body of her report, she notes that one of the reasons for the success of a particular project, which was based at Santa Cruz, was the smaller scale of operation involved in working in that locality. Most of the key stakeholders knew each other. In this context she notes that in larger cities, 'for specific projects it may be necessary to shrink the region to the right group of committed stakeholders' (2005: 63).

Question 4:
What is the time horizon for action: short term or long term?

The tensions of interest in timeframes are stark. Business usually wants an immediate solution, but employment and skill issues usually take time to resolve (2005: 65). Unless this tension is carefully managed, the needs of the urgent drive out what may be important for longer run growth.

Lesson 5: The priority for a new approach to policy is to ensure that the building of new capacity is built into established flows of funding.

Chapple notes that the funding base for most of the initiatives she studied was insecure. The key challenge was to incorporate them into existing funding streams. While she does not offer concrete suggestions on how this could be done, she identifies, often in passing, a number of features that should characterise any new funding program. These are:

- funding should be available for initiatives that are a catalyst for long run system change and not just for program delivery (2005: 58)
- 'Don't fund projects, fund leveraging' (2005: 66)
- avoid narrow performance targets based on output (2005: 66)
- get beyond the mechanistic approach to program design and be more organic (2005: 67)
- support capacity to adapt to uneven development of employment and skill formation arrangements (2005: 67).

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Footnotes

[1] In the mid-1990s there were 10,000 trainees and about 120,000 apprentices in training. By mid-2005 there were around 400,000 'new apprentices' in training. (Watson et al. 2003: chapter 10; NCVER 2005).

[2] Details about the notion of labour and labour productivity discussed in this section can be found in Fox 1974 and Braverman 1974.

[3] Overviews of the research can be found in Buchanan et al. 2001, Watson et al. 2003: chapter 10, Buchanan et al. 2004 and Buchanan et al. 2005.

[4] For an analysis of similar dynamics but with their own distinctive features see: for dairy in south-west Victoria, Cole (2004a, 2004b, 2004c); for manufacturing in Victoria, Buchanan, Briggs and Evesson (2002); for manufacturing in NSW, Buchanan and Briggs (2004); and for services in Victoria, Buchanan and Hall (2005). For an analysis of developments among nurses in NSW, see Buchanan and Considine (2002), and for Victoria, Considine and Buchanan (1999).

[5] Other indicators are collected for monitoring the performance of the VET system. These include data on the number of people gaining recognised qualifications, and employer satisfaction with the outputs of the system. Data on issues such as these play only a marginal role in the allocation of public VET resources.

[6] The conceptual idea behind the initiative came from other sources. See Chapple 2005: 3 for further details.

[7] The following material has been derived from material in Chapple (2005: xii, 58-69).

[8] Chapple expresses this conclusion in slightly different terms: 'The lesson is that workforce development initiatives probably need to take a sector approach to engage employers but also target occupations which cut across many different industries.' That is, in the body of her analysis she refers to the notion of 'skill set'. This term is not used in the executive summary, which refers instead to sector and occupation (2005: xii).

[9] This paper is based on insights gained from a large number of projects evaluating reforms to, and the evolution of, Australian skill formation and working life. These were undertaken by groups of researchers primarily based at acirrt, the University of Sydney's workplace research centre. At the beginning of the various sub-sections of the paper, details are provided of the reports on which they are based (and sometimes reproduced in part). While citations of all the researchers involved in these projects are provided in these footnotes, I wish to acknowledge the special contributions made to developing the analysis summarised in this paper by Chris Briggs, Kaye Schofield, Richard Hall, Ian Watson, Justine Evesson, Gillian Considine and Mark Cole. Ron Callus has also contributed greatly to my understanding of these issues over the last two decades.

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