

# WORKPLACE RESEARCH CENTRE

THE UNIVERSITY OF SYDNEY  
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SYDNEY

## BETTER WORKFORCE PLANNING

REFLECTIONS ON RECENT EXPERIENCES IN  
NORWAY, SINGAPORE, THE UK AND THE USA

# **BETTER WORKFORCE PLANNING**

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NORWAY, SINGAPORE, THE UK AND THE USA

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# EXECUTIVE SUMMARY

The phrase *evidence based decision making* is often cited, but rarely achieved. Often, this is due in part to the difficulties of robust and consistent data collection. There is a growing interest in improving the way data is generated and used in workforce development policy and practice in contemporary Australia. To assist this process, this report seeks to consider approaches to data collection for workforce planning in four advanced industrialised nations: the United States of America (USA), the United Kingdom (UK), Singapore and Norway. Whilst no international system can be supplanted to Australia, a comparative approach allows elucidation of the origins, preconditions and outcomes typically associated with different models of workforce planning.

This report also seeks to offer some definitional clarity around the issue of workforce development and the planning processes on which it typically relies. As it stands, there is currently no academic or public policy consensus surrounding the issue of 'workforce planning'. This report applies, and seeks to extend, the taxonomy described by Buchanan and Evesson (2008) to analyse the international approaches studied.

Buchanan and Evesson (2008) have noted 'planning' concerning workforce development takes at least two distinct forms – the production of workforce projections, and planning for workforce development.

## 1. Production of workforce projections

Also colloquially termed 'manpower planning', this approach to workforce development has quantitative estimates as the basis of design. The key concern is to estimate or forecast likely outcomes, so that interventions or contingency plans can be prepared to ameliorate the impact of unfavourable trends or labour market outcomes. This analysis typically relies on well established and largely static industry and occupational categories, and is underpinned by two primary assumptions:

- a) industry and occupational categories available today are adequate for reporting on likely demand and supply conditions in the future; and
- b) education and training institutions can provide the qualifications that will enable people to meet projected demand.

## 2. Planning for workforce development

In this approach, the goal is to gather understanding on current workforce capacity, but also develop understanding on workforce development capability. The central issue in planning for workforce development is 'adaptive capacity', and how it should be defined. Two assumptions are defining:

- c) the nature of industries and occupations often change dramatically and in unanticipated ways; and
- d) the settings within which work is performed are an important element in the development of skill.

On the basis of evidence from this research, Buchanan and Evesson's (2008) taxonomy is extended with a third approach to workforce development: blue sky research.

### 3. Blue Sky research

This approach describes speculative research undertaken to promote creative thought about the future of the workforce. The goal of blue sky research is not to accurately predict the future, but rather to consider the possible options available.

Using this understanding of workforce development, a policy and literature review, supplemented by interviews with key informants, was conducted on the four chosen countries. However, prudent evaluation of workforce planning models must give consideration to *context*. In other words, workforce development planning approaches cannot be considered independent of their political, social and economic environments. Superior data collection systems (in workforce planning terms) may ultimately be hamstrung by political or labour market policy environments which are not responsive to the insights available. Hence, the following country summary describes the context in which each nation or region was chosen, and the key lessons they can provide to assist in improving the way data is generated and used in workforce development policy and practice in contemporary Australia

#### United States of America

The United States of America (USA) was founded as a nation of states and, as a result, has historically had less national co-ordination of policies and programs than most other nations. In a nation of over 300 million people with this history, the US has a fragmented and decentralised labour market, with skills and workforce development policies and practices matched to this. In comparison with international comparators, this approach offers both risks and strengths, and it is for this reason that any study of data use in workforce planning includes a focus on the USA's pockets of excellence with significant lessons for Australia.

The USA produces superb data for manpower planning via the Bureau of Labour Statistics, but its institutional arrangements mean it has limited capacity to usefully deploy this information consistently. There are, however, excellent examples of highly innovative and effective planning for workforce development at both the state and local level. One such example of these are regional partnerships, or *sustainable skill ecosystems (SSEs)*, (Finegold, 2011), involving government and private sector, along with education providers, investors, and non-profit organizations. These partnerships involve stakeholders working towards a common local goal of fostering the development of systems that drive innovation and accompany job growth. Whilst few formal evaluations of sustainable skill ecosystems have been conducted, clusters of this sort offer promising examples for excellent planning for workforce development.

Finally, the USA's National Academy of Sciences is conducting some world leading blue sky research into the changing nature of work. As part of this project, academic thinkers meet regularly to consider possible futures for work, and more specifically the nature of occupations. One such examination tentatively concluded that it was possible that computer abilities could substitute for human abilities in occupations that currently employ 60 percent of the national workforce in 2030 (Elliott, in Hilton, 2008). Whilst not meant as a definitive prediction about America's future workforce, such data collection and analysis has the potential to significantly assist US policymakers to better plan for future workforce development.

#### United Kingdom

The UK is a highly informative case study, as it has a long history of experimentation with regard to skills planning which has explored both narrow (headline labour market indicators) and expansive (skill utilisation) notions of workforce and workforce development planning. This provides a rich set of experiences, accumulated over 25 years of skill and training policy experience, from which Australia might draw to inform and extend its own model for workforce development planning.

The UK's Office of National Statistics produces excellent national data for workforce planning. This data is supplemented by two employer and one employment relations national surveys: the Employer Perspectives Survey (EPS), the Employer Skills Survey (ESS) and the Workplace Employment Relations Survey (WERS). WERS collects data from employers, employee representatives and employees in a representative sample of workplaces. The main objectives of WERS are to map workplace employment relations in Britain and changes over time, but they also collect information on how learning and training activities are undertaken in the workplace. WERS is particularly successful because it allows an understanding of conditions at the firm level, which means that labour market data sets are informed by drivers of productivity.

The UK has recently embarked on some blue sky research, via the UK Commission on Employment and Skills' (UKCES) Labour Market Information Forum. In a process similar to the one Skills Australia is currently undertaking, the UKCES has gathered leading academics to generate thinking to promote better data collection and dissemination about skills in the UK. One key recommendation from the Forum concerns the importance of promoting labour market information to individuals making decisions in the labour market about their own individual training goals. This assumes that the more well informed that individuals, employers, training/education providers and policy makers are about the labour market, the more effective their actions and decisions are likely to be in producing better workforce development.

The UK has demonstrated a willingness to encourage and foster an open and dynamic workforce planning approach. State collected statistical information is widely circulated, and stakeholders and academics participate openly in debates surrounding workforce planning. However, this flexibility and openness has also resulted in what might be described as 'policy churn' by its national governments, and has recently abolished its regional skills bodies. This has resulted in instability in skill formation and a lack of coherence in approaches to workforce development, and has reduced the ability of countries to take advantage of the UK's outstanding national data to create successful planning for workforce development.

## **Singapore**

Singapore is a small nation located in the Asia Pacific region with a population of just over 5 million people (Statistics Singapore, 2011). In the context of comparative workforce planning research, analysis of approaches to workforce development in Singapore is potentially informative to the Australian experience for two reasons. Firstly, the formation of the formal training system in Singapore and the structures and agencies underpinning competency structures have been deeply informed by both the UK and Australian training models (Sung, 2010; Willmont, 2004; Willmott, 2011), but have been adapted to suit the needs of the Singaporean economy. Secondly, the way in which workforce planning has been undertaken is heavily state led and highly integrated, and this represents an interesting contrast to the more fragmented (less integrated) processes of planning which are argued to underpin Australian workforce development at the present time.

In contrast to the US and UK, Singapore does not have a central statistical agency responsible for the collection of labour market data to conduct workforce planning. Rather, workforce planning is conducted in two 'orbitals', controlled by groups of Ministries and subsidiary government authorities. The Ministry of Education, Ministry of Trade and Industry and, to a lesser extent, the Ministry of Manpower are responsible for data collection for *pre-employment training*, whereas the Singapore Workforce Development Agency and the Ministry of Manpower are responsible for data collection regarding *continuing education and training*. Planning for workforce development is also heavily state led, largely occurring in unison with multinational corporations and trade unions, in response to a clear need in the Singaporean economy. Singapore's Workforce Development Agency has recently established the Institute for Adult Learning, which aims to have a focus on blue sky research in this area.

Hence, in stark contrast to the approaches in the US and UK, the geographically small nation of Singapore's 'top down' and centralised approach functions in the absence of any regional initiatives, and largely independently of nongovernment bodies. This allows Singapore's workforce planning regime to be clearly defined by economic priorities – which in turn are settled in negotiations with the investment decisions of large multi-national companies.

## **Norway**

Norway was selected for inclusion for four reasons. First, like Australia, a large part of Norway's foreign earnings come from the export of raw materials, primarily oil but also a significant amount of agricultural output. Second, it has managed its resources boom far more successfully than Australia. The oil sector flourishes without destabilising other parts of the labour market. Third, Norway has used a large slice of its growth dividend to actively promote 'lifelong learning', and has noted success with its international educational standards. Fourth, all this has been achieved in the context of strong productivity growth, delivering amongst the highest living standards in the world and constantly having one of the lowest unemployment rates in the world.

Statistics Norway is the central state agency responsible for collecting data for workforce planning, and it conducts projections on the basis of this information. However, the state does not try to unilaterally determine priorities from this data, but nor does it devolve responsibility to the market. Rather, it is used primarily by agencies such as the Education Ministry to run campaigns encouraging student choice.

Norway's regime is nestled within a framework of lifelong learning for citizens – a framework that has in recent times given greater control to a 'generalist' as opposed to 'vocational' notion of education. Norway's most recent innovations have involved greater recognition and support for workplaces and enterprises as sites of learning for general education, such as literacy, as well as technical education.

In Norway, data from Statistics Norway is supplemented with a biannual employer's survey about skills needs and what they are able to offer in terms of apprenticeship places. Norway also conducts workplace learning intensity surveys, seeking information about how actively workplaces are contributing to the country's training and workforce development effort. Data on workplaces learning is used by local tripartite vocational training boards to advise on what course local schools should offer to help complement these opportunities for on-the-job learning. Workplace data is also used by local Training Agencies/Training Circles with apprentices, providing services to collectives of employers in a district.

Norway's National Innovation Authority also funds cluster based initiatives, where groups of companies and education providers are encouraged to work together to generate the skills required for sustainable economic growth. In contrast to other nations examined, Norway's strong promotion of learning has led to superior planning for workforce development. As a direct consequence, Norway's resources boom has evolved in the complete absence of skill shortages, and Norway continues to enjoy strong economic successes.

### **Possible lessons for Australia**

The collection of quality data alone does not promote excellent planning for workforce development. Quality information must be acted upon. International evidence demonstrates strong value in national level instruments that allow projections of general trends and some consideration for sectoral level scenarios. Dimensions of workplace level experience should be incorporated into national data collection. This kind of information needs to be supplemented at the local level with quite specific quantitative and qualitative information. Critically, international lessons suggest that whilst quality data collection should be promoted, inappropriate data collection should be actively discouraged.

Quality data must be subject to robust *analysis, interpretation, dialogue and dissemination*. Data should be disseminated with the goal of promoting 'adaptive capacity': the ability of individuals to exercise and develop skill adaptation, and the ability of business units to adapt and drive larger scale shifts in skill adaptation. In large nations with diverse regional economies, this appears to work best with working regional or occupational clusters, or sustainable skill ecosystems. Countries that have actively challenged prevailing assumptions, such as those underlying skill shortages, have thrived. Successful states do not rely on solely 'state led' or 'market based' approaches when using data to plan for workforce development.

There are striking similarities between nations in successful examples of planning for workforce development. Essentially, the preconditions for effective coordination require:

- (a) a strong degree of shared understandings throughout the system about priorities; and
- (b) clear roles played by agents at different levels of the system.

Typically, national authorities work best on analysing and settling longer term priorities in light of understanding general forces shaping change, and fostering stakeholders to work together. In contrast, local and sectoral authorities work best in complementing this with more specific, detailed analysis of short run skill requirements in particular localities and sectors. The design of these local or sectoral authorities is often in the form of a network, which draws in information and innovation from a wide array of sources. Networks can be inclusive or exclusory, primarily productivist in orientation or primarily educational. Within a democratic society there would be likely support for a workforce development regime that is inclusive, productive and educational in nature, however, the type of regime that prevails is ultimately a matter of policy preference and politics.

The case studies reviewed in this report demonstrate strong value in providing realistic and clear categories for analysis of workforce development planning. The experience overseas shows that stakeholders need to be well defined, and the terms of engagement with stakeholders need clarification and acceptance among all parties. Skills Australia has a charter to broker a new settlement. The approach to workforce planning it promotes needs to take account of these factors if it to consciously formulate a more coherent approach to workforce planning in Australia.



# INTRODUCTION

## AIMS AND RESEARCH QUESTIONS

Skills Australia has commissioned the Workplace Research Centre to write a synoptic international literature review to advise on how Australia can conduct better workforce planning for the nation's future. This report seeks to offer much needed conceptual clarification around the issue of workforce development planning. For this reason, the report should not be regarded as a definitive re-count of statistical approaches to workforce development internationally. Instead, the report seeks to identify guideposts that might frame a future, and more detailed examination or methodological review of workforce development planning instruments and processes going forward.

The report has set out to assist Skills Australia achieve the following:

- To identify international best practice examples of data collection on workforce development that feed into policy strategies;
- to identify international best practice examples of collaboration of agencies responsible for workforce development, focussing on transparency and sharing of data; and
- to identify international best practice examples of integrated architectures for regional, state and national workforce development frameworks.

Analysis of workforce planning strategies (as opposed to workforce planning per se) is relatively under researched. Indeed, workforce development planning is not a topic on which there is an extensive academic or even applied research literature. Hence the review examined literature, policies, developments and initiatives in planning for workforce development in four selected countries. These four countries, which were selected on the basis that they could provide examples from which Australia has the most to learn, are:

- the United States of America (USA);
- the United Kingdom (UK);
- Singapore; and
- Norway.

This report applies the taxonomy described by Buchanan and Evesson (2008) to analyse the international approaches studied. Buchanan and Evesson (2008) have noted 'planning' concerning workforce development takes at least two distinct forms – the production of workforce projections, and planning for workforce development. Specifically, the researchers argue that the majority of workforce planning processes are distinguished by two main approaches:

### (a) Production of workforce projections

In the production of workforce projections process, also referred to as 'manpower planning', the focus is on making projections about specific labour requirements over specified time periods. More often than not this involves using statistics and quantitative modelling to provide projections designed to provide guidance concerning the likely changing skill (commonly defined as qualification) requirements of the economy. We refer to this as 'workforce planning' or the 'production of workforce projections.'

### (b) Planning for workforce development

The second approach, described here as planning for workforce development, recognises that a more complex and lateral approach to understanding and projecting labour needs is

required. Planning for workforce development incorporates a focus beyond data collection around standard labour and skill categories (e.g. occupation), and seeks to understand the forces driving change, and how policy might directly engage with these forces to develop the workforce in a sustainable way.

It involves the systematic use of information and analysis to help design and inform institutional arrangements that allow labour market actors to respond effectively to changing circumstances. The central aim is to inform and help arrangements associated with the development and use of skills adapt to new demands and requirements. Indeed, coherent planning here can actively help shape the nature of skills demand as well as its supply.

This report adds a further category of analysis to Buchanan and Evesson's (2008) taxonomy – blue sky research. Evidence collected highlighted the significance of nations undertaking speculative planning for workforce futures, and the role of this research in generating better quality policy.

It is important to note that Buchanan and Evesson's (2008) distinction does not just apply to different arrangements within countries. Different international agencies vary in their preferred approach to workforce development planning. The Commission for the European Union, for example, has recently released some very comprehensive workforce projections as part of its assessment of Skills Supply and Demand in Europe (European Centre for the Development of Vocational Training, 2010). Recent work by the International Labour Organisation (ILO), however, has shown greater interest in grappling with how best to plan for workforce development (ILO, 2010). The emerging Organisation for Economic Co-operation and Development (OECD) Skills Strategy is also placing more emphasis of planning for workforce development than spending much time generating workforce projections (OECD, 2011).

In light of this, the research questions have been thus defined:

### **Primary Research Question**

- What are the current approaches to generating workforce projections and planning for workforce development in the United Kingdom, United States of America, Singapore and Norway?

### **Allied Research Questions**

- What are the key and common sources of data that are used for planning for workforce development in that nation and how is the data used, analysed, published?
- Who uses this data and what for what purpose?
- Are there common principles relating to data collection and analysis from which we could learn?
- How do regions and specific industry sectors ensure their specific conditions and requirements are reflected in national approaches to planning for workforce development?
- How do the various stakeholders work together in the planning for workforce development?

- What seems to work and what are the most common barriers faced in these countries and how are they overcome?
- What examples of innovative good practice could provide lessons for us in Australia

The methodology, described below, sets out to establish answers to these questions.

# METHODOLOGY

In order to answer the research questions, the Workplace Research Centre (WRC) undertook a synoptic literature and policy review of international best practice literature pertaining to workforce development planning.

Workforce development policy and practice are often embedded within a range of institutional arrangements. More often than not, the policy and practice cannot be separated from a host of wider social economic, labour market and educational structures. Partially recognising this, comparative vocational education and training (VET) research is typically focused on contrasting experiences within Europe (e.g. the United Kingdom or Germany) and/or comparing experience across large economies (the European Union versus the USA). However, literature that covers a continent or region is often unable to interpret the reasons for policy systems design within a local context. In contrast to this, the focus of this report is on four key countries of interest: the United States of America, the United Kingdom, Singapore and Norway. This focus allowed for a detailed examination of each nation's methods for workforce planning, and opportunities to glean lessons about the strengths and weaknesses of each, *in their specific national and regional contexts*.

These four country studies provide a brief, narrative account of the national context, and an examination of approaches to workforce projections and planning for workforce development. A simple cross case analysis summarising the key findings from is provided in Table 1. Given the paucity of published materials in this area, WRC supplemented this material with interviews with key informants in each region. This ensured the data gathered was contemporary and better understood in the relevant national or regional context.

Interviews (or detailed correspondence) were conducted with the following participants:

## *International:*

Francesca Froy, Senior Policy Analyst, Local Economic and Employment Development Division, Organisation for Economic Co-operation and Development (OECD)

## *United States of America:*

Professor David Finegold, Dean, Rutgers School of Management and Labor Relations

## *United Kingdom:*

Professor Ewart Keep, Centre on Skills, Knowledge and Organisational Performance (SKOPE) at Cardiff and Oxford Universities

Professor Lorna Unwin, Chair in Vocational Education and Deputy Director of the ESRC-funded Research Centre, Centre for Learning and Life Changes in Knowledge, Economies and Society (LLAKES) (via email only)

## *Singapore:*

Dr Gary Willmott, Visiting Research Fellow and Former Executive Director, Institute for Adult Learning, Singapore, Singapore Workforce Development Agency

Professor Johnny Sung, Principal Research Fellow, Institute for Adult Learning, Singapore Workforce Development Agency;

## *Norway:*

Anna Hagen Tønder, Research coordinator, Institute for Labour and Social Research (FAFO), Norway

Jonathon Payne, Senior Research Associate, Centre on Skills, Knowledge and Organisational Performance (SKOPE) at Cardiff and Oxford Universities

Sveinung Skule, Director, Foundation Nordic Institute for Studies in Innovation, Research and Education (NIFU STEP), Norway

# INITIAL CROSS CASE ANALYSIS

## UNDERPINNINGS OF WORKFORCE PLANNING STRATEGY: AN INTERNATIONAL COMPARATIVE TABLE

TABLE 1: An international comparative table to provide the basis for analysis.

	<b>Core statistical base?</b>	<b>Does supplementation to statistical base occur?</b>	<b>Overarching coordinating agency?</b>	<b>Strategic goals and workforce development emphasis</b>	<b>Role of VET – how characterised?</b>	<b>Is exploratory research encouraged</b>	<b>General comment</b>
Australia	Australian Bureau of Statistics (ABS), the independent and major resource for most government and industry-led analyses	Diverse. Multiple agencies (employers, union, state-based agencies and planning departments) run a wide range of labour market and workforce surveys for a range of purposes.	Skills Australia. Otherwise, there are fragmented and multiple agencies and departments involved in interpretation.	Strong focus on cultivation of knowledge economy.	Reactive (not proactive) to policy shifts in both welfare and industry, but effectiveness of these reactions questioned.	Yes. Strong research community and wider debate encouraged (NCVER, ACER).	A good base from which to improve.
Norway	Extensive core statistical collections overseen by Statistics Norway. Includes standard collections and advanced data	Considerable extra data is collected from a variety of agencies at various levels: <ul style="list-style-type: none"> <li>- Nationally (e.g. Regular employer surveys)</li> <li>- Social partners (e.g. LO – union federation)</li> <li>- Regionally (e.g. at county level)</li> </ul>	Not present. Historically there has been a major divide between apprenticeship + VET and Professional education + Higher Ed. Historically VET involved social partners, HE more	Goals vary at different levels and for different agencies. Ed Department likes classical workforce projection studies. VET players prefer general tendency information	There is very strong emphasis given to VET as part of an integrated education system – especially lifelong learning. In last two decades efforts have been made to integrate VET into general	Very strong tradition of evaluative and analytical research supported by large scale and long standing applied research centres (e.g. FAFO and NIFU) as well as	Norway collects a lot of data and conducts a lot of research. The information, however, informs a system where students still make the choices. Big mismatches between what employers interested in and

	collection e.g. learning intensity of workplaces.	extensive surveys to gauge local labour demand)	disconnected (except in Health). Attempt to integrate VET + General Ed has weakened social partners, but they still major player – primarily through national agreements on lifelong learning. Role of state varies for different sectors (e.g. the state is the primary player for HE but is increasingly dominant but not sole player for VET).	nationally and detailed statistics at the local level.	education – at expense of the vocational engagement with practice. New moves back to workplace education (e.g. huge new language and literacy program, delivered through workplaces.)	very active academic research with an applied bent.	what education delivers. This got worse with integration of VET into general education. Growing moves to revitalise VET – especially at level of quality workplace education arrangements. As such data best regarded as helping with system design and evolution and less with precise prescriptions of where money should go for particular skill needs. More systematic use of quantitative data in resource allocation at county level.
Singapore	No one central state agency. There is a division between data on 'pre-employment training' of school-leavers and	There is a growing presence outside government, but this is not yet sustained.	State led by three key agencies – the Ministry of Manpower, Ministry of Trade and Industry and the Ministry of Education.	Both high and low end skill development emphasis. High growth model (productivity based). Extensive structures to support displaced	Embedded in strategic planning and delivery, at all levels. High level government support for VET.	Historically strong, but not specifically in this area. Early indications this may be changing (the Workforce Development Board have a growing role in	Defined and heavily controlled by the central state, Singapore's data is accessible for central government planners and select industry and education providers, but not

	the 'flow' of labour into the labour market, and these data sets are collected by a range of government agencies.			workers – high level of government support for re-training and employment placement.		developing employer surveys).	workers, or civil society more generally. The low policy churn contributes to stability, and centralisation leads to high flexibility and responsiveness.
UK	Office for National Statistics (ONS), the independent and major resource for most government and industry-led analyses	Historically, diverse. In the last few years, increasing data leadership by core government agencies to co-ordinate these efforts. However, current national government has abolished regional agencies.	UK Commission for Employment and Skills (UKCES), a social partnership, led by Commissioners from large and small employers, trade unions and the voluntary sector.	More reflective environment emerging. Moving from emphasis on high training participation and 'high skill' workforce toward 'skill utilisation' considerations.	Is run and regulated by a variety of government agencies, and has historically not been a focus. Aspires to become a 'mainstream' part of UK Education system.	Yes, UKCES commission research to develop a labour market analysis function, with leading academics commissioned to write think pieces on sources of labour market information, and how it can be improved.	UK gathers considerable data but capacity for it to be utilised effectively is vitiated by high level of policy churn. That is, institutional capacity to link education and economic development is very weak.
USA	The Bureau of Labour Statistics, independent and internationally recognised as a major resource for most analyses.	Given the state based nature of the US, this is very diverse. Multiple agencies (employers, union, state-based agencies and planning departments) run wide range of labour	Fragmented-multiple agencies and departments involved in interpretation.	Patchy (state by state) but excellent regionally based examples of high and low skill ecosystems.	Considerable state variation in design, and priority. Majority of postsecondary VET is provided by proprietary (privately owned) career schools, with some input from two-year	Yes. Strong research community, developing a specific blue sky research program on the future of the workforce by the US National Academy of	US has huge amount of data but poorly linked to systemic policy innovation. There are, however, significant pockets of genuine innovation in the collection and use of data for



	Includes detailed predictive work.	market and workforce surveys for range of purposes. From government alone, ten different federal agencies, 27 sub-agency units and 73 programmes are involved in total.			community colleges, military technical training government-operated adult education centres.	Sciences. Wider debate strongly encouraged.	designing and delivering particular interventions (e.g. Ohio Data Dash Board, Lower Rio Grande initiative, New Jersey initiatives).
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# RESEARCH QUESTIONS ANSWERED

*Question 1: What are the key and common sources of data that are used for planning for workforce development in that nation and how is the data used, analysed, published?*

Three of the four nations, with the exception of Singapore, have publicly funded central statistical agencies that collect and disseminate standard data to aid the production of workforce projections, or manpower planning. Broadly comparable to Australia's Bureau of Statistics, these bodies collect labour market information that underpin an array of government and nongovernment decision making on workforce development. In addition to standard collections on topics such as employment, unemployment and underemployment, by industry and occupation, these bodies also conduct analysis of recent trends and labour force projections. Projections are especially strong in the USA and Norway, and are updated to reflect changes in national and international conditions.

Of these four nations, the US Bureau of Labour Statistics (BLS)<sup>1</sup> is most often cited as an authority, both within the United States and internationally, on data gathering and collection for workforce planning. The Bureau resides within the Federal US Department of Labor, and is responsible for measuring labour market activity, working conditions, and price changes in the economy. Amongst other collections, the Bureau tabulates:

- national, state and local unemployment rates;
- national, state, local and county employment rates;
- worker characteristics;
- job vacancies and turnover;
- occupational data;
- employment costs;
- wages (by area and occupation);
- earnings (by demographic and industry); and
- labour productivity and costs.

In addition to these collections, the BLS has longitudinal data spanning 40 years, and conducts considerable research into an array of labour market trends and movements. The BLS also conducts forecasting, by education and training category, occupation and industry. However, the fundamental risk of this approach is its accuracy of forward planning. As one interviewee noted, "... if your projections about the workforce from 2007 were correct, you'd have your own island somewhere." The inherent unpredictability of any workforce is apparent when examining the accuracy of past projections.

Whilst little has been written on Norway's workforce development systems of data collection, a huge amount of information is gathered and used in running the system. Norway's workforce projections are undertaken by Statistics Norway and, like the US, these generate projections of future labour demand and supply requirements. At the national level, these projections are very detailed (e.g. Bjornstad, Gjelsvik, Godøy, Holm and Stølen, 2010). There was some scepticism amongst those interviewed as to the value of this kind of work. As one noted:

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<sup>1</sup> <http://www.bls.gov/>

“the modelling is based on unrealistic assumptions.... for example it takes work organisation and the content of work as stable and projects trends for 30 years out.”

In analytical terms, the value of projections can only be assessed fully by evaluating the assumptions underpinning the projections. One interviewee highlighted the implications of this, by using Norway as an example. After the domestic (Norwegian) categories for unskilled and skilled labour were converted to the international (OECD) standards, the projected domestic demand for unskilled labour grew from three to eighteen per cent in a very short time period. Such variation in projections highlights the often arbitrary nature of projection-based analysis, and the need for local variation and context to be considered closely in the adaptation or introduction of new methods of projection.

Like the United States, the United Kingdom's Office for National Statistics (ONS<sup>2</sup>) collects similar information to the BLS, but does not conduct labour projections. Rather, the ONS places a priority on describing, developing and comparing the key concepts that should underpin labour market data collection, and ensuring that these conceptual categories continue to accurately reflect the changing state of the labour market. This framework and approach is endorsed by the International Labour Organisation (ILO). ONS also produce specific labour market data that is disaggregated by region, and that significantly assists local workforce development efforts.

Singapore differs slightly from these national statistical agency models, with two orbits of labour market planning, controlled by groups of Ministries and subsidiary government authorities. One orbital relates to 'pre-employment training' of school leavers exiting Institutes of Technical Education, polytechnics and universities. This is shaped by the Ministry of Education, Ministry of Trade and Industry and, to a lesser extent, the Ministry of Manpower. This is about the 'flow' of labour (about 50,000 per year) into the labour market. The other orbital relates to continuing education and training, which is directly the concern of the Singapore Workforce Development Agency (WDA) and the Ministry of Manpower. Singapore's WDA works with industry bodies and the National Trade Union Congress to assess labour market and training needs – or 'stock' in the market. Interviewees noted these two systems of labour market planning and skills formation are not sufficiently interconnected. Whilst this approach is bureaucratically more complex, there is considerable integration of the data from differing agencies regarding manpower planning.

In addition to manpower planning, each nation also conducts supplementary surveys, to a greater or lesser degree. Often cited as the gold standard approach, the UK Commission for Employment and Skills (UKCES) conducts two national employer surveys, the Employer Perspectives Survey (EPS) and the Employer Skills Survey (ESS) and a national employment relations survey, the Workplace Employment Relations Survey (WERS).

The Employer Perspectives Survey looks at UK employer's perceptions of and interactions with the UK skills and employment system. Topics include engagement with business support services, recruitment services, skills and training initiatives and organisations, Apprenticeships, and Investors in People. In contrast, the Employer Skills Survey looks at employers' processes of recruitment and retention problems, demand for skills, skill gaps, workforce development and training, and business strategy and structure. The ESS is interested in internal employer practices - how employers organise, train and recruit.

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<sup>2</sup> <http://www.statistics.gov.uk/default.asp>

In England, the National Employer Skills Survey for England (NESS) was jointly run by the UKCES and the Learning and Skills Council in 2009; prior to this, it was run by the Learning and Skills Council in 2003, 2004, 2005, 2007 and 2009. In 2009, the survey sampled over 79,000 employers, and is disaggregated by sector and by region. From 2011 the UKCES will conduct ESS as a single, comparable, UK-wide employer skills survey.

Additionally, the UK conducts the Workplace Employment Relations Study (WERS), a survey of employment relations in Britain. WERS collects data from employers, employee representatives and employees in a representative sample of workplaces. The main objectives of WERS are to map workplace employment relations in Britain and changes over time, but they also collect information on how learning and training activities are undertaken in the workplace.

The information collected in WERS comes from three distinct sources:

- A random probability sample of workplaces in which face-to-face structured interviews are conducted with the most senior manager responsible for employment relations and personnel issues. In each workplace a self-completion questionnaire is distributed before the interview to collate information on the basic characteristics of the workforce, and a second questionnaire is left at the end of the interview to assess the financial performance of the workplace.
- Survey interviews are undertaken in the same workplaces, with one trade union employee representative and one non-trade union representative, where present.
- A self-completion survey with a representative group of up to 25 employees, randomly selected from each workplace participating in the survey.

Similarly, significant qualitative information complements Norway's quantitative material to inform how government (and in VET tripartite) bodies plan for workforce development. At local level tripartite boards generate and use statistical data especially that collected from employers to help make decisions about resource allocation. In addition to data on vacancies collected by training authorities the Norwegian Labour Ministry conducts surveys of local labour market conditions twice year to help with understanding the changing contours of labour demand. Specifically, employers are surveyed every six months about their skills needs and what they are able to offer in terms of apprenticeship places. These data are used by local tripartite vocational training boards to advise local schools on what courses to offer to help complement opportunities for on-the-job learning. The data are also used by local Training Agencies / Training Circles, which are Group Training organisations that handle the administrative and planning issues associated with apprentices and provide such services to collectives of employers in a district.

In addition, Statistics Norway conducts an annual or biannual survey of 'workplace learning intensity'. This sheds light on how actively workplaces are contributing to the country's training and workforce development effort.

### **Blue Sky Research**

In addition to all these data collections, there is an emerging trend for nations to undertake blue sky research in the field of workforce development. Currently, this trend is most advanced in the United States as a result of the work of the National Academy of Sciences (NAS)<sup>3</sup>. The NAS is an honorific society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their

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<sup>3</sup> <http://www.nasonline.org>

use for the general welfare. With interests in a range of innovative areas, the NAS convened a group to examine future skills demands.

This group was convened with participants from a range of disciplines, and included discussion on diverse topics, including but not limited to the impact of robotics on a future American workforce. Whilst speculative, thinking in this space is novel, and has the potential to have significant ramifications for future workforce planning.

In a recent summary of the group's meeting, *The Changing Nature of Work: Implications for Occupational Analysis*, the authors (Committee on Techniques for the Enhancement of Human Performance: Occupational Analysis; National Research Council, 1999) argue that any examination of the workforce must also examine the future nature of work itself. This understanding is critical to informing the workforce about their choices, in order to improve the functioning of the labour market.

The group settled on four key themes that are critical to any robust attempt to plan for workforce development:

*“Three concern increasing heterogeneity of workers, work, and the work-place, and the fourth focuses on the need for a systematic approach to understanding how work is changing.*

*First, the workforce is becoming more diverse with respect to gender, race, education, and immigrant status; these changes appear to have resulted in greater heterogeneity within traditional occupational categories.*

*Second, the boundaries between who performs which jobs and the employment outcomes and experiences of individuals working in different occupations are becoming more fluid. The evidence suggests that both military and civilian organisations are using a wider variety of workers and skills to accomplish their goals.*

*Third, the range of choices around how work is structured appears to be increasing, and these decisions are interdependent.*

*The fourth and final theme flows from this interdependency. The notion that decision makers' responses to changing markets, demographics, and technologies, the human resource policies and systems employed in organizations, and the work structures and outcomes they produce for organizations are interrelated leads to the need for an integrated, systematic approach to understanding how the context of work is changing and the implications of these changes.” (Committee on Techniques for the Enhancement of Human Performance: Occupational Analysis; National Research Council, 1999, p 4).*

In a further paper organised by the NAS – *Research on Future Skill Demands: A Workshop Summary* - Elliott (in Hilton, 2008) describes the two main elements of his proposed approach to answering questions about the future of the labour market as follows:

- examining computer capabilities through the lens of human skills, using O\*NET, a computer simulation of skill to develop a taxonomy of human skills; and
- using the current research literature in computer science to predict future computer capabilities.

His overall projection is that computer abilities could substitute for human abilities in occupations that currently employ 60 percent of the national workforce (see Table 2).

Table 2: Projected displacement of the 2004 US workforce by computers in 2030, by major occupational groups.

Major Occupational Group	Percentage of Total Employment	Percentage Displaced Within Group
11-0000 Management	6	41
13-0000 Business and financial operations	3	32
15-0000 Computer and mathematical science	2	21
17-0000 Architecture and engineering	2	11
19-0000 Life, physical, and social science	1	10
21-0000 Community and social services	2	36
23-0000 Legal	1	6
25-0000 Education, training, and library	6	74
27-0000 Arts, design, entertainment, sports, and media	2	50
29-0000 Health care practitioners and technical	5	10
31-0000 Health care support	2	29
33-0000 Protective service	2	16
35-0000 Food preparation and serving related	8	88
37-0000 Building and grounds cleaning and maintenance	4	78
39-0000 Personal care and service	3	81
41-0000 Sales and related	11	93
43-0000 Office and administrative support	17	90
45-0000 Farming, fishing, and forestry	1	43
47-0000 Construction and extraction	5	39
49-0000 Installation, maintenance, and repair	4	12
51-0000 Production	7	53
53-0000 Transportation and material moving	7	64
TOTAL	100	60

NOTE: This table projects the portion of 2004 employment vulnerable to displacement by computers given the current skill sets used in each major occupational group. It does not reflect changes to employment that might occur from restructuring occupations toward higher level skills.

Source: Elliot, in Hilton, 2008, p. 50.

Whilst this data is hugely speculative, and the methodology is far from refined, such attempts at blue sky research are a significant aid to planning for future workforce development.

Singapore is also good at fostering blue sky research, and has a strong history of funding blue sky innovation. The latest incarnations of this are the twin Government funded research hubs, known as the Biopolis and Fusionopolis<sup>4</sup>. These centres focus on biomedical and engineering research, respectively, and operate under the auspices of the Agency for Science, Technology and Research (A\*STAR). Whilst neither centre focuses on social, economic or workforce development research per se, they generate considerable knowledge on a wealth of topics and have the capacity to focus their capacity to problems facing Singapore, should they be required to do so.

More specifically, in 2008 Singapore's Workforce Development Agency recommended the establishment of the Institute for Adult Learning to promote better continuing education and training<sup>5</sup>. The goal of this Institute is to enhance the capabilities of Singapore's adult educators by establishing professional standards for design and delivery, and inculcating skill sets to broaden and deepen their expertise. Funded by the Singapore Workforce Development Agency, the Institute works with key stakeholders, including adult educators, business leaders, managers, and policy makers, to shape and develop the continuing education and training sector.

The Institute offers adult educators formal and informal learning platforms, networking and collaboration opportunities, as well as sharing of knowledge and expertise. It also creates networks between local adult educators and organisations and practitioners and institutions. It also provides advisory services to training providers and in-company trainers. The Institute undertakes experimental approaches to continuing education and training design and delivery, and advocates for their adoption. In order to do this, research is undertaken through partnerships with local and international researchers and institutions on areas including learning, skills and innovation.

Singapore has always prided itself on the size of its investment in blue sky development, relative to its size, and the Biopolis and Fusionopolis are the leaders in this approach. The Institute for Adult Learning offers more potential for significant development in the workforce development space, however, and it not matched by any Australian equivalent.

**Recommendation 1: Australia's national agency for data collection, the ABS, collects high quality data that is sometimes used for generating projections of likely labour demand and supply. However, this information could be usefully supplemented by:**

- a) national large scale employer surveys like those conducted in the UK, and
- b) blue sky research on Australia's future economic development, similar to that run by the US National Academy of Sciences.

*Question 2: Who uses this data and for what purpose?*

Given the significant constitutional, political and geographic differences between the four nations selected, it is impossible to accurately compare the ways in which the data is utilised in isolation from its socio-political context. Whilst the data is relatively standardised, understanding of the users and purpose of the data requires a grasp of the workforce development regime and settlements.

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<sup>4</sup> <http://www.a-star.edu.sg/tabid/860/default.aspx>

<sup>5</sup> <http://www.ial.edu.sg/Main.aspx>



For example, the US, as the most fragmented of the four nations, has a correspondingly fragmented approach to data use. Multiple agencies (employers, union, state-based agencies and planning departments) run and utilise a wide range of labour market and workforce surveys for range of purposes. As the OECD have noted in a recent report on workforce development (Froy and Giguère, 2010), in the government alone, the responsibility for US economic development policy is shared by ten different federal agencies, 27 sub-agency units and 73 programmes (see Table 3 below).

Table 3: The structure of US agencies with responsibility for economic development.

	Employment Policy	Vocational Education	Regional/Economic Development
National	<p>US Dept. of Labor</p> <p>Employment and Training Administration (ETA)</p> <p>US Dept. of Health and Human Services</p>	<p>US Dept. of Education</p> <p>Office of Vocational and Adult Education</p> <p>Office of Postsecondary Education</p>	<p>US Dept. of Commerce</p> <p>Economic Development Administration</p> <p>Small Business Administration</p> <p>US Dept. of Agriculture</p>
Regional	<p>Regional ETA offices</p>	<p>Regional offices</p>	
Sub-regional	<p>State agencies</p>		
Local	<p>Local Workforce Investment Boards; Locally elected officials; Local authority; local county welfare offices, <i>inter alia</i></p>	<p>Local educational agencies; Area Vocational Schools; Postsecondary Institutions; Educational Service Areas; Community Colleges; Accredited Institutions of Higher Education, <i>inter alia</i></p>	<p>Local Govt. Agencies; Semi-autonomous Economic Development Corporations; Local Colleges; City and county agencies; Local development districts, <i>inter alia</i></p>

Source: Froy and Giguère (2010)

Given this, there is considerable high level data used by government agencies, whereas local level and state data is more commonly used by training authorities and local workforce development coalitions/partnerships. There is a distinct lack of integration of these two types of data and, more generally, a lack of federal co-ordination with respect to all data use.

Regional partnerships, however, often involving employers and education/training institutions, provide examples of highly successful attempts to improve local economic development, and to successfully plan for workforce development. Indeed, US researchers Finegold and McCarthy (2010, in Finegold, Gatta, Salzman and Schurman, 2010) argue that the ‘third way’ in skills policy - between reliance on free markets and the government itself – is to be found in sustainable skill ecosystems. These regional partnerships, involving government and private sector, along with education providers, investors, and nonprofit organizations, are designed to foster the development of sustainable skill systems that drive innovation and accompany job growth. Whilst these approaches are largely

unevaluated and have been implemented in a patchy fashion in the US, they offer the promise of a gold standard for planning for workforce development.

Similarly, the UK's approach to data use is fragmented, and highly subject to ongoing policy and institutional churn. Historically, the UK's approach to workforce planning could be described as very 'open', but highly 'contestable'. For more than twenty five years, researchers and policy makers have been able to access a wide range of data and information sources on the labour market, collected and disseminated by government agencies, and other stakeholders. Employer organisations, unions, government bodies and researchers have sought to either commission and/or develop their own surveys and instruments which will increase the body of knowledge on the labour market and training participation. Historically, this open and contestable environment of skills planning in the UK has been described in the following way:

*“there is a wealth of labour market information, but limited intelligence, with the focus tending to be on the collection of statistical data at the expense of analysis, interpretation, dialogue and dissemination” (UKCES 2010, p 2).*

Keep (2011) and others (Belt and Kirk, 2010) note, this has culminated in the UK having “too much data”, which is inconsistent and incoherent. As Keep notes “in contrast to other countries, the UK had a wealth of information but a dearth of intelligence” (personal communication, 2011).

In the last five years however, the government has sought to achieve greater synergy between data collections dealing with the labour market and training. This consolidation has occurred in two ways. Firstly, the government has sought to ensure that national collections on both skills and employment data are robust (e.g. the National Employer Skills Survey and UK wide Labour Force Survey). Secondly, the government has sought to deepen the analysis associated with these collections, by exploring the sectoral nature of skill development, and thereby strength the capacity to forecast at the occupational, regional and national level (e.g. UK Employment Forecasts). This sense of exploration is also present in the work of leading academic institutions, which are active in the policy debate on these issues (e.g. Learning and Skills Commission, SKOPE (Oxford and Cardiff Universities) and LLAKES (London University)).

Additionally, the UK Commission for Employment and Skills has undertaken a process that mirrors the current process being undertaken by Skills Australia. In this approach, governments and/or key agencies can offer leadership on the question of methodological rigour and workforce planning, while still encouraging debate amongst core commentators and stakeholders. In order to improve labour market intelligence, the UK Commission for Employment and Skills (UKCES) has established a Labour Market Information Forum. This Forum invited five academics to document and define one key problem facing the UK's approach to data collection on the labour market. These contributions were then analysed to identify the key conceptual and operational implications. Three core themes were identified by this analysis as requiring methodological and policy redress: labour market information; quality improvement; and key measurement groups.

#### Labour market information – how should it be used?

Within the labour market information category, the need to map, co-ordinate and signpost core data collection resources was identified. UK research identified that a central point of information was needed, in order to facilitate use of the data by individuals, rather than just the producers of the data. As Belt and Kirk highlight,

*“First class labour market information has real value to the efficient functioning of the labour market. The more well informed that individuals, employers, training/education providers and policy makers are about the labour market, the more effective their actions and decisions are likely to be” (2010, p 2).*

### How can quality improvement be achieved and maintained?

On the issue of quality improvement, a number of issues are raised by the UK experience. The need to address the declining response rates typically associated with long standing surveys (i.e. survey fatigue) has been identified as a core challenge. As the UKCES notes, there is *“little coordination between survey sources...”* yet *“harmonisation”* of these sources is critical (UKCES, 2010, p 3). The UK experience demonstrates that better coordination of surveys and a reduction in survey duplication can present a possible solution. In the case of the UK, this consolidation of data resources has been resolved by the government assuming oversight of these activities, with key departments assuming authority and/or supervision over data production. Whilst Australia does not have the wealth of data, it could learn from the UK’s experiences if and when it chooses to establish such collections.

### How should measurement occur – what are the key groups for measurement?

Labour market data sets, while informative as broad demographic and population instruments, offer little insight on workforce planning and development, unless they incorporate and consider drivers of change. As Keep (2008) notes, it is critical that labour market data sets are informed by drivers of productivity, and this can only be informed by understanding conditions at the firm level. In other words, understanding conditions at the workplace level (e.g. human resource management, innovation policy, local workplace practice) is critical and must inform the collection of, and interpretation of workforce development or planning data. The experience of the UK also suggests that notions of skill and labour supply require significant expansion as both conceptual and policy concepts. As Keep notes *“traditional skills policies, centred on simply boosting skills supply are gradually crumbling”* (2008, p 2).

Finally, historically in the UK there has been a significant take up of data at the local level, with some examples of excellent and systematic initiatives (e.g. the Manchester case study, cited below) planning for workforce development. However, with the election of a conservative government in 2010, one interviewee noted that the government has set about to abolish regional workforce development agencies. This step is seen as regressive in the push to better plan for workforce development, as it is likely to hurt the significant local progress that many regions had made. This British example highlights the problems with policy churn experienced in liberal democratic countries more generally.

In contrast, the Singapore experience has been characterised by remarkable policy stability and centralisation. Whilst responsibility is spread across multiple bureaucracies, planning for workforce development is embedded in nation building and planning for economic development. This can be better understood, as with all nations studied, in the context of the unique historical, political and economic conditions at work within the country. Singapore is a small country in both population (currently 4.2 million) and geographic terms, and has limited natural resources. For these reasons, only national (not regional) planning processes exist. The size of the country is important to discussions of workforce planning for two reasons. Firstly, the small population means that sectoral shifts, even small ones, can have a significant impact on the country’s overall economic performance. Secondly, the country has relied heavily on the attraction and maintenance of foreign investment, and particularly large scale projects, to fuel economic growth. This means that very specific and

highly controlled workforce planning processes have been required in order to manage and address these two core issues.

Coordination between Singapore's key departments allows the government to intervene in the economy in a direct way, and to take measures to strengthen the economy, in skill terms, at strategically important and critical times. The collapse of the electronic sector represents a good case in point.

*"There is a lot of foresight in the design processes associated with Singapore's approach because it facilitates skill recovery...it allows them to look forward after the downturn and toward growth. An example is the situation in electronics. After the downturn, the sector was decimated and people were being reduced from five days work down to 2 days. Instead of the sector facing widespread retrenchment, or being reduced to only a few hours of work a week, the highly coordinated and controlled approach in Singapore allowed people to work 2 days and were fully supported and paid to commit the other three days to training. This kept the skills up to date so that when the sector began to recover, no skills had been lost and recovery occurred more quickly overall, when allows skill development, and recovery after a period of downturn, more effectively... There is a huge pot of money put into the endowment fund here for lifelong learning. This means that money is available to provide training" (personal communication, Interviewee, 2011).*

These interventions are made possible by the extensive level of direct government investment in training and skill development.

*"This is all founded on an approach in which education funding is extremely generous...much much more generous than I have seen elsewhere...a huge amount of government investment".*

*"The government provides 70-90 per cent of all training, which covers almost 24 sectors of activity. Given this situation, employer buy in is substantial" (personal communication, Interviewee, 2011).*

Notably, whilst there is significant sharing and use of data within the government, and between government and selected multi national corporations, this culture is not prevalent more broadly. Singapore's lack of freedom of information laws and culture of 'keeping its cards close to its chest' was repeatedly noted by interviewees as hindering information sharing between government, employers and those seeking employment.

Finally, Norway is characterised by strong and inclusive social partnerships, with visions of lifelong learning, and this is reflected in its use of data. Norway's population is approximately the same size as Singapore, but spread over a vast geographic area. As a matter of public policy the country has pursued a conscious strategy of economic diversification and promoted growth in regional areas. It has a long tradition of Labour governments that have established tripartite mechanisms for advice and overseeing administration at national and sectoral levels, as well as in the 19 counties. There is a very strong notion of *inclusive citizenship* with an advanced welfare state providing the setting within which an active policy of promoting life-long learning has been pursued for many decades.

In Norway, data collection and policy direction more generally has been developed and changed through active negotiations between employers, unions and governments. All these parties have presided over the emergence of active use of data at all levels, including active contestations over relevance of workforce projections. Partnerships undertake

systematic evaluations that lead to evolutionary reform of institutional arrangements, and actively use quantitative estimates at local and national levels to shape their decision making.

In summary, it is clear that the broader national approach to governance is highly correlated with how data for workforce planning is used, and for what purpose. Whilst the US and UK have an abundance of quality data, there are systematic socio-political constraints to their universal adoption. Both have large and diverse populations, and the United States' fragmentation of governance, and the United Kingdom's policy churn, are significant contributors to these constraints. Successful examples arise only at a local level, when there is significant freedom for local authorities to act in collecting, collating and making policy decisions on their own approaches to workforce development. In stark contrast, with smaller populations, both Singapore and Norway have strong national approaches to the utilisation of data (albeit with very different approaches to the inclusion of social partners outside government). Both these approaches are reported to be more consistently successful than either the US or the UK, but Norway's embrace of regional data collection, transparency and active partnerships with industry and unions has a sustained history of success with respect to planning for workforce development.

**Recommendation 2: The experience of the UK and the USA highlights that simply having good quality data does not mean information is constructively and efficiently used for workforce development planning purposes. Improvements in workforce planning therefore require as much attention being devoted to establishing mechanisms and arrangements that ensure the sound use of data as do settling priorities on broadening and deepening the issues on which data are collected.**

*Question 3: Are there common principles relating to data collection and analysis from which we could learn?*

### Data Collection

Australia has long followed international standards in the collection of labour, education and related statistics. This allows for robust international comparisons, and there are few lessons offered internationally on how to improve this data collection. There is, however, a growing interest in getting data on and for employers and the workplace. As discussed, this is most advanced in the UK and Norway, with extensive and rigorous surveys of employers and workplaces now being systematically conducted. This data collection, when properly mapped and reported for individual consumption, has the potential to be a powerful force in shaping the labour market to aid approaches to planning for workforce development.

### Data Analysis

Trends in data analysis are diverse, and cannot be viewed in isolation from a nation's socio-political context. However, as cited previously, there is general agreement that the estimates produced by national manpower predictions are highly contestable, and that generally data of this nature are of limited use.

In Norway, national data is almost never used prescriptively. Rather, it plays a 'conditioning' role in helping inform and shape the decisions of the actors. For example, decisions in the vocational education and training area are usually made on a jointly agreed

basis between employers, unions and government. Australia can learn from these strong social partnerships, and the role they play in disseminating data analysis. Finally, there is overwhelming commonality in all nations studied about the use of data collected at the local level, when precise numbers are accurately collected and it is used as part of a regional planning approach. As noted, this situation applies both in highly populated countries like the US and UK, and smaller nations like Norway.

**Recommendation 3: It appears from the experience of the four countries under review that it is useful to distinguish between the type and degree detail of information used at different levels of a national system of workforce development. Analysis of long term trends and the factors shaping labour demand and supply – primarily of a qualitative nature – are best undertaken at a national level. It is more useful to collect detailed information on changing skill and labour requirements in the short run at the local level.**

*Question 4: How do regions and specific industry sectors ensure their specific conditions and requirements are reflected in national approaches to planning for workforce development?*

The four countries examined varied in how successfully connections were made between issues identified at local and sectoral level contributed to informing national level priorities. The histories, populations and geographies of the US and the UK make achieving coherent connections difficult. The UK, for example, with a reliance on national data which is rarely disaggregated, struggle to achieve this. Combined with the recent abolition of regional workforce agencies, it is highly likely that the UK will continue to struggle to achieve this goal in future.

The US similarly struggles, but does have strong traditions of initiatives at State and local levels that can compensate for this. For example, Finegold, Gatta, Salzman and Schurman (2010) argue for the creation of a strong sectoral focus for workers at all levels of the US workforce development system, or regional ecosystems. This negates much need for a strong, federally organised system, which is simply not present in the US. They argue this architecture provides advantages for a range of workers:

*“For lower-skilled workers, a sectoral approach offers better connections with employers and the potential to build career ladders that would allow for ongoing skill development and progression from entry-level jobs. For those with intermediate skills, a sectoral dimension offers the same benefits and also is vital to identifying those competencies that are distinctive to key occupations and then building partnerships with employers that would allow individuals to build these through a combination of on- and off-the-job training in modern apprenticeships or technician programs. And a sector strategy is vital to meet the needs of the large number of unemployed graduates and other high-skilled displaced workers that the current public workforce development system was never designed to serve. By closely integrating economic and workforce development to develop high skill ecosystems in areas of regional strength, it should be possible to stimulate innovation and with it address the most pressing need for the coming decade and beyond: the creation of high-quality jobs.” (p 201).*

Given the population size of both Singapore and Norway, ensuring the specific conditions and requirements of regions and specific industry sectors are reflected in national approaches to planning for workforce development is decidedly less difficult. However,

given the differing geography, constitutional and governance situations of these two countries, they take differing approaches.

For example, Singapore's relatively small population (currently 4.2 million) and geographic area, and limited natural resources, means that only national (not regional) planning processes exist. The size of the country is important to discussions of workforce planning for two reasons. Firstly, the small population means that sectoral shifts, even small ones, can have a significant impact on the country's overall economic performance. Secondly, the country has relied heavily on the attraction and maintenance of foreign investment, and particularly large scale projects, to fuel economic growth. This means that very specific, and highly controlled workforce planning processes have been required in order to manage and address these two core issues. With a centrally organised system, Singapore's ability to cater for specific industry sectors is integral to the nation's planning, and to its economic survival.

In contrast, Norway has a population about the same size as Singapore, but that covers a vast geographic area. As previously discussed, Norway's conscious strategy of economic diversification and regional growth promotion has been fostered through active negotiations between employers, unions and governments, in formal partnerships. In this way, there has been better than average national utilisation of regional and industry sector intelligence.

As an example, Norway has specific initiatives to promote regional innovation, overseen and funded by the National Innovation Authority. These are cluster based initiatives, and groups of companies are encouraged to work together. Education is usually a part of these initiatives. For example, at regional level it is possible for groups of companies to approach local higher education providers to coordinate the development of a new Masters level program. One such example is provided by the Norwegian Centres of Expertise, which supports 20 regional inter-firm arrangements. Another is the Oslo Cancer Cluster, initiated by medically oriented start-up companies with advanced cancer medicine capability. This deal incorporates training from Oslo University, and explicitly links research and development, education and recruitment in the one venture. Hence, rather than the national government planning for workforce development per se, they are the enabler of local approaches to planning for workforce development.

**Recommendation 4: Achieving effective linkages between priorities identified within a system at local and sectoral level with those guiding the system overall is very difficult in geographically dispersed labour markets. The experience of Norway indicates that effective coordination requires:**

**(a) a strong degree of shared understandings throughout the system about priorities, and**

**(b) clear roles played by agents at different levels of the system. That is, that national authorities work best on analysing and settling longer term priorities in light of understanding general forces shaping change. Local and sectoral authorities work best in complementing this with more specific, detailed analysis of short run skill requirements in particular localities and sectors.**

*Question 5: How do the various stakeholders work together in the planning for workforce development?*

As discussed above, Norway provides the best case examples of the social partnerships. This is reflected in fact had a number of national level agreements between the social

partners on this matter have been negotiated over the last two decades. Whilst formal evaluations of these agreements are not conducted, Norway, in spite of its oil boom, has no recorded skills shortages. In contrast to the Australian experience, this fact alone speaks volumes to the success of their arrangements.

Similarly, Singapore's approach offers excellent examples of stakeholders working together. However, the number and types of stakeholders differ dramatically to Norway, as in Singapore they largely only include government agencies, education providers, trade unions and multinational corporations. Interviewees noted:

*"The system here is also very investment driven. It is very top level, the demand side is driven by industry and is fundamentally investment driven, and the supply side is dependent on key supply institutions, which are also investment driven".*

Three key agencies now have an active role in workforce planning and liaise over issues associated with workforce development and manpower planning. The strength of this approach is that the priorities for planning processes remain very clear. All processes continue to be rallied around what could be described as a 'growth model'.

*"There is collaboration across three different departments in the processes surrounding skill and its development... They're often called the three gorillas because they are that big".*

*"The Ministry of Trade and Industry (MTI), the Ministry of Manpower, and the Ministry of Education all contribute to the processes surrounding skill, labour and the development of labour and there is high level of engagement with employers, by sector. There is engagement with the polytechnics, the Institute of Technical Education (ITE) and the universities regarding the production of industry ready graduates."*

Post an influential report authored by the Economic Development Board in 2003, the Singapore Workforce Development Agency was established. A former head of the agency, Willmott (2004) argued that the rise of structural unemployment in tandem with economic restructuring was the main driver for the establishment for this agency in Singapore. Initially, the Board was established to develop the workforce in service industries specifically, but has broadened to promoting enhanced national continuing education and training.

Hence, the Singapore partnerships work well because relatively few agents work together in the context of a clear and common goal for all players to work towards. On a more detailed note, interviewees noted that strong cultural issues also supported working together better (e.g. considerable government funding and encouragement to research international best practice examples, relative autonomy for bureaucrats from Ministers, and regular cross Ministry meetings to address a particular program that Singapore may be facing).

In contrast to Singapore and Norway, in the US there is dramatic variation with pockets of the successful inclusiveness of a range of stakeholders. For example, Finegold, Gatta, Salzman and Schurman (2010) document the results of 39 US pilot programs aimed at improving local co-operation for workforce planning. They note that in any one region, the presence of a highly qualified network broker, an administrative assistant, a local travel budget and a strong web presence, an incredibly cost effective intervention is possible. The following lessons were defined as critical to creating a local workforce development alliance:



- Avoid partisanship and short-termism;
- Integrate workforce and economic development;
- Focus on the system (i.e. shifting public workforce development programs from operating in relative isolation to being a more integrated part of a sector-based regional development system); and
- Minimise bureaucracy.

Finally, in a successful integrated approach, they characterise the role of the government in workforce development alliances as shifting from a:

*“provider of last resort for workers on the margins of the labor market to a climate setter and network facilitator, where government establishes the regulatory and other conditions needed to stimulate HSEs and proactively fosters interorganizational relationships.” (Finegold, Gatta, Salzman and Schurman, 2010, p. 201)*

Finally, relative to the other nations examined, the UK’s national approach to fostering stakeholders to work together is relatively weak. One such exception to this has been studied by Buchanan, Scott, Yu, Schultz and Jakubauskas (2010) - The Irish Workplace Innovation Fund. Introduced in 2007, the Workplace Innovation Fund is part of Ireland’s National Workplace Strategy. Ireland’s national skill strategy aims to “transform Ireland’s workplaces into *Workplaces of the Future*, by promoting greater levels of partnership-led change and innovation in our places of work, regardless of size or sector” (Enterprise Ireland, 2008, in Buchanan, Scott, Yu, Schultz and Jakubauskas, 2010). The Workplace Innovation Fund has been allocated six million euros over three years and is administered by Enterprise Ireland. The objective of the Workplace Innovation Fund is to:

*“...help small and medium sized enterprises boost their productivity and performance by embracing and embedding innovative workplace practices, while developing employee participation and empowerment as enablers of change and creativity” (Enterprise Ireland, accessed 17.12.2009, in Buchanan, Scott, Yu, Schultz and Jakubauskas, 2010).*

A range of activities are supported by the programme, including enterprise level projects in the private sector (mostly small to medium enterprises), social partner initiatives and a public awareness campaign promoting the goals of the programme (Alasoini et al, 2008). At the level of the enterprise, activities aim to support improved partnerships between management and employees, enhance capacity for change among employees, build employee commitment to a better workplace and introduce new human resources processes to support business. These activities support re-designing work arrangements, providing support to an oft-neglected component of skill utilisation. A broader goal of the programme is to improve employee well being, motivation and commitment the workplace. A key component of the Workplace Innovation program is the way in which it promotes employee and management collaboration (Alasoini et al, 2008), and this sets it apart from many other international examples.

There are a multitude of lessons from abroad for Australia, with respect to fostering stakeholders to work together in planning for workforce development. However, the striking commonality of all successful approaches is that they are regionally based, with

governments providing a ripe context and funding for partnerships to emerge, and data that is used to finesse, or 'condition' decisions, rather than mandate them.

**Recommendation 5: Improving the way stakeholders work together is a major challenge. The total absence of an agreed framework in the USA shows that at least local level initiatives involving local stakeholders can flourish. The highly centralised, state driven approach of the UK shows that constant policy churn from the top actively discourages the emergence of coherent stakeholder partnerships – to the point where even nascent arrangements at regional level are now being actively dissolved. Both Singapore and Norway reveal that having a widely agreed framework that allows room for negotiations works well to engage key stakeholders. In Singapore's case, the key stakeholders are multi-national companies. Norway's process is more encompassing and actively involves representatives of a wide range of employers and employees.**

*Question 6: What seems to work and what are the most common barriers faced in these countries and how are they overcome?*

The most difficult problem facing all workforce planning systems in all the countries studied was getting an effective balance between sensitivity to requirements at local and sectoral level while maintaining coherence and effective labour market outcomes at national level.

Despite lacking coherence nationally the USA provided several important examples of effective generation of useful workforce projections and construction of adaptive capacity to deal with these at local level. In a sense, because the central government is relatively weak in this area examples of innovation are able to flourish locally. National coherence was very evident in both Singapore and Norway. This coherence allowed for the more systematic use of information in both making projections and adjusting workforce development capability in light of this. Norway also revealed that large scale, broadly accepted changes to the entire system of workforce development are possible. Its capacity to balance the need for sensitivity to particular needs with the benefits of national coherence was achieved by its deep structures of power sharing involving employers, unions, government and local authorities – both locally and nationally. Such institutional arrangements appear necessary for both dramatic change and ongoing coherence in a system of workforce development.

The lessons of the UK experience suggest that a key goal for Australia in improving workforce development planning processes must be to move away from 'labour information' and toward 'labour market intelligence'.

The need for this conscious shift in direction is asserted by a strong chorus of UK commentators (Felstead 2009; Green 2009; Keep 2009; Mason 2009; Wilson 2009; all in Belt and Kirk, 2010). Intelligence could be defined as information which is interpreted and analysed, so that actionable insights and conclusions can be drawn from it. A key question for Australia however, is how this intelligence might emerge, or be built, from the existing experiences and protocols underpinning data collection. Some key signposts are offered by the UK experience in this regard.

1. Assessments of skill development must incorporate and reflect dimensions of workplace level experience

In the area of workforce development planning, the experience of the UK demonstrates that while workforce data collection is deeply impacted by questions of population and demographic change, the processes and focus of data collection must incorporate

workplace factors in order to deliver meaningful insights on skill development. As Keep (personal communication, 2010) notes the need *“to probe skill utilisation more is becoming more critical”*, and is more likely to deliver key insights than refining ‘trend’ data per se.

Further to this however, the instruments used to observe workplace behaviour and change also require careful consideration. For example, the instruments typically used to assess workforce development ‘potential’ are often founded on obtuse variables, which in turn produce a crude level of analysis and insight. In this approach, Australia appears to be no exception. Two examples are brought to light by the experience of the UK.

The use of qualification as a proxy for skill represents a blunt way of measuring skills development, and offers limited scope to understand the remaining potential for development within the existing and future workforce. This is because workforce development potential could be argued to pivot on the core issues of ‘training quality’ and ‘training relevance’. As Felstead (2009, in Belt and Kirk, 2010) notes, the quality of training, and the benefits to flow from participation in training remain poorly understood. A body of research, emerging and driven largely by the UK, also highlights that pay can be a misleading indicator of job quality, when used as the solitary variable for analysis. As a UKCEP report notes *“pay is just one aspect of job quality”*, and this is corroborated by others (Felstead, 2009, in Belt and Kirk, 2010).

2. There is immense value in challenging prevailing assumptions of skill shortage.

There is benefit in distinguishing between skill shortages and the ‘jobs people won’t or don’t want to do’. As Keep (personal communication, 2011) notes *“the UK does this, and it makes a critical difference”*. The debate within the UK on skills development also highlights that the most useful workforce development data, in forecasting terms, provides an opportunity to explore the form and meaning of skill utilisation. It is only through these insights that policy makers can consider the relevance and appropriateness of wider training and education policy to current and future economic needs. The UK experience demonstrates that the value of employer declarations around the use and application of training, and the proportion of employer contributions to training, are both highly pertinent to discussions of skill development. As Keep (personal communication, 2011) notes, this approach to workforce development planning and data collection forces sectors *“to do some hard thinking....and allows employers to think about the size and shape of their workforce and providing matching funding to promote this”*.

3. A department or ministry which acts as custodian for data collection and maintenance, and which appears to be embedded in employment and industry policy making processes also appears to be critical.

Superficially it might appear that a highly active and highly engaged debate between stakeholders (employers, union, researchers, government etc) can only expand and enhance the information base on workforce development concepts and initiatives. However, the experience of the UK also highlights some inherent risks in this approach, if policy debate occurs in a policy vacuum. Workforce development policy and the information sources underpinning policy formation require both leadership, and cohesion in the approach and consolidation of activity in data collection. As Keep (personal communication, 2011) notes *“having an authoritative data source, with proper analysis, over time is important, and serves as a “national depository” of data and information”*.

Instituting a robust, reliable and replicable data collection on skills has reformed the United Kingdom’s ability to better plan for workforce development. When contrasting this

experience with other countries (e.g. Singapore) it demonstrates that meaningful policy frameworks for workforce development must focus on more than refinement of data collection and methodology. The issues of data dissemination, and access to data, are also critical concerns in developing a meaningful concept of workforce development.

### **Recommendation 6:**

**The key challenge in an effective system of workforce development is getting a stable balance between national coherence and sensitivity to local requirements – geographically and in particular sectors. This is best achieved by having effective power sharing arrangements between employers, unions, government and educational authorities – nationally as well as at regional level.**

**Specific lessons from the UK experience can be summarised as follows:**

- a. incorporate and reflect dimensions of workplace level experience to our national data collection;**
- b. challenge prevailing assumptions of skill shortage, and address reasons for these problems;**
- c. ensure one department or ministry has responsibility as custodian for data collection and maintenance, and is embedded in employment and industry policy making processes, and**
- d. improve data dissemination, and access to data.**

*Question 7: What examples of innovative good practice could provide lessons for us in Australia?*

The following are a series of case studies designed to highlight specific lessons for Australia.

### **Singapore Case study – Construction workers (Ofori, 2000)**

Little has been formally documented about Singapore's workforce development history. A rare exception to this is the work of Ofori (2000), who has written an insightful case study on foreign construction workers in Singapore for the International Labour Organisation (ILO)<sup>6</sup>. Construction is a strong economic driver of the Singapore economy, and it has been estimated that anywhere from 75 to 95 per cent of the industry workforce are foreign workers (Ofori, 2000; Willmott, 2011).

In response to the driving need for reform to improve productivity in this sector, the Singapore Government established the Construction Industry Development Board (CIDB) in 1984 to "*spearhead, promote, monitor and guide the continuous improvement of the industry*" (Ofori, 2000). This Board transformed into the Construction Industry Training Centre (CITC), with a remit to build up a pool of highly skilled and productive workers in the construction industry. The Centre essentially become a training and certification institution, providing full-time skills training in construction trades to young people entering the construction industry and training to upgrade and update the skill levels of the existing

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<sup>6</sup> <http://www.ilo.org/public/english/dialogue/sector/papers/forconst/index.htm>

construction workforce. It was also responsible for setting standards in the industry, and testing and certifying construction skills in Singapore<sup>7</sup>.

For its first 10 years, the CITC conducted full-time courses on various construction trades at different skill levels to meet the manpower needs of the industry. In 1994 this Centre was expanded in scope, largely to provide training to workers already in the construction industry, and became known as the Construction Industry Training Institute (CITI). The Institute became the Building and Construction Authority (BCA) in 1999, and in 2001, formally launched its first diploma programme in construction engineering to provide school leavers an alternative education and career option. Shortly after, a series of other diploma programmes and specialist diploma programmes were introduced, including joint diploma programmes to train Chinese workers in Chinese institutions.

The construction industry in Singapore continues to expand, and the demand for more and higher value-added training for the practicing professionals as well as senior and middle management personnel in construction-related companies is being met with new courses. In response to this new challenge, CITI was re-structured and renamed as BCA Academy of the Built Environment to gear itself for an expanded scope of professional education.

Whilst it is difficult to access any metrics on the success of this initiative, planning for workforce development in this way has corresponded with a period of strong growth for the Singapore construction industry. However, Ofori (2000) noted:

*“As the pool of Singaporeans wishing to work in construction shrinks with other sectors of the economy faring better in the competition for workers, even more foreign workers may be required. Again, this may be the case, even if the volume of construction activity declines. It has been observed that the construction industry can reduce the number of foreign workers it uses only if its image is further enhanced to attract local people (Goh, 1991). Whereas safety had improved, management, workers and their union needed to work hard to make the working environment more conducive. So far, the Government has played a disproportionately large role in these efforts. More multipartite concerted action will be required in future.”*

Planning for workforce development must involve the improvements to training and upskilling initiatives undertaken by Singapore’s BCA Academy of the Built Environment for Singaporean and foreign, including Chinese, workers. However, these improvements will only result in measureable improvements to the local composition of the construction industry if they are undertaken in conjunction with improvements in the factors (Ofori, 2000).

This case study highlights the use of Recommendation 6 to Australia. Australia must challenge the prevailing assumptions of skill shortage, and address reasons for these problems systematically. Whilst simply investing in training for overseas workers may temporarily solve some part of a roadblock to economic development, only a systematic and comprehensive approach to planning for workforce development can address and remediate the causes of the issue.

### **United States Case Study – Lower Rio Grande Valley, Texas (Froy and Giguere, 2010)**

Given the bureaucratic and planning fragmentation of the United States, regional initiatives are often the most powerful examples of excellence in planning for workforce development.

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<sup>7</sup> <http://www.bcaa.edu.sg/history.aspx>

One such example is currently being undertaken in the Lower Rio Grande Valley, Texas and has been studied by the OECD (Froy and Giguere, 2010).

The town of McAllen in the Lower Rio Grande Valley, Texas has traditionally relied on agricultural and retail sectors for its domestic economy. Twenty years ago, the town was recording twenty per cent unemployment, and there was considerable uncertainty about the growth in manufacturing plants operating in nearby Mexico. At the same time the region had a very poorly educated workforce, with a significant percentage of local people dropping out of high school.

In response to this, the town's local leaders took a proactive approach and established the McAllen Economic Development Corporation (MEDC) and, focussing on manufacturing, the region positioned itself as a 'rapid response manufacturing centre', and negotiated with existing companies and suppliers to move from product design to market in ever shorter time frames. The strategy explicitly sought to take advantage of the region's geographic location, as the excerpt from the McAllen Economic Development Corporation's (2011) website shows:

*"DOES MEDC PROMOTE BUSINESS LOCATION IN MEXICO? YES!*

*McAllen is strategically located four-miles north of Reynosa, Mexico and has access to three international bridges.*

*Labor availability, lowers costs, strategic location for distribution, turn-key operations and land availability have prompted companies around the world to view Mexico as an attractive alternative in their decision to relocate. Many companies that have moved to Reynosa, Mexico have also established offices in McAllen and almost all of them have key employees who live on the U.S. side of the shared border. This location decision creates a win-win situation for Reynosa and McAllen."*

As Froy and Giguere (2010) note, it became increasingly apparent that skills and education constituted an important part of the solution. The region worked to open South Texas College in 1993, a comprehensive community college that has grown from 1,000 to more than 22,000 students and 1,800 staff (South Texas College, 2011).

In addition, a range of educational institutions, including the College as well as elementary and secondary schools, worked with the region to collect data on and measure skills gaps and better customise training funds. This has resulted in improved standards and new linkages between school curriculum and local economic clusters.

In addition to this data collection, the City conducts detailed evaluations of this initiative via a major survey conducted with partners every two years. Via this, they have concluded that the regional strategy has been responsible for helping to attract more than 500 employers and nearly 100 000 jobs to the wider region (Froy and Giguere, 2010). Although there certainly are pockets of economic distress, there has been tremendous progress since the early 1990s, with unemployment declining in one county from 24.1 per cent to 7.7 per cent, and another from 40.3 per cent to 10.7 per cent.

Froy and Giguere (2010) attribute the overwhelming success of the collaboration on both measurement and strategy in Texas to three key elements:

- 1) a series of Memoranda of Understanding' between agencies;

- 2) the co-location and merging agencies, such that policy integration is more durable in practice; and
- 3) flexibility in policy delivery meant that there was space for creativity and informal relationships on the ground.

They additionally recommend the following, to improve on the current successes:

- 1) ensure sufficient funding for workforce development agencies to encourage collaboration, with sufficient financial, political and program incentives to encourage partnerships to balance the costs of collaboration;
- 2) trends to increase incentives for collaboration across agencies, organisations and levels of government must continue and be accompanied by increasing emphasis on systems of horizontal accountability;
- 3) continued strong state guidance and leadership are important in helping to create a vision, used in parallel with incentives to local areas to encourage them to use the flexibility they have to move beyond the status quo;
- 4) policy makers and program auditors need to share information more effectively regarding the intended interpretation of program rules and regulations; and
- 5) policy makers need to overcome the centrifugal political tendencies which encourage the approach to allow enough critical mass to create real change in localities in crisis.

This case study offers Australia a living, and reviewed, example of diverse agencies collaborating to improve workforce development through better transparency and sharing of data. By adopting some of the current practices in the Lower Rio Grande Valley, Texas and combining these with recommendations from the OECD (Froy and Giguere, 2010), Australian regions have the potential to significantly improve their regional economic development.

### **United Kingdom Case Study – The Manchester FIELD study (Hymans, 2008)**

Hymans (2008) has detailed the results of a study undertaken in Manchester, UK, on the success of a local initiative planning for workforce development. The study was conducted as part of the Framework for Information Exchange in Local Development (FIELD) initiative, funded by the OECD, and set out to collect data on the following:

- performance outcomes: how a locality is performing;
- local development drivers; and
- capacity mapping.

A further key goal was to build policy instruments that work, and meet local need, across regions.

Greater Manchester is located in the north west of England, with around 2.6 million people living within its boundaries, with another 7 million in the wider region and a further 11 million living within 50 miles of the City of Manchester. Greater Manchester is the largest sub-regional economy outside London. As a city centre encompassing its surrounding centres and suburbs, Greater Manchester was organised into ten separate local authorities as part of boundary adjustment in 1974.

Within the United Kingdom local authority structure, each of the Greater Manchester local authorities are 'unitary authorities' - in effect single-tier local government entities combining

the responsibilities of a 'district' and a 'county' authority. Typical responsibilities of a unitary authority include business and economic development, education and learning (excluding mainstream schooling), and regeneration.

Collectively, the Greater Manchester authorities and other partners have pooled resources to create, support and work alongside a number of 'over-arching' bodies with particular area of policy focus. Examples include:

- AGMA – the Association of Greater Manchester Authorities
- MIDAS – Manchester's Inward Investment Agency
- ME – Manchester Enterprise
- Marketing Manchester
- Manchester: Knowledge Capital

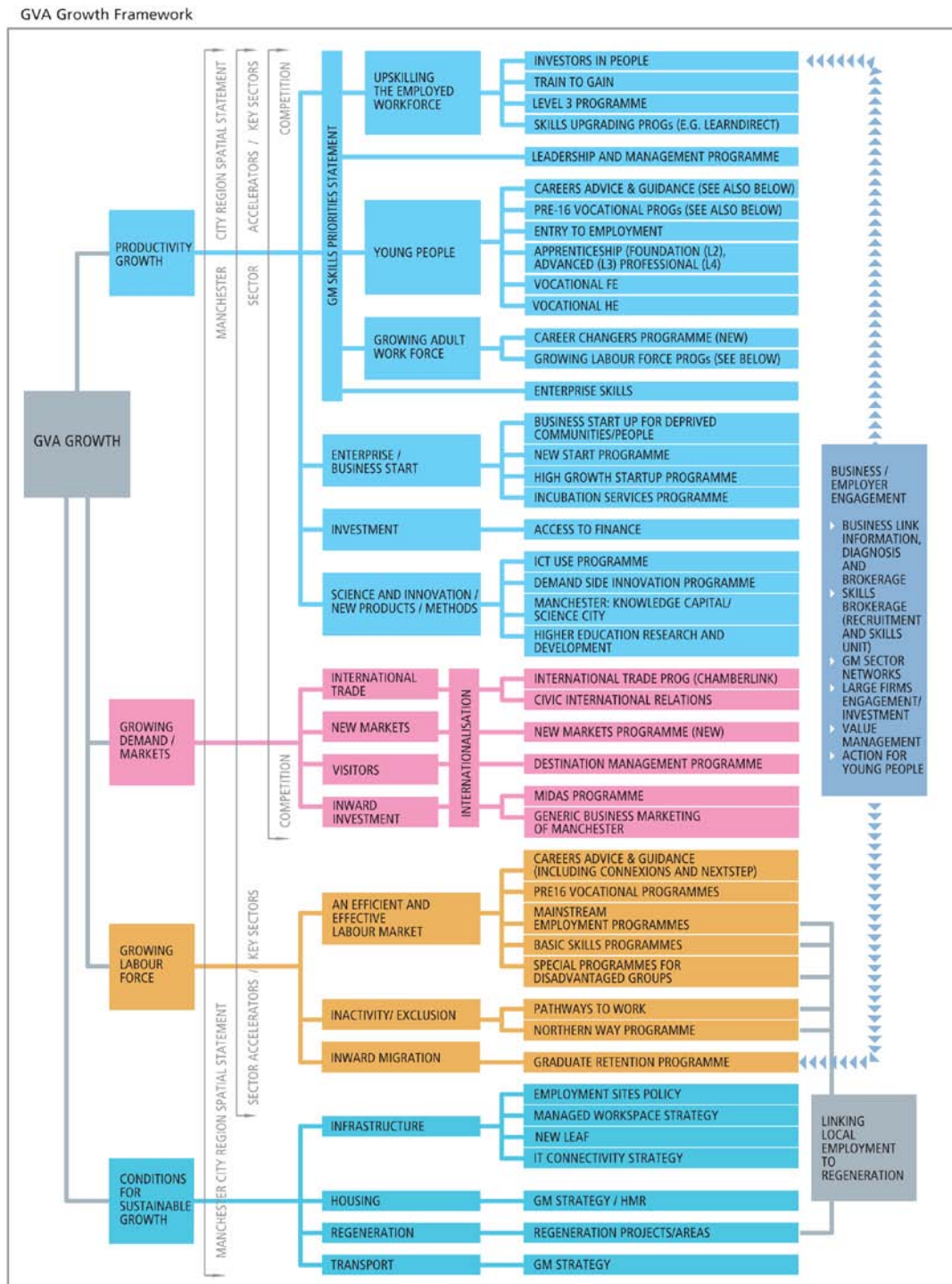
Considerable policy-making, implementation and scrutiny work is undertaken at a regional level. Relevant bodies include the North West Regional Development Agency (NWDA), the Government Office for the North West (GONW), and the North West Regional Planning Body (NWRPB).

There is also evidence of significant cross-working between the bodies outlined above and regional elements of national policy-makers and delivery bodies such the Learning and Skills Council, and Job Centre Plus.

Part of the purpose of the study was explicitly to identify the way(s) in which local development information is used. The main local policy documents that existed within the study area were included, as well as the sorts of data and/or indicators that are included. This is then developed into a 'dashboard of indicators' – a slimmed-down version of the data used in policy to provide an illustrative summary of the time period being examined. This data, along with the framework is supports, are represented below.



Table 4: Greater Manchester's Growth Framework



Source: Hymans (2008).

The framework looks at each of the drivers of growth identified (the 'left column' – productivity growth, growing demand/markets etc), and for each of these breaks this down further into the affected topic areas. From a dashboard perspective, it is this 'middle column' that needed to be 'displayed' by any dashboard. The remainder of this section takes each of the four drivers of GVA growth and lists the data sources that are currently used for each driver, and that might feature in a dashboard of local development indicators.

Developing this 'dashboard of indicators' was made significantly easier by the Manchester Multi-Area Agreement (MAA). Agreed in June 2008, as part of the first wave of multi-area agreements within England, the Manchester Multi-Area Agreement (MAA) is a partnership

between the ten Greater Manchester authorities made 'on behalf of the communities of Greater Manchester, our people, businesses, voluntary and community organisations'. The MMA provides a commentary of baseline conditions in the city region, supplemented with selected data examples. It identifies the 'drivers and blockers of growth'

The MAA identifies ten key performance indicators (KPIs) as a mechanism to track the progress of the MAA, which are:

- Total annual real Gross Value Added (GVA) output (£);
- GVA per hour worked (£);
- Total employment (numbers of employees);
- Overall employment rate (% working age population);
- Working age people on out of work benefits in worst performing neighbourhoods (% working age population);
- Proportion of adults qualified to Level 2 or higher (% of adult population);
- Proportion of adults qualified to Level 4 or higher (% of adult population);
- Stock of VAT registered companies (numbers of firms);
- Percentage of non-car morning peak journeys to the regional centre (% of total); and
- Net additional homes provided (units).

The KPIs are accompanied by a range of scenarios, to provide adequate contextualisation for the eventual level of outputs. These KPIs, are in turn, linked to both national targets and the 'building blocks' identified and to be further contextualised by the Greater Manchester Strategic Plan.

It is clear that these types of formal agreements between local and national agencies that conduct data collection, when generated as part of a broader plan for workforce development, are powerful tools for unifying the work that needs to be done, and reducing overlapping work to maximise resources. The report notes the need for strong political will to generate these arrangements, and a lack of policy churn. The effects of this initiative are yet to be evaluated, but they provide a possible model for Australian data collection and analysis to better plan for workforce development.

### **Norwegian Case Study – The Oil Industry (Karl, 1997)**

Karl (1997) has written a detailed analysis of the political economy of the discovery of oil in the North Sea of Norway that is useful for examining the unique structure of Norway's workforce development. This study offers parallels with Australia's mining boom, and the consequential challenges to the workforce.

In 1962, oil was discovered in the North Sea. At this stage, Norway was already one of the world's wealthiest, most equitable and most democratic countries. It was thinly populated, relatively culturally homogenous, low levels of urbanisation and a diversified economy based on agriculture, forestry, fishing, shipping and manufacturing. As with other booms, this shifted public and private consumption growth in the wake of a boom. Its newfound wealth was, like Australia's, due to a discovery and not a sudden price increase. Initial responses of policymakers were to increase public expenditures.

The Norwegian Labour party specifically saw the opportunity to create, and hence aspired to:

- a) Full employment
- b) Greater equality through redistribution, and
- c) Expansion of public employment.

The Government increased spending on social services, pensions, public employment, and granted subsidies to agriculture and industry (i.e. shipping, fishing and manufacturing). Real wages rose by about 25 percent between 1974 and 1977.

Predictably, inflation rose sharply in 1975, and continued to increase slowly. The current account deficit became the highest of any OECD country except the US, and external debt was the highest ever in any OECD country. Agriculture and manufacturing declined, and labour costs became among the highest in the world as the relative average value of manufacturing exports fell steadily.

Karl (1997) argues that several factors protected Norway from some of the worst excesses of the petroleum boom, seen in other states such as Iran, Venezuela and Nigeria, including the strength of the civil service, and the strong accountability measures built in to combat corruption. She also cites the state's combination of high participation and stability, and 'corporate pluralism' which incorporates associations of workers, employers, farmers and fisherman bargaining over development priorities.

Hence, multinationals were forced to bargain with the representatives of a highly developed state bureaucracy who felt no strong need for a new revenue base. The 'comprehensive oil arrangements' were negotiated to include features that sacrificed large amounts of lost rents. These rents included securing a fair share of domestic revenue whilst guaranteeing technology and expertise, established a Ministry for Industry and a state owned oil company (Statoil), a role of private and foreign companies under state supervision, and a system of corporate taxation for the oil firms.

Debate over the rate of development took place well before the oil revenues became significant to the Norwegian economy. In contrast to other states, many established organised and political forces were hostile to the potential threat to the Norwegian way of life (i.e. fisherman), and this, in combination with a robust democratic and bureaucratic process, *"meant that Norway's boom effect was significantly less than it could have been"* (p. 219).

Importantly, Norway sought to protect the state's non-oil fiscal capacity. The government resisted the strong temptation to lower the tax base and allow oil to replace its normal tax base, and the progressive taxation system redistributed income. Norway established a 'petroleum fund', *"set up to store wealth for the next century when its oil starts to run out."* (p. 220). These factors cushioned process oscillations, and protected citizens.

Comparing international examples of mining and oil booms, Karl (2007) notes:

*"windfalls in themselves, regardless of how they are measured, are not a satisfactory predictor of political outcomes. Because these revenues have no economic impact unless they are spent domestically and because their subsequent economic effects are so closely tied to political outcomes, a better indicator of eventual political performance is the magnitude of the boom effect – that is, the increase in spending that takes place immediately after the rise in prices. Where boom effects are high, political instability is always present. Where they are medium or low, politics remains more stable."* (Karl, 1997, p 195)

Whilst this example offers little by way of advice on measurement issues specifically, the way in which the government and social actors formed partnerships to manage the resources of boom offers insights for workforce planning in Australia. Notably, when Norwegian key informants were interviewed, they did not note any issues in the oil workforce whatsoever. In direct contrast to Australia, the structural handling of the Norwegian oil boom has led to a coherent, stable and lasting improvement to the Norwegian workforce.

# SUMMARY OF RECOMMENDATIONS

## **Recommendation 1:**

Australia's national agency for data collection, the ABS, collects high quality data that is sometimes used for generating projections of likely labour demand and supply. However, this information could be usefully supplemented by:

- a) national large scale employer surveys like those conducted in the UK; and
- b) blue sky research on Australia's future economic development, similar to that run by the US National Academy of Sciences.

## **Recommendation 2:**

The experience of the UK and the USA highlights that simply having good quality data does not mean information is constructively and efficiently used for workforce development planning purposes. Improvements in workforce planning therefore require as much attention being devoted to establishing mechanisms and arrangements that ensure the sound use of data as do settling priorities on broadening and deepening the issues on which data are collected.

## **Recommendation 3:**

It appears from the experience of the four countries under review that it is useful to distinguish between the type and degree detail of information used at different levels of a national system of workforce development. Analysis of long term trends and the factors shaping labour demand and supply – primarily of a qualitative nature – are best undertaken at a national level. It is more useful to collect detailed information on changing skill and labour requirements in the short run at the local level.

## **Recommendation 4:**

Achieving effective linkages between priorities identified within a system at local and sectoral level with those guiding the system overall is very difficult in geographically dispersed labour markets. The experience of Norway indicates that effective coordination requires:

- (a) a strong degree of shared understandings throughout the system about priorities, and
- (b) clear roles played by agents at different levels of the system. That is, that national authorities work best on analysing and settling longer term priorities in light of understanding general forces shaping change. Local and sectoral authorities work best in complementing this with more specific, detailed analysis of short run skill requirements in particular localities and sectors.

## **Recommendation 5:**

Improving the way stakeholders work together is a major challenge. The total absence of an agreed framework in the USA shows that at least local level initiatives involving local stakeholders can flourish. The highly centralised, state driven of the approach of the UK shows that constant policy churn from the top actively discourages the emergence of coherent stakeholder partnerships – to the point where even nascent arrangements at

regional level are now being actively dissolved. Both Singapore and Norway reveal that having a widely agreed framework that allows room for negotiations works well to engage key stakeholders. In Singapore's case, the key stakeholders are multi-national companies. Norway's process is more encompassing and actively involves representatives of a wide range of employers and employees.

### **Recommendation 6:**

The key challenge in an effective system of workforce development is getting a stable balance between national coherence and sensitivity to local requirements – geographically and in particular sectors. This is best achieved by having effective power sharing arrangements between employers, unions, government and educational authorities – nationally as well as at regional level.

Specific lessons from the UK experience can be summarised as follows:

- a. incorporate and reflect dimensions of workplace level experience to our national data collection;
- b. challenge prevailing assumptions of skill shortage, and address reasons for these problems;
- c. ensure one department or ministry has responsibility as custodian for data collection and maintenance, and is embedded in employment and industry policy making processes, and
- d. improve data dissemination, and access to data.

# KEY FINDINGS

## THE IMPORTANCE OF ROLE CLARITY, DATA USE AND THE WORKFORCE DEVELOPMENT SETTLEMENT

The core elements of any workforce development systems are:

- Formal education and training arrangements;
- Informal education arrangements, especially at workplace level; and
- Labour market arrangements, especially the structure of jobs and the setting within which they are performed.

A particularly difficult challenge for successful workforce development arises because the nature of labour demand is constantly evolving. This does not just concern the total number of jobs required to be performed at any one time. The structure of jobs is also important. This is shaped by the distinct (and often competing) demands for them to conform to the requirements for 'enterprise', 'industry' and 'occupational' coherence. This balance as between these different logics ultimately determines how skill requirements are defined. But just as important as skill content is the setting in which work is performed. This shapes how skills are 'rounded out' on the job and how potential skills available for use are utilised. Making sense of these dynamics is one of the core challenges for those interested in both making projections of future skills requirement and those responsible for managing the capacity necessary for meeting changing skill requirements.

On the basis of our consideration of recent developments in the four countries, we have identified four key findings.

### **Key finding (a) Compared to other countries, Australia has good systems of data collection and analysis**

There is no doubt Australia has good data to draw on when generating either workforce projections or planning for adaptive capacity. This is especially due to the good work of the ABS and NCVER. As noted in Buchanan and Evesson (2008), the quality of this information could be improved by the formation and refinement of more relevant categories that offer greater sectoral relevance. But the ABS and NCVER, like all publicly funded institutions, face resource constraints (Buchanan and Evesson, 2008). If there is one major deficiency in the official data collections, it is in the areas concerning labour demand (i.e. what is going on in the workplace). The other major deficiency is the lack of standard protocols followed by those producing information to supplement that of the ABS. Buchanan and Evesson (2008) also offered recommendations on how this might be improved. These limitations need to be kept in perspective. The key to improving workforce development planning and workforce projections is not primarily a matter of gathering yet more or better quality information. Of greater relevance is ensuring the data collected is properly used.

### **Key finding (b) Greater care needs to be given clarifying what type of information is needed at different levels of the workforce development system.**

Understanding changing skill needs requires statistical as well as qualitative information. There is often a hunger for robust numbers amongst policy makers and decision-makers. Where should limited workforce development money be invested? As is evident in the case

studies, however, there is not simple answer to this question. What does appear to be the case, however, is that there are major benefits in distinguishing between what information is needed at the national and supra-national level and that needed at the local level. As noted in the case of Norway, precise statistical data on the content and scale for demand for particular skills is most reliably collected and used at the county or local level. At the national level, information on underlying generative tendencies and forces is of greatest use. Clarifying where information is best collected and used is important to ensure evidence plays its most effective role in shaping a system of workforce development.

**Key finding (c)      More attention needs to be devoted to identifying how to create capacity within the workforce development system to use information more effectively.**

In terms of the contemporary Australian workforce development planning system, two gaps remain. The first gap is a dearth of data that gives real insight to workplace level activity in the realm of skill use, transfer and wastage, and the management systems which underpin the decisions driving skill choices. The second gap appears to be the absence of more robust 'blue sky' research, like that coordinated by the USA. It is important to note that while the UK and the US are often cited as the 'leaders' in workforce development planning practice, their systems also appear to be the least coherent of the four countries studied for the purposes of this analysis. Highly advanced workforce development systems can co-exist with poorly coordinated policy planning processes. In short, excellent information can be poorly used.

The experience of Singapore and Norway provide a useful contrast. Both make far better use of the information they generate. However, these two nations also face challenges in the realm of workforce planning. In the case of Singapore, the economy is still sustained primarily by a high reliance of foreign skilled labour. In Norway, policy makers have struggled to achieve a sound balance between 'general' and 'vocational' education, as VET has become more embedded into upper secondary schooling (particularly apprenticeships). Good information and the capacity to absorb this information does not ensure a trouble free system of workforce development planning. However, robust information and policy mechanisms responsive to data mean that the magnitude of problems can be contained, and hopefully, identified sooner.

These findings highlight that key players need an appropriate framework for the use, as well as the generation, of data. To some extent, this mirrors the problems in workforce development policy more generally. In recent times, great emphasis have been devoted to the generation of qualifications and relatively little concern devoted to the use of higher education/skills levels. The two issues are linked. If Australia aspires to better use skills, greater thought needs to be given to generation, use *and* control of data. This approach would, in turn, generate the need for new accountability arrangements over the generation, distribution and use of any data available.

**Key finding (d):      Ultimately improvements in workforce projections and planning for workforce development will only be possible if there is stable, inclusive 'workforce development settlement'.**

Ultimately, it should not be concluded that we need to model Australia's approaches on another nation's workforce development system. What Australia requires is a better settlement where there is agreement as to how evidence can play a greater role in system



design, system evolution and day to day decision-making. Central to this settlement is widespread agreement about the rights and obligations of:

- Citizens as workers and students;
- Employers as users of skills and contributors to on-the-job development of them;
- Education institutions as providers of qualifications; and
- Government as brokers and providers of significant resources.

The elements of a settlement are there. Skills Australia is playing a very constructive role as broker and facilitator. NCVET is performing valuable role of improving the evidence base. By international standards, the Australian Bureau of Statistics generates and makes available a wide range of high quality labour market data. What we really need is a clearer and more inclusive lead from governments, and the quality and quantity of on-the-job/workplace learning. With agreement to improve both workplace development and use of skills, there is a focal point for deliberations and reform.

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