

# THE SKILLS-PRODUCTIVITY NEXUS: CONNECTING INDUSTRY TRAINING AND BUSINESS PERFORMANCE

## **Acknowledgement**

Prepared for the Department of Labour and the Industry Training Federation  
Owen Harvey and Peter Harris  
Innovation & Systems Ltd

ISBN 978-0-478-28182-8  
© Crown copyright 2008  
April 2008

**Disclaimer:** The Department of Labour has made every effort to ensure that the information contained in this report is reliable, but makes no guarantee of its accuracy or completeness and does not accept any liability for any errors. The Department may change the contents of this report at any time without notice.

This material is Crown copyright unless otherwise stated and may be reproduced free of charge without requiring specific permission. This is subject to it being reproduced accurately and not being used in a derogatory manner or in a misleading context. The source and copyright status should be acknowledged. The permission to reproduce Crown copyright protected material does not extend to any material in this report that is identified as being the copyright of a third party.

Published by the  
Department of Labour  
PO Box 3705  
Wellington  
New Zealand

Industry Training Federation  
PO Box 24-194  
Wellington  
New Zealand

[www.dol.govt.nz](http://www.dol.govt.nz)

[www.itf.org.nz](http://www.itf.org.nz)

To download the document in PDF format, please visit:

<http://www.dol.govt.nz/workplaceproductivity/resources/research/>

## **Department of Labour Preface**

A focus on workplace productivity is not just about short term ways to improve the bottom line. It means being open to new ideas and working out how new skills, technologies, products, services and work practices can improve the business. This involves exploring all the ways that workplaces can do things better and smarter. It demands a focused effort and strategic approaches across training institutions, industry, unions, firms, and government.

The Workplace Productivity Reference Group (comprising business, union and government representatives) advises on the implementation of the Workplace Productivity Agenda, which focuses on how New Zealand can achieve improvements in workplace productivity.

The Reference Group supported the establishment of workplace productivity projects to trial different approaches to implementing productivity-related change. The lessons from these projects will be distributed through participating firms and industry partners and made available to other firms, industry sectors, and regional networks.

The productivity projects are undertaken jointly by the Department of Labour and trusted partners. The first of these projects was signed with the Industry Training Federation in October 2007. The Department of Labour has great pleasure in supporting the contribution of this first report from the project, *The Skills-Productivity Nexus*, to our collective knowledge about how we can best approach and influence productivity-enhancing change in our workplaces.

Andrew Annakin

A handwritten signature in black ink, appearing to read 'Andrew Annakin', with a small dot at the end.

Deputy Secretary - Workplace Group  
Department of Labour  
[www.dol.govt.nz](http://www.dol.govt.nz)

## **Industry Training Federation Preface**

New Zealand's Industry Training Organisations (ITOs) are established by their industries to carry out a range of activities, principally involving the development and arrangement of industry-related education and training.

ITOs have been in operation since the passage of the Industry Training Act in 1992. Over that period they have evolved and developed in response to the changing needs of New Zealand industry. They now provide services to over 35,000 businesses and 180,000 individual employees every year.

Increasingly, as the labour market has tightened, the industries and firms that ITOs work with are seeking assistance with meeting the challenges of addressing skill shortages and raising labour productivity.

While ITOs continue to work to improve the relevance and availability of education and training within and for industry, they are increasingly working with individuals and firms to ensure that skills are effectively utilised within the workplace. This report documents some of the ways that ITOs are going about these increasingly important tasks.

The ITF and ITOs look forward to working with their industries, government agencies and researchers to further understand how they can add value to their services, so that the effective use of skill and productivity in New Zealand's workplaces can be maximised.

Jeremy Baker

A handwritten signature in black ink, appearing to read 'JB', with a large loop at the end.

Executive Director  
Industry Training Federation  
[www.itf.org.nz](http://www.itf.org.nz)

## TABLE OF CONTENTS

<b>CONTEXT .....</b>	<b>8</b>
<b>LITERATURE SCAN .....</b>	<b>9</b>
Lessons from the research .....	10
Practical interventions.....	17
Summary .....	21
<b>THE EXPERIENCE OF NEW ZEALAND ITOS .....</b>	<b>23</b>
Apparel and Textile ITO .....	23
Competitive Manufacturing Initiative.....	27
Agriculture ITO .....	31
Summary of ITO Experience .....	34
<b>REFERENCES.....</b>	<b>36</b>

## **EXECUTIVE SUMMARY**

The Industry Training Federation (ITF) and the Department of Labour (DoL) have embarked on a joint venture aimed at improving the ability of Industry Training Organisations to assist workplaces to raise their productivity. The starting point of this project is that the assumption that the development and effective utilisation of skills in New Zealand workplaces is an important component in improving productivity.

This report is the first output from this project. The first section consists of the findings from a literature scan that explores the links between skills, their application, and productivity. The second outlines the experiences of several manufacturing ITOs that have expanded their agenda and services to clients in ways that position their arranging training role as only one of several elements that need to be effectively applied to improve business performance.

### **Lessons from the literature**

In simplified terms, the literature reaches three main conclusions:

Improved productivity and organisational performance has been attributed to a number of “interventions”: better training, enhanced managerial capability, employee engagement, improved employee recognition and reward, innovative production practices and more. The key finding though, is that on their own, any one intervention is likely to have limited impact. In other words, the additive effects of interventions must be recognised. Hence training, on its own, is likely to have a limited payoff in terms of improved productivity. Indeed, in the case of skill development, unless managers have the capacity to utilise skills effectively then training may have little value. This implies that sequencing of change is sometimes important.

Interventions of this nature do add cost. They are more likely to add value in firms that have a competitive strategy based on the delivery of high-value products and services, and to have limited (or net negative) returns in high volume business models that rely on minimising cost. They are not a universal panacea. Furthermore, managers can often be certain about the costs and when they will occur, but much less so about the rewards and when they can be realised.

It is not just the nature of the interventions that matter, but the manner in which they are deployed. For example, engagement of employees through unions can be a high value intervention, or it can have negative consequences – It is not simply whether there are unions or not, it is what unions actually do! This implies that there is not a simple ‘menu’ of interventions to select from, but rather that the process of putting that intervention in place is just as important in pursuing a high productivity objective.

## Summary of ITO Experience

In reviewing the experience of ITO's in this area the following conclusions can be drawn:

- i Competitiveness challenges and productivity issues are leading to growing demand from manufacturing employers, at least, for external support in improving workplace productivity and performance.
- ii The initial response of ITOs to this demand has been to develop new qualifications that would underpin smart manufacturing practices.
- iii ITOs with their direct and regular engagement with members are well placed to facilitate conversations about whole of business issues as well as provision of support services.
- iv However, many small to medium sized employers are neither ready nor equipped (although they are willing!) to embrace these new qualifications or to begin significant change processes.
- v A considerable degree of 'pre-work' may be necessary to prepare companies to take advantage of new manufacturing technologies (e.g. Six Sigma). This is often due to the fact that change has to begin with company leadership and supervisory staff in such areas as how to conduct effective conversations with and engage their staff before specific improvement programmes can gain any traction.
- vi Support infrastructure is needed to provide appropriate forms of assistance to companies across virtually all of the seven productivity drivers.
- vii Fledgling efforts to establish trusted networks of experienced consultants are underway.
- viii This emergent role creates significant adjustment and reorientation challenges for ITOs given their traditional focus on qualifications and skill development alone.
- ix Quite different and more sophisticated capabilities and relationships are required to engage credibly with senior managers on such system wide business issues.
- x A variety of initiatives are being taken by ITOs in this area to increase internal capability. Many are ad hoc and not well coordinated at present, reflecting the nascent nature of these developments.
- xi There may be some issues to do with how ITOs can fund this new orientation (given current performance measures that determine ITO funding levels), as well as how it might be scaled up and rationalised in terms of 'public good' investment.
- xii Despite these teething difficulties there is a growing determination on the part of the manufacturing ITOs examined to persist in this development path because of the strength of the response of their clients.

## CONTEXT

The Industry Training Federation (ITF) and the Department of Labour (DoL) have embarked on a joint project aimed at improving the ability of Industry Training Organisations to assist workplaces to raise their productivity. The starting point of this project is that the assumption that the development and effective utilisation of skills in New Zealand workplaces is an important component in improving productivity.

The project is based on two basic premises:

- i ITOs have a reach and a presence within businesses through their organisational infrastructure and networks and can therefore play a role in enhancing productivity within enterprises that goes beyond the specific function of providing training.
- ii Research has confirmed that the highest productivity gains are found when complementary changes are made in skills, innovation, workplace organisation, management capability and employee engagement and motivation.

The project therefore seeks to build on these organisational and evidence based strengths to develop practical measures for ITO-facilitated initiatives to improve productivity through:

- Assessing what approach to productivity is most suitable for particular types of enterprise.
- Identifying the sort of assistance enterprises need from ITOs to embed productivity improvements within them.
- Developing the skills and resources ITOs need to undertake productivity-focussed activities within enterprises.

This background report is the first output from the project. It:

- i scans the research literature to isolate the findings relating to the link between training and firm performance that can inform the subsequent development of project activities; and
- ii briefly traverses the experience of New Zealand manufacturing industry ITO's in expanding the range of services offered to clients beyond units standards, qualifications and training to include how training might be applied in practice and how it complements other practices in supporting firm performance.

## LITERATURE SCAN

A broad spectrum and ambitious project like this seeks to integrate the findings of the research literature on such wide ranging topics as training, workplace organisation, employee motivation, organisational performance, management capability and other fields and disciplines. The literature in each area is vast, and in combination the potential studies of interest are almost boundless.

The approach that has been taken in light of this is to conduct a 'survey of surveys' and within that to extract lessons that are relevant to the purpose of the overarching project.

The three primary literature summaries used are:

- Tamkin P, 2005, *Measuring the Contribution of Skills to Business Performance: A summary for employers*, Institute for Employment Studies: Brighton. Although this has a strong emphasis on experiences in the UK it also looks at studies examining China, Korea, the Netherlands and the USA, so is reasonably comprehensive across different types and sizes of economy, and across different business and business/union cultures and traditions.
- Ryan R, 2007, *Why Workplaces Matter: the role of workplace practices in economic transformation*, Athena Research for the Department of Labour: Wellington. This survey also brings relevant New Zealand research into the frame.  
<http://www.dol.govt.nz/workplaceproductivity/resources/research/workplacesmatter.asp>
- Delbridge R, Edwards P, Forth J *et al.*, 2006, *The Organisation of Productivity*, Advanced Institute of Management Research: London. This is a summary of a workshop that identifies where a new approach to productivity problems may lie.

The studies and viewpoints canvassed in these surveys concentrate – as is to be expected – on methodological details and heavily qualify the conclusions in the light of the limits of scope that are imposed by the analytical methods used in each of them. This report does not summarise them. Rather, it tries to extract recurring themes and tease out implications.

## Lessons from the research

At the risk of oversimplification, the literature reaches three conclusions:

- Improved productivity and organisational performance has been attributed to a number of “interventions”: better training, enhanced managerial capability, employee engagement, improved employee recognition and reward, innovative production practices and more. The key finding though, is that *on their own*, any one intervention is likely to have limited impact. In other words, the *additive* effects of interventions must be recognised. Hence training, on its own, is likely to have a limited payoff in terms of improved productivity. Indeed, in the case of skill development, unless managers have the capacity to utilise skills effectively then training may have little value. This implies that sequencing of change is sometimes important.
- Interventions of this nature do add cost. They are more likely to add value in firms that have a competitive strategy based on the delivery of high-value products and services, and to have limited (or net negative) returns in high volume business models that rely on minimising cost. They are not a universal panacea. Furthermore, managers can often be certain about the costs and when they will occur, but much less so about the rewards and when they can be realised.
- It is not just the nature of the interventions that matter, but the manner in which they are deployed. For example, engagement of employees through unions can be a high value intervention or it can have negative consequences – It is not simply whether there are unions or not, it is what unions actually do! This implies that there is not a simple ‘menu’ of interventions to select from, but rather that the process of putting that intervention in place is just as important in pursuing a high productivity objective.

Each of these needs some explanation and enhancement.

### ***Direct returns to training***

Although most studies of organisational performance acknowledge that there are advantages from ‘bundles’ of workplace interventions, a large number of studies have tried to identify the returns that are distinct to training. Almost all of these studies are qualified by the obvious and real difficulties of isolating returns to training when in practice ‘cause and effect’ are blurred. (For example, educational attainment may reflect innate ability rather than developed skill, the existence of ongoing learning is harder to codify than formal education, people seldom fully use all the skills they have in the particular circumstances of their current job etc.).

Returns to training can accrue to the individual, the organisation or firm, and – through these levels – to the economy and country as a whole. The motivation of each party to take part, and invest, in training will be influenced by the distinct benefits each enjoys. If there are not mutual benefits, training is likely to be dependent on public funding, and/or is unlikely to take place or be effective. Complicating the picture is that the motivation of the individual is often the prospect of higher wages (although not exclusively: it can be the prospect of improved career prospects, less risk of redundancy, or increased prospect of still further training). However, higher wages are a cost to the employing organisation, which will therefore only invest (and expose itself to the higher cost profile) if expected returns exceed that cost.

### ***Returns to the individual***

Returns via intangibles (job security, job satisfaction, career progression) are hard to quantify and so most studies use the wage premium to training as the best proxy for the returns to the individual.

Summarising, the literature suggests that:

- There is a positive association between wages and the level of the formal qualification the individual attains.
- The wage premium is additive: additional qualifications boost the wage advantage.
- Qualifications improve the prospects of further training, so that this additive advantage is itself a product of training.
- The premia can be quite marked (a degree qualification adds about 75 percent to the expected earnings of a man and about 68 percent to those of a woman compared with no qualifications)<sup>1</sup>.
- 'Academic' qualifications are associated with markedly higher wage premia than do 'vocational' qualifications, which, at least in the early stages, produce very modest wage gains (if any). In the latter case it may be that employability and reduced risk of redundancy may be the form the advantage takes, but this is hard to measure across the business cycle.
- Off the job training is associated with a greater wage effect than on the job (though, of course, this may be influenced by the above bullet point relating to 'academic' versus 'vocational' qualifications).

---

<sup>1</sup> Campbell M (2002) *Learn to Succeed: the Case for a Skills Revolution*, Policy Press

These last two findings might not be of huge comfort to New Zealand ITOs, although they do have implications for the design of training.

The number and depth of studies surveyed relate to the UK. Their conclusions are generally in line with the relatively less extensive literature about returns in a New Zealand context.<sup>2</sup>

### ***Returns to the Nation and Organisation***

Benefits of the returns to education have been estimated at national and organisation levels. Given the complex interactions of labour and capital developments, differences in industrial structures, stages of the business cycle and so on, isolating these impacts is difficult indeed. However, with all necessary caveats, researchers prepared to put a figure on the impact have concluded variously that:

#### *To the Nation*

- Increasing education by one year raises per capita national output by six percent.
- In the US, between 1948 and 1986, labour input contributed 61 percent of productivity growth, of which 42 percent was due to changes in labour productivity.<sup>3</sup>

#### *To the Organisation*

- Higher performing and more productive firms hire workers with extra qualifications.
- The skill gap between the top and bottom performing firms explain eight percent of the productivity gap between them.<sup>4</sup>
- There is a strong relationship between levels of workforce skill and the sophistication of products offered.
- Higher skills are associated with other qualitative features of firm performance: commercial orientation, strategic awareness, propensity to innovate, increased prospect of business survival.
- Higher skills are associated with technological complexity and originality.
- Returns to training tend to be more positive for persistent trainers, but weak for ad hoc trainers.

---

<sup>2</sup> See, for example, Abbott M and Doucouliagos H, 2004 and Maani S, 1999.

<sup>3</sup> Sianesi B, van Reenan J (2002) The Returns to Education: A Review of the Empirical Macroeconomic Literature, IFS WP 02/05

<sup>4</sup> Haskel J, Hawkes D, Pereira S, (2003) Skills and Productivity in the UK Using Matched Establishment, Worker and Workforce Data, CeRIBA

- There is a clear connection between higher skills and higher productivity, particularly at the intermediate skills level. This is an interesting finding, because it does create a tension. If intermediate skills generate benefits to the firm, but no significant wage gains to the workers, there is a mismatch in the incentives of both parties to design and take part in training. It might be that the mutual interest may reside in the non-wage benefits to the workers, but this needs to be carefully worked through.
- Investment in capital equipment remains a critical factor in determining relative productivity performance across countries.

The link here is not so much a direct one with training generating productivity improvements, but rather one of training being an enabler: enabling flexibility, the deployment and effective operation of new machines and processes, and reduction of defect rates and meeting exacting customer standards.

In this context, training that is not related to facilitating more sophisticated products and processes is largely wasted: it is simply not used. Indeed, it can have negative effects: increased cost with no return for the firm, and increased frustration and disappointment for the employee. (However, it may be that training people to enable job rotation in less sophisticated work settings may improve productivity by making mundane work more interesting to the individual.)

The *context* in which training is designed and delivered therefore needs to be assessed alongside the decision to invest in it. It needs to be a part of, not separate from, the strategy of the business.

### ***Training versus skill***

Organisations can attain skills by training existing staff or through recruitment. Particularly for levels of skill that are more effectively developed off job, recruitment is often a more cost effective method of acquiring the required skill set, but even when this happens, progression within the organisation (partly associated with continuous learning) has been found to be a feature that is positively associated with strong performance.

## **"Bundling"**

As noted earlier, the literature suggests that workplace practice interventions have bigger and more lasting impacts if they are introduced as a complementary package or "bundle". This section of the report therefore looks at the elements that might be added to the bundle to unleash the latent benefits of investment in training.

High performance organisations combine:

- High value *product* (high quality, specifically tailored to specifications as required by customers)

*WITH*

- Efficient *technology* (in both meeting product specification and reducing cost through high output, low waste, minimal defect and reworking etc)

*WITH*

- Innovative *processes* (including through the way that work is organised)

*AND*

- Workforce input that is *supportive and willingly engaged*.

There is an extensive literature on the production engineering dimension of this mix (using concepts such as 'lean manufacturing', 'high performance workplace systems' and similar). For the purposes of this report, the emphasis is on the workforce support role in what have variously been described as 'high commitment management' or 'high involvement management' systems.

Various studies have produced long and short lists of the "elements" of workplace practices and relationships that contribute to good performance. Ashton and Sung (2002) have synthesised these into four practice "dimensions":

- Support for employee performance (training, appraisal systems, mentoring) which are directed at achieving the aims of the organisation.
- Employee involvement and autonomy in decision making (self-managed work teams etc).
- Rewards for performance (individually and by group).
- Sharing information and knowledge (communications channels) that both enable a full contribution to organisational goals and a way of capturing enthusiasm.

The authors have subsequently re-cut the classification into:

- High employee involvement practices.
- Human resource management practices.
- Reward and commitment practices.

but the essential concepts are unchanged.

The underlying logic is that for people to perform above a minimum level dictated by organisational routine, they must:

- i have the ability to make the contribution (skills and knowledge);
- ii be motivated to work well; and
- iii be given the opportunity to use their skills.

The whole mix of work organisation, technological alignment, empowerment, motivation and reward, operating at both the individual level and through groups and teams is difficult to construct in a formulaic way. The literature makes a distinction between studies that argue that there are 'universalist' practices (ones that will always produce improved performance if they are adopted) and those that suggest they need to be 'contingent' (designed around the specific circumstances of the organisation).

In reality the distinction is probably academic: good practice tends to have common attributes but needs to be customised for maximum impact.

In summary, training is more effective when introduced as an element of a wider suite of employment relations practices (engagement, empowerment, reward etc), which in turn both enable and are facilitated by production management variables that are consistent with high productivity and high performance (product, technology, process) and delivered through compatible work organisation.

The focus here, though, is on productivity, and in a New Zealand context this suggests that new initiatives need to be grounded in, and link to, the 'seven drivers of productivity'.

### ***The seven drivers of productivity***

The seven drivers of productivity are:

1. *Building management and leadership capability.* Effective leadership is about having a clear vision of where your business is heading. It's about identifying new opportunities and inspiring your team to pursue those opportunities. Leadership is required from individuals and from teams.

2. *Creating productive workplace cultures.* Positive relationships between staff, teams and managers are a feature of productive workplaces. A positive work environment motivates people and helps them commit to the organisation. People feel encouraged to 'go the extra mile'. It's also important to value people's insights and experience. Their ideas can help your workplace to do things smarter and better. That means your business will become more innovative and productive over time.
3. *Encouraging innovation and the use of technology.* Innovation is a key part of raising workplace productivity. Productive workplaces are innovative in the way they use technology, and plan and organise themselves. They generally employ more highly-skilled and highly-paid workers and through innovation they increase their market share.
4. *Investing in people and skills.* The more skills your staff have, the more innovative they can be. They will also be more capable with new technology. Skilled workers can also work more quickly with fewer mistakes. They generally require less supervision, accept more responsibility and are better communicators. Training leads to higher skills and wages and lower staff turnover.
5. *Organising work.* Productive workplaces have structures and processes that enable them to adapt and grow as products, technology and markets change. A well-organised workplace is able to get the best out its staff and technology.
6. *Networking and collaborating.* You can improve your workplace productivity by exchanging ideas and information with others in your industry. Collaborating with others can reduce the cost of doing business and give you access to new ideas and new technologies.
7. *Measuring what matters* It is really important to assess the value of any investment you make in improving your workplace productivity. This helps you understand the things that make the biggest difference. For example, is it the size of your business operation, the skill levels of your staff, the size of your market or some other factor?

Training and supportive bundled HR practices:

- i depend on effective management capability and leadership
- ii can facilitate innovation and the use of more sophisticated technologies
- iii contribute to more productive workplaces.

In this productivity construct then, the mix is partly directly relevant to one driver, depends on the existence of another, and is facilitative or contributes to at least two others (productive workplace cultures and work organisation). Intuitively, they are

therefore quite central to the productivity agenda, but equally can have their effectiveness diluted if the right combination is lacking in even relatively small (but critical) elements.

This then leads into a consideration of what the literature indicates is achievable in terms of translating conceptual productivity improvement measures into practical workplace support interventions.

The basic dilemma is that in the conventional workplace, employees are closer to customers (and have a more realistic notion of customer preference) or to production process and service delivery (and have a more intimate knowledge of how that can be improved) *but* they have few incentives to make suggestions for improvement (unless it makes their lives easier), and because they are doing routine jobs they lack a wider view of the production and delivery process (business strategy) and so have a more limited feel for where potential improvements can be made. Work groups can also decide to either work with or against managers depending on the prevailing culture.

Managers are critical to workplace change, but without the active consent of employees cannot make much progress. The task is to find out how to break into the circle.

## **Practical interventions**

### ***Vision in Print***

While the literature suggests that investments in training, accompanied by the adoption of various HR, employee engagement and employee motivation processes improve productivity, it is not clear if and how this can be *organised* as an externally based intervention to alter practice within the firm.

In fact, when performance and productivity supports are offered as a type of advisory or consultancy service, they tend to be much more hard wired around engineering, work organisation and technology adoption systems. In other words, they focus on the *production process* rather than the *people* (including the contribution of managers/owners) side of the equation.

A good example is the Vision in Print initiative, developed from a UK Department of Trade and Industry funded industry competitiveness study, and published by the British Printing Industry Federation.

The study report (Print 21) identified seven key aims for improving the competitiveness of the sector, and 37 specific actions required to achieve them. One of these aims was to strengthen the industry's education and training infrastructure and one was to improve the industry's quality of management.

However, when the Print 21 recommendations were translated into a specific set of industry assistance programmes (ViP) – see figure 1 – the strong emphasis was on process improvement activities.

**Table 1: Vision in Print industry assistance programmes**

<b>Programme</b>	<b>Focus</b>
Premier snapshot	Reviews current management procedures.
Operations assessment	Diagnostic for use by companies that supply equipment and consumables to the industry.
Modular improvement programme	Recommends improvement activities for small companies
Kickstart	Improvement programme focussed on areas with potential for fast returns
Picon Vision	Process improvement programme for suppliers
Masterclass Lite	Process improvement programme for mid-sized firms
Masterclass	Process improvement programme for larger firms.
Booster	Follow-up programme for companies that have previously participated in one of the others
Office and Prepress change cycle	Streamlines information flows for customer service
Team leader training	Training for those with direct operations responsibilities and covers skills associated with motivation, delegation, leadership and time management
Materials waste reduction	Identifies biggest and most easily remedied causes of materials waste
5C roll out	Attempts to improve workplace order
Lean focussed maintenance	Reduces downtime of equipment through improved maintenance

Without knowing the detail of exactly how these programmes operate in practice, it appears, at least intuitively, that only one has a specific ‘training’ (as opposed to instructions around changes in organisational process) emphasis, and even then it is for those employees with direct responsibility for operational process, again reinforcing the production improvement emphasis.

***“Soft-wired” guidance: the IES indicator framework***

The Institute for Employment Studies research project measuring the contribution of skills to business performance was used to develop a framework of indicators that could be used by organisations to generate and inform internal debate regarding decisions on training, development and management in a way that was actionable via activities that can be deliberately manipulated to alter performance over time (Tamkin 2005).

This operates in two dimensions. One relates to the development of employee competency and ability (recruitment, training) and the deployment of that capacity (engagement, involvement). The other distinguishes between the individual and the organisation. Combining the dimensions establishes four quadrants (named ability, attitude, access and application) to create what is described as a 'model of capability' (the '4A Model') – although it is actually more of a framework than a model. This is used to establish some concrete indicators that organisations can use to think about how to develop performance enhancing capability.

The list of indicators produced in the study is very long (there are 38). The authors accept that this is larger than ideal, but the intention is to test them over time as indicators of improved performance in order to isolate a smaller subset that can link more strongly with performance.

In the meantime, and for completeness, the suggested indicators are listed below with a direction indicator showing whether a positive or negative trend is consistent with improved performance.

**Table 2: Performance indicators**

<b>Access indicators</b>		<b>Ability indicators</b>	
Proportion of vacancies filled internally	+	Proportion of non-managerial workers getting training	+
Proportion of jobs subject to test on recruitment	+	Average training days per annum for non-managerial workers	+
Average no of recruits fully experienced on recruitment	+	Training \$ per non-managerial worker per annum	+
Proportion of vacancies that have a person specification	+	Average training days per manager per annum	+
Proportion of interviewees trained in interview techniques	+	Average training \$ on management training per manager p.a.	+
Proportion of jobs for which there are clear internal successors	+	Proportion of workers with current personal development plan	+
		Proportion of non-managers with degree or equivalent	+
		Proportion of managers with degree or equivalent	+
		Proportion of workers with formal quals. to level (? NZQA equivalent)	+
		Proportion of managers who are fully proficient	+

		Proportion of key workforce who are fully proficient	+
		Proportion of training \$ on accredited training	+
		Proportion of training which is generic v specific	+
		Proportion of training linked to business strategy	+
<b>Attitude indicators</b>		<b>Application indicators</b>	
Turnover	-	ICT spending as % of turnover	+
Proportion of lay-offs in last two years	-	Existence of formal process for employee involvement	+
Absenteeism	-	Proportion of employees involved in business improvement processes	+
Short-term absences	-	Frequency of meetings with staff reps to discuss employee matters	+
Proportion of workers on profit related bonus	+	Percentage of workers who are multi-skilled	+
Percentage receiving performance pay	+	Autonomy questions	+
Percentage of pay that is variable	+	Strategy of the organisation	+
Percentage getting annual performance reviews	+		
Frequency of one-on-one private discussion with line manager	+		
Attitudes (engagement and trust)	+		

There will be questions about how relevant all of these indicators would be for an individual firm. The relevance of degree qualifications in non-managerial positions, for example, may not be relevant in a process context. Equally, some indicator directions appear to be contradictory. If the proportion of generic training should be rising as well as the proportion linked to the business strategy, there would have to be some imaginative classifications of types of training to co-ordinate that! In addition, some indicators (like 'proficiency', 'trust', and 'autonomy') tend to be somewhat subjective and difficult to measure.

The final problem is that this set of indicators tends to separate out from indications of trends in product or process sophistication, whereas the general literature suggests that the more sophisticated human resource "bundle" of measures only pays off if embedded in a business model that is based on differentiated products and the use of innovative technologies and work organisation.

## Summary

- i The literature confirms the validity of the logic that developing skills in isolation will have a limited (and probably delayed) impact on productivity. A supply-side 'skills push' has not demonstrated major productivity gains. Rather, the emphasis needs to go onto a coordinated and contemporaneous development and deployment of skills.
- ii There is no clear cut, one-dimensional cause and effect linkage between training and productivity. Rather, there is a dynamic interaction within workplaces with the more effective deployment of skills itself creating a demand for the enhancement of those skills.
- iii It is difficult to disentangle the factors that contribute to improved organisational performance, but on the other hand there may be no need to (except of course at the level of the firm).
- iv It may be that workers with ability and a positive attitude are more likely to develop and apply skills, rather than training itself developing that ability, but this is probably irrelevant. If there is a process of self-selection that is actually a positive (backed up perhaps with some incentivising): it means that there is something of a behavioural and attitudinal filter operating, and this is likely to reduce wastage through inappropriate targeting of training.
- v Enhanced personal capability facilitates and enables the introduction of more sophisticated and innovative technologies and workplace practices, but the introduction of those production processes creates the demand for enhanced personal capability. It isn't necessary to try and sequence supply of skill versus demand for it: the two evolve alongside each other. However, training systems need to align with need so that there is no organisational gap developing.
- vi There is a tension between process engineering and the bundle of HR practices needed to capture the productivity potential of any organisation. While the literature suggests that both are needed, diagnostic toolkits, guides, indicators and consultancy resource supports tend to focus on one or the other. The challenge is to develop an integrated package that avoids an either/or orientation.
- vii There is also a tension between generic ('universalist') and customised practice interventions. While elements of both are needed, the more the balance of activity shifts towards the customised end of the spectrum, the more expensive and

resource intensive activity becomes, and the slower it penetrates a sector, let alone the wider economy.

- viii Interventions need to resonate with management, because in the first instance they are disruptive and are a cost. Demonstration effects will tend to improve receptiveness over time, but in the absence of proven results before the event, there will be a need for a reasonably heavy 'front-end' investment of time in identifying the specific needs of the organisation and in developing an understanding of and commitment to the proposed intervention by senior management.
- ix Training and improved workplace practices are unlikely to be cost effective where the business model is crafted around stripping out cost in a high volume production environment..
- x It is possible to develop structured and explicit indicators to act as proxies for performance improvements that flow from training and work practice changes. However, the risk is that these can become too complex, and produce somewhat ambiguous conclusions. There is a trade off between comprehensiveness and utility.
- xi Finally, there is considerable uncertainty about the time needed for new initiatives to generate demonstrable gain, and embarking on a productivity enhancing process does have to be taken on trust to a considerable degree. Shaping expectations at the outset is necessary if a project is to avoid being deemed a failure by virtue of it having established goals that are impossible to achieve!

## **THE EXPERIENCE OF NEW ZEALAND ITOS**

In recent years a number of New Zealand ITOs have been experimenting in a variety of ways with expanding the breadth of their agenda and service offer to clients. These initiatives are motivated in part by:

- i reasonably dogged resistance on the part of many employers to the traditional business of ITOs of marketing unit standards, qualifications and training (“boy have we got the training and assessment package for you!”);
- ii significant challenges to New Zealand’s competitiveness in manufacturing as evidenced by a steady flow of manufacturing capacity to lower cost producers, as well as increasing competition from imports sourced from these producers, resulting in the need to respond in some way;
- iii a growing awareness in recent times of the extent of New Zealand’s labour and multi-factor productivity challenges; and
- iv the accumulating experience of ITOs in recognising that training is simply one part of a more complex answer to meeting the needs of their business clients in an environment where both industry and ITOs are seeking new ways to leverage their growing connectedness.

This section of the report briefly reviews the experience of a number of manufacturing based ITOs who are engaged in responding to these challenges by developing a broader offer of services. It is intended as an over view rather than a comprehensive survey or in-depth evaluation. These are: the Apparel and Textile ITO (ATITO), the Competitive Manufacturing Initiative (CMI), and the Agriculture ITO (AgITO)

### **Apparel and Textile ITO**

ATITO is the industry training organisation for carpet manufacturers (currently the most successful part of the industry), knitters (reasonably successful and focusing of short production runs), and apparel (smaller scale, niche, and the most volatile part of the industry).

The leadership of ATITO is very clear about seeing the support of improved productivity performance as a way of providing a much sought after expanded service to their clients that no one else is in a position to provide.

A survey of members that asked: “what is the one thing that the ITO could do to help your company?” came back with the answer: “help with productivity.” This response together with the early experience in dealing with the needs of several clients has helped shape a new strategic direction for the ITO.

### **The case of Swazi**

Swazi is a Levin based manufacturer of out-door clothing. An ATITO staff member engaged in a discussion with the company about training was told by the company they had a specific issue in working out the standard ('best practice') time it should take to produce a particular product. The ITO organised for two staff members to receive training in the measurement of standard time so that the company could then assess its performance against an industry standard. In the course of this exercise, discussions between the ITO staffer and the Manager revealed that supervisory staff needed to be up-skilled. Eight Supervisors are now receiving training in first-line supervision.

Meanwhile the Company had realised that they were falling short in achieving the productivity standard for the manufacture of the original garment and asked the ITO for help. ATITO called in a trusted consultant who knows the industry and this person has spent 80 hours over an eight month period looking at workflows, the work of machinists and indeed the whole work system. This work has led to suggested changes in plant layout, work allocation and a number of other changes some of which will involve further staff training. These changes are now being implemented.

### ***ITO positioning***

In terms of positioning, the ATITO believes its direct connection to its industry means it is uniquely placed amongst industry support and/or government agencies to have discussions about business issues and performance as a natural topic of discussion with clients. In particular its advantages include:

- having regular and direct contact with client companies
- being able to provide relevant services (training, standards, qualifications) that either directly or indirectly affect business outcomes
- being increasingly perceived as the industry service provider that is looked to by its members for various forms of assistance
- having a long term presence in the sector and being able to build durable relationships and provide support and continuity after any particular intervention.

### ***Changing the nature of the "conversation"***

The ATITO has realised that by addressing broader business issues, including productivity, in conversations with clients it is inevitable that skill development and application become highlighted as components of an integrated approach to productivity improvement.

*Ultimately, ITOs need to be delivering skills at some stage in order to fund their activities but that may not now be where the conversation with clients starts. [ATITO staff member]*

This approach has produced a far better reaction from employers than the conventional methods of ITO Field Officers starting discussions about training needs and qualifications:

*Saying 'we are here to talk about up-skilling your staff' falls on deaf ears. In this context training is seen as a cost. [ATITO staff member]*

Instead, if the starting point of a conversation with a Chief Executive, General Manager or business owner is about the state of the business, issues they face etc., this tends to naturally lead to discussions about business performance and productivity rather than a focus on just training.

Much better to start with: 'we are from the ITO, what can we do for you?' [ATITO staff member]

### ***Changing requirements for ITOs (staff and resources)***

The ATITO has noted that a shift in the conversation of this nature requires on the part of ITO staff:

- direct contact with key decision-makers
- a certain level of industry knowledge
- a capacity to engage in a meaningful discussion about complex business issues.

Such conversations need to be credible to capture the interest of busy business owners/managers. This implies the development of some internal ITO capabilities among staff who are in direct contact with clients to do with: the ability to meaningfully converse with senior managers, an understanding of core business strategies and processes in the sector, a working acquaintanceship with the productivity drivers and their integration, and some analytical abilities in making an initial assessment of what might be required and what are the next steps.

The ITO has observed that it takes time to develop these capabilities to the level required by the ITO. They have four staff with this capacity, and in the case of the 'newest' recruit it has taken five years to develop it. Currently, the ATITO is developing two other projects: one using a consultant with a background in Apparel to help redesign a process for garment manufacture; the other involving a 'high-end' and system wide approach to lean manufacturing. These projects are regarded as the "thin edge of the wedge" as the ITO is seeing plenty of opportunity, need and demand for this kind of support. Scaling up to meet it is the challenge.

Apart from staff capability to engage with businesses and make some initial assessment of need, the other dimension that needs to be provided is to do with creating and accessing suitable consulting support and other resources to assist in meeting these needs. The ATITO is using its membership of the CMI to provide support in this area (see more about the CMI below). The CMI has invited a range of consultants to submit expressions of interest in becoming Preferred Status Consultants available to help companies wishing to make significant performance improvements.

The ITO leadership believes it has the legal mandate under the new industry leadership responsibility provisions in the amended Industry Training Act 1992 to take this approach to achieving its remit.

### ***The training link***

At this early stage of development, the ATITO is likely to pursue the creation of an Apparel and Textile training qualification (up to Level 4 of the National Qualifications Framework) with some components relating to the specific circumstances of niche manufacturing (small scale and specialised) in apparel and some relating to lean manufacturing. To this could be added some higher-level (Levels 5 and 6) competitive manufacturing qualifications for those wishing to progress further. In other words, the 'hands-on' experience of working closely alongside members on company wide issues has led to some fresh thinking about and refinement of what qualification mix is best suited to the needs of the industry. This is supplemented by accessing the ATITO's extended networks with broader manufacturing sector developments linking the competitive and productivity needs of manufacturers to a more targeted and appropriate range of skills and qualifications.

### ***Reflections***

While these initiatives are fledgling they have been warmly received by members and feel like a natural and well grounded progression for the ATITO. When asked to reflect on what has been learnt to date, ITO leadership made the following observations:

While many issues are generic to all manufacturers it is important to see each company as having a unique combination of issues that require customised, not off the shelf solutions.

There is significant demand for the sorts of services referred to in this section, particularly from small to medium sized New Zealand firms.

It is critical to have someone inside the client company who stands to gain from supporting a particular initiative. It is not sufficient to have the 'boss' say "yes this is all good", and then handing the real work to someone who has no ownership of it.

The CMI is a good model for ITOs to support because it is capable of rationalising resources and development costs, facilitating the open sharing of information, building synergy between projects as well as cooperation between ITOs

Absolutely of key importance is how these initiatives get introduced into the workplace. Gaining access to and having a real and credible conversation with key owners/managers is vital.

A new business paradigm for ITOs' thinking about the link between skills and productivity is needed, together with the skills, ability and resources to deliver it meaningfully on the ground.

## **Competitive Manufacturing Initiative**

### ***Background***

The CMI has its origins in the manufacturing-related ITOs' response to industry demands for a certificate in Total Productive Maintenance in 2001/02, which led to a Level 3 qualification with six to seven unit standards. While there was not a great take-up of this qualification, those that did were soon pressing for a Level 4 qualification.

At the same time The Australian Skills Council came with an offer to Competenz<sup>5</sup> proposing a joint venture in a Competitive Manufacturing (CM) qualification geared specifically to skill-sets required by manufacturing industries to be internationally competitive. While Competenz were not able to pick up the offer at that time, FITEC with the support of the Engineering, Printing, and Manufacturing Union (EPMU) expressed interest and became the conduit for CM in New Zealand. Initially modified qualifications were developed at Levels 3 and 4 of the New Zealand Qualifications Framework. The New Zealand Qualifications Authority (NZQA) decided that it wanted to see the support of all the major manufacturing ITO's for the qualifications before it would register them.

In 2005, a memorandum of understanding was developed as the base document for a new consortium comprising: NZITO, Competenz, ATITO, Print NZ Training, FITEC (now incorporating Furniture ITO), Plastics and Materials Processing ITO, Seafood ITO, and the Boating ITO. The EPMU is an observer at CMI meetings. The Memorandum referred to the development of standards and resources, and an agreed moderation process for CM qualifications.

---

<sup>5</sup> Competenz is the Industry Training Organisation that covers the engineering, food and beverage, baking, manufacturing, and maritime industries.

While the CMI includes membership from some of the smaller ITO's in the manufacturing sector and ITO's representing predominantly small to medium sized businesses, there is an implicit acknowledgement that the CMI tends to focus more on meeting the training needs of medium to larger scale companies. A sub-set of ITO's (ATITO, Plastics and Materials Processing, Print NZ Training, Boating, and Furniture) have formed a niche (or 'light') manufacturing group approximating NZTE's niche manufacturing initiative as a special case.

### ***Shift in emphasis***

Members of the consortium report that in the last 12-18 months it has become apparent to them that they cannot simply 'sell standards' in competitive manufacturing qualifications to client companies:

*While we have developed good resources and qualifications, no industry has really benefited yet, except tangentially. [CMI member]*

What the CMI members have discovered is that companies' first need to create a more conducive workplace culture that is receptive to the 'lean manufacturing' orientation of the qualification. This implies that there are organisational (not just individual) capabilities required, such as working out how to work collaboratively and how to enrol people in willingly focusing on smarter work practices. These capabilities do not easily translate into qualifications and yet are the key to improved competitiveness. Qualifications may indeed be a downstream consequence but are seldom the starting point for genuine engagement about improving performance.

Thus the CMI's emphasis has begun to shift, for example, towards involving consultants in helping workplaces create the cultural and work process changes needed to embed continuous improvement methodologies and other productive practices.

Indeed, the members of the Initiative have broadened their scope beyond lean manufacturing and process re-engineering to embrace other productivity initiatives and to seek to work cooperatively with complementary programmes and organisations (e.g. the Workplace Productivity Agenda). This includes understanding the critical importance of management style and efforts to engage workforces and unions.

### ***Productivity skills connection***

This significant shift in emphasis by manufacturing industry ITOs towards a broader focus on improving performance has spawned a number of fresh initiatives. Both the CMI and Skills4Work (a training provider with strong links to Competenz) are in different stages of assembling a network of accredited consultants. Skills4Work has also developed a proposal to New Zealand Trade and Enterprise (NZTE) that seeks substantial funding support to establish a dedicated centre to build capability and resources to support productivity-related interventions tied to training, qualifications and performance outcomes. This coincides with CMI's recognition of the need for a coordinating organisation that can build expertise, broker consultancy services, conduct research and generally act as the central repository for knowledge gathering and dissemination about workplace productivity improvement and its connection to training, qualifications and ITOs.

However, there are a number of impediments to systematising this approach and scaling it up sufficiently to make a tangible difference to industry productivity:

- i ITOs secure their funding according to the number of individuals who enrol in units towards qualifications so there is no credit or funding given for improving company performance.
- ii While some of the skills needed by companies can be delivered via some existing and new unit standards, others are site specific and need to be delivered just-in-time
- iii These factors may affect the capacity of the industry training sector, as it is currently configured, to fund the scaling up of these new approaches to supporting productivity improvement in client companies.

### ***Opportunities for coordination***

Both CMI and the Niche Manufacturing Industry ITO sub-set have received funding from the Tertiary Education Commission (TEC) through its Sector Leadership Component pool. While there are some differences in approach, both projects focus on building understanding of the links between manufacturing success, productivity improvements and investment in skills and training, as well as building some capacity to take effective action in this field. They also seek to work cooperatively with other related initiatives.

### ***Consolidated learnings of CMI***

The following reflections have emerged from the experience of the CMI to date:

- There is a clear demand from New Zealand manufacturers for support in improving productivity and performance. Different organisations have quite

different needs: for example, some need active consulting assistance, while others need on-going mentoring support.

- The challenge for ITOs is to create a meaningful offer to SME members and to find ways of talking to them that builds confidence and helps to shape up workforce development projects and other organisational change initiatives. ITO staff need to be supported in developing the skills and know-how to engage effectively with companies in conversations about performance and the training/productivity link. Some initial work is already being undertaken in this area.

### **Key Capabilities for ITO staff**

Key “front-end” capabilities needed by ITO staff as identified by the initial experience of CMI include:

- getting the focused attention of key managers; being able to understand the essential business dynamics involved;
- being able to identify and explore the possible range of issues and how their resolution may lead to an improved bottom line;
- demonstrating that long term gains lie in seeing a ‘change project’ as more than a one-off gain but instead being about a different way of doing business that is still aligned with their financial objectives and personal plans;
- paying attention to the needs and future role of those who believe they have something to lose (e.g. supervisors) when staff are empowered; and
- being able to point interested companies towards the particular resources and forms of support that best meet their needs.

- Support infrastructure (e.g. research, tools, consultancy and learning networks) are necessary components in the mix of initiatives so that companies can access the external assistance they need. Larger companies tend to have greater access to internal resources to support productivity enhancing initiatives and are more likely to want to access the new competitive manufacturing standards and qualifications. Small to medium businesses tend to rely more on external expertise and facilitation support and may incorporate relevant elements of the CM qualifications into the mix.
- There is a perceived risk that some companies will access support to drive a particular improvement project (e.g. process redesign to improve work-flow), take the gain (both company and consultant), and then cease the project. CMI is more interested in sustainable projects that aim to embed the know-how for on-

going change and for which skill development is a likely outcome. Sustainable projects tend to be characterised by higher levels of workforce (and union, where present and positively inclined) involvement.

- There is a need to build good working understandings and long-term relationships between ITOs and consultants/providers so that each party is clear about their respective roles and expectations and there is a willingness to share knowledge and resources.
- In sum this is beginning to add up to a quite different way of working for ITOs based on the changing needs of their members. The current model has been one focused on the individual and their skill development and qualifications, whereas the focus of the emergent model is on the needs of the overall business. This includes but is not limited to its need for skills and how they might be applied and integrated in to the overall mix of factors contributing to performance. The 'trick' for ITOs lies in being able to respond to both. The starting point is enabling companies to be ready to adopt a more holistic approach to improving performance.

## **Agriculture ITO**

The AgITO is primarily focused on supporting skill development and qualifications for mostly pastoral farming businesses. Like many ITOs, they have repeatedly been faced with the question from farmers: "Why should I pay for staff to be trained? What is in it for me?"

### ***ROI to training***

AgITO, who were keen to demonstrate the payback from investment in training, undertook a research project that drew on the work of Brinkerhoff, a US academic and consultant focussed on 'High Impact Learning'. Brinkerhoff identified that time and effort invested in both the preparation for and follow-up of a training event yielded a significantly greater return on investment in training.<sup>6</sup>

The research, which used a 'Reporting Value-added to Training' model, found that even with relatively poor front and back end support, Dairy farmers achieved a 3.4 : 1 ROI and Sheep and Beef farmers a 4.9 : 1 ROI in training, (including both laggards as well as early adopters). It also identified that New Zealand farmers tend to be better at follow-up with a trainee (e.g. applying learning and testing ideas) rather than providing support at the front-end. It was clear to the AgITO that with improvements in front and back-end support for trainees' returns on investment had the potential to be much greater still.

---

<sup>6</sup> See, for example, Brinkerhoff and Apking (2001).

### ***Cost of poor quality conversations with staff***

In subsequent forums with farmers to look at the research results, they also found that employers were notoriously poor at having 'proper' conversations with their employees which meant that many opportunities to refine and apply skills and techniques, be more innovative, and work cooperatively were going begging (as was the potential for greater ROI from training).

AgITO experience is that the traditional New Zealand small to medium sized business owner works off a logic which goes something like the following:

I am the owner who has invested the money and time.



I got taught this way.



Do what I say.

The AgITO subsequently developed some 'how-to' conversation templates designed to lift the skills (including use of language) of farmers to enable them to improve the likelihood of "firing up the interest of employees" and achieving a better application of skills and knowledge once trained. This effort aims to both improve the quality of the training experience (training completion rates are currently tracking at 20% of enrolments) and business performance of the farmer.

The initial success of this research and intervention has encouraged Dairy New Zealand, the research and development arm of the dairy industry, to further explore the direct link between the AgITO's programme and on-farm productivity improvement.

### ***Re-thinking qualification needs of farmers***

The AgITO has also embarked on incorporating new communication and human resource skills into its revised industry qualifications. They report a rapidly growing interest from farmers in accessing 'soft-skills' and plan to develop a qualification in HR skills with units sequenced as follows<sup>7</sup>:

- Employment law and obligations
- Recruitment and retention of staff

---

<sup>7</sup> Note that this qualification is in the process of being developed and is not currently available.

- Team development and management – all naturally progressing to
- ‘Win-Win’ conversations

*Win-Win conversations* is a licensed US tool for learning how to communicate effectively with staff. The tool uses video, observation and feedback to:

- illustrate the different behaviours we exhibit in conversation
- collect data and provide feedback on an individual’s conversational style
- compare and analyse styles and their impact on others
- recognise others style
- provide tools to help people modify their behaviour/language.

The idea is to walk away from a transaction intact and knowing that “it is not all about me.”

As noted by the Chief Executive of AgITO:

*We find that the key is the way we talk about it. We don’t need fancy words but good quality and well informed conversations are under-rated.*

### **Where next?**

AgITO is keen to embed these capacities into the ITO to enable it to engage more effectively with farmers around the initial question: “Would you like to get the best out of your staff?”. However, they have experienced difficulties in creating buy-in from their own employees who are expected to lead out this approach in their dealing with farmers:

*A lot of our ITO staff aren’t up this new role. About 10% have signed up philosophically with the rest not so keen. We have made some mistakes in not modelling the message in the way we introduced it and now need to re-design our approach for getting our teams on board. [AgITO Chief Executive]*

Newer staff have found it easier to adapt than longer serving staff who are more wedded to standards and qualifications. Winning over AgITO staff and equipping them to engage in these more sophisticated processes is the key to making progress. The ITO is committed to developing this new dimension of their business but acknowledges that not all staff may be able to, or want to, make the transition.

Considerable effort is being made to assist staff to adapt including modelling the Win-Win programme internally by running regular training, developing role plays, putting demo conversations onto staff lap-tops etc.

AgITO has also set up a new project management/consulting arm which aims to develop these Win-Win capabilities on a commercial basis.

In reflecting on these developments, the CE refers to the action-research and developmental nature of how these new ways of working have unfolded, with each phase producing outcomes that point the way to subsequent phases. This approach has enabled the ITO to move confidently in new directions in the knowledge that there is a sound evidence base for what they are doing as well as a clear demand from their sector.

### **Summary of ITO Experience**

- i Competitiveness challenges and productivity issues are leading to growing demand from manufacturing employers, at least, for external support in improving workplace productivity and performance.
- ii The initial response of ITOs to this demand has been to develop new qualifications that would underpin smart manufacturing practices.
- iii ITOs with their direct and regular engagement with members are well placed to facilitate conversations about whole of business issues as well as provision of support services.
- iv However, many small to medium sized employers are neither ready nor equipped (although they are willing!) to embrace these new qualifications or to begin significant change processes.
- v A considerable degree of 'pre-work' may be necessary to prepare companies to take advantage of new manufacturing technologies (e.g. Six Sigma). This is often due to the fact that change has to begin with company leadership and supervisory staff in such areas as how to conduct effective conversations with and engage their staff before specific improvement programmes can gain any traction.
- vi Support infrastructure is needed to provide appropriate forms of assistance to companies across virtually all of the seven productivity drivers.
- vii Fledgling efforts to establish trusted networks of experienced consultants are underway.
- viii This emergent role creates significant adjustment and reorientation challenges for ITOs given their traditional focus on training alone.
- ix Quite different and more sophisticated capabilities and relationships are required to engage credibly with senior managers on such system wide business issues.

- x A variety of initiatives are being taken by ITOs in this area to increase internal capability. Many are ad hoc and not well coordinated at present, reflecting the nascent nature of these developments.
- xi There may be some issues to do with how ITOs can fund this new orientation (given current performance measures that determine ITO funding levels), as well as how it might be scaled up and rationalised in terms of 'public good' investment.
- xii Despite these teething difficulties there is a growing determination on the part of the manufacturing ITOs examined to persist in this development path because of the strength of the response of their clients.

## REFERENCES

Abbott M and Doucouliagos H, 2004, A Long Run Appraisal of the Economics of Government Provided Tertiary Education and Training in New Zealand, Occasional Paper No 2, Centre for Research in International Education: Auckland.

Ashton D and Sung J, 2002, Supporting Workplace Learning for High Performance Working, International Labour Organization: Geneva.

Brinkerhoff RO and Apking AM, 2001, High Impact Learning: Strategies for leveraging business results from training, Perseus: New York.

Delbridge R, Edwards P, Forth J et al., 2006, The Organisation of Productivity, Advanced Institute of Management Research: London.

Maani S, 1999, Private and Public Returns to Investments in Secondary and Higher Education in New Zealand Over time: 1981 – 1996, Treasury Working Paper 99/2, New Zealand Treasury: Wellington.

Ryan R, 2007, Why Workplaces Matter: the role of workplace practices in economic transformation, Athena Research for the Department of Labour: Wellington.  
<http://www.dol.govt.nz/workplaceproductivity/resources/research/workplacesmatter.asp>

Tamkin P, 2005, Measuring the Contribution of Skills to Business Performance: A summary for employers, Institute for Employment Studies: Brighton.

