BUILDING ON SOLID FOUNDATIONS

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A STRATEGIC ENVIRONMENT FOR SUSTAINABLE, HIGH-QUALITY BUILDING AND CONSTRUCTION TRAINING.

BCITO
buildingpeople

Contents

Introduction

> … access to high quality training and education is critical to taking the opportunities and meeting the challenges of the world of work that lies ahead. We need to give the highest priority to an education and training system that is resilient, adaptable and inclusive.…
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> As the nature of work changes and jobs and even whole industries evolve or disappear altogether we need a far more pro-active approach to lifting the skill level of our workforce. (New Zealand Labour Party 2016, 20,26)

The world of work is not static. While it may have become more obvious in recent decades, since at least the industrial revolution the ways in which people work, the environments in which they practice, the tasks they perform, and the resources they use have been subject to ongoing change. Sometimes these shifts are due to advances in processes or technologies, other times they are due to developments in the economic, social, or political environment. Sometimes they are small and localised, relating only to a specific region or occupation, and other times they are national or global in effect.

Given this, our approaches to developing skills for work cannot be static. The specific types of capabilities, related knowledge, and underlying core competencies that we need change over time, and these must be reflected by changes to the content of the education and training programmes. But more than this, our skill development systems must also adapt and evolve to reflect changes in the nature of industries, occupations, and work organisation, as well as our growing understanding of what makes for effective education and training in a range of different environments.

The Labour Party's recent *Future of Work* commission and reports have given renewed prominence to the question of how we can ensure that our work environment lead to decent, productive employment. In late 2017, the BCITO proposed a series of moves that the incoming government could pursue to strengthen industry training – and skill development more broadly – in the Building and Construction industry. Some of these were grounded specifically in the needs of those sectors under BCITO's coverage, while others related to broader issues for the industry training system as a whole. These initiatives were discussed in a Briefing to the Incoming Minister of Education, and are listed overleaf.

The purpose of this report is to provide deeper discussion of the rationale for these proposals, including how these recommendations relate to broader issues with the regulation and operation of industry training. To that end, the first two sections of this report provide high-level context for the actions and interventions BCITO is proposing. The report begins by outlining some core characteristics of the industry training system and how it operates. The second section of the report sets out some key features and trends in the Building and Construction industry that are influencing how firms and employees engage with education and training – and how this may need to shift in the future.

The third and final section of the report brings these and other points together in discussing a series of high-level interventions that would improve New Zealand's ability to meet the education and training needs of the Building and Construction industry. These are the areas of action that have led BCITO to make its proposals to the government, and each sub-section notes the proposals to which it relates.

BCITO's goal in producing this report is not only to expand on the case for these specific proposals, but also to establish a basis for thinking about the future development of VET in

New Zealand. As noted in this report, it has been a long time since there has been in-depth consideration of how our vocational system operates *as a system*. While aspects such as qualifications or ITO performance may have been subject to review in isolation, it is past time that we consider the characteristics and functions of a high-performing approach to VET, the contributions and roles of all players – from educators to employers – within such a system, and how we can ensure that our approach to the development and deployment of skill supports high-quality outcomes for employers, employees, and the country as a whole.

Strategic proposals

The following proposals were put to the incoming Government by BCITO in late 2017. Although they are framed as recommendations for government action, it is important to note that in most cases following them up will involve collaboration with a variety of industry, education, and other stakeholders.

1. *That the Government review the policy and regulatory frameworks for industry training to ensure they are flexible enough to support innovative ITO responses to current and future industry needs.*

2. *That the New Zealand Qualifications Framework be reviewed so that the position of vocational qualifications more accurately reflects the relative complexity of these programmes.*

3. *That the prohibition on ITOs directly providing training be removed.*

4. *That the ability of ITOs to offer higher-level qualifications be improved, initially by lifting the current cap on level 5 and level 6 provision in line with the Labour Party's manifesto pledge.*

5. *That the Government partner with the construction industry to trial a financial incentive programme to support those employers who train.*

6. *That the Government use its procurement practices to incentivise firms to train.*

7. *That in addition to its support for skills planning in the economy as a whole, the Government works with industry to establish a construction labour force supply monitoring and development unit.*

8. *That the Government investigates and supports (where appropriate) initiatives to attract more women and non-Pākehā into the construction sector.*

9. *That the Government ensures New Zealand's education and immigration frameworks are complementary and not competitive.*

1. The industry training context

In international terms, New Zealand's industry training system is highly distinctive and innovative. Throughout the world, recent decades have seen increasing calls for vocational education and training (VET) systems to involve more direct employer engagement, but most jurisdictions continue to rely on fundamentally provider-led or government-directed

approaches to meeting industry skill needs. New Zealand is one of the few countries to have implemented a national employer-led, sectoral system (Sung, 2008).

The establishment of the industry training system in 1992 was driven by many factors. [1] These included not just the declining numbers participating in the extant apprenticeship system, but also a drive to modernise New Zealand's approach to VET by incorporating developments in education thinking, accounting for changing labour markets, and recognising the implications of these for skills development (such as the need to support lifelong learning). The system that was implemented has undergone notable changes over time, but continues to be built on several core principles that need to be reflected in the policy settings and regulatory environment that govern how Industry Training Organisations (ITOs) operate. This section discusses three of these core elements: the relationship to industry, using workplaces as the primary learning environment, and the nature of 'customers' within industry training.

1.1   Industry responsiveness and triple accountability

The defining characteristic of New Zealand's industry training system is industry ownership of skill development. Although a variety of specific elements influenced the initial implementation of the system, this was the core goal driving the creation and structure of industry training. In the words of then-Minister of Education Lockwood Smith:

> I wanted to make the system more responsive to the needs of industry and that was why we established ITOs; to put industry in charge of what was going to be learnt through workplace education, because industry ought to know best the kinds of learning that was most valuable to industry. (quoted in Green *et al.* 2003)

This principle is what makes the industry training system an example of an employer-led, sectoral approach to VET, and lies behind several features both how the system runs and the requirements on ITOs. For example, the *Industry Training Act and Apprenticeships Act 2002* (the Act) not only establishes expectations of an industry cash contribution – the willingness of industry to pay this being seen as a proxy for the 'real' value of the training – but also requires that ITOs have "… adequate arrangements for involving employers in the governance of the organisation …" (S.7(c)), and that they "**respond** to the demand for industry training at the skill level required by employers…" (s.7(c)ii; emphasis added).

The Act's explicit requirement for responsiveness is important to highlight because it creates a clear and formal expectation that ITOs will do what industries – and specifically employers – require from them. This differs from the statutory and regulatory expectations placed on other Tertiary Education Organisations (TEOs).[2] Section 172 of the *Education Act 1989* establishes required characteristics of public providers and of the type of education they offer, but does not explicitly require them to meet the needs of any industries.[3] Similarly, the current Self-Assessment and External Evaluation and Review (SA-EER) quality assurance model for non-university organisations requires every TEO (including ITOs) to demonstrate

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[1] The foundations of industry training were laid by a combination of the 1988 Hawke Report on education, the then-Labour government's *Learning For Life* response in 1989, and the incoming National government's 1991 response to the recommendations of the Apprenticeship and On-job Working Party. Overviews of this era and subsequent evolution of industry training can be found in Green *et al.* (2003), Industry Training Federation (2016), and Murray (2001).
[2] It is worth noting that some employers can now directly access industry TEC funding to train their employees.
[3] Private Training Establishments are private businesses that provide education services and do not require Ministerial recognition, therefore they do not have legislative definitions and expectations under this section of the Act.

engagement with relevant industries. However, this is in the context of general requirements for stakeholder responsiveness and is just one of many factors that goes into the ultimate evaluation of that organisation.

Obviously the government wants all TEOs to offer programmes that are relevant to work; 'Delivering Skills for Industry' is the first priority outlined in the *Tertiary Education Strategy 2014-19*, and one rationale for permitting public TEOs to charge fees is the employment and income benefits experienced by learners. However, for providers it is assumed that a combination of funding policies and market discipline will ensure that this happens. In contrast, if an ITO does not arrange the types of education that firms want, there are formal repercussions: the ITO might lose its coverage of a particular sector or even be completely disestablished. While ITOs no longer have a legislated industry skills *leadership* role, they are still the only part of the education sector with explicit legislative requirements for industry skills *responsiveness*.

This principle has important implications for the accountability of ITOs, which differs from other private and public TEOs. In the New Zealand system, Private Training Establishments (PTEs) are accountable simply for using their public funding appropriately and in accordance with the regulations and conditions established by agencies such as the Tertiary Education Commission (TEC) and the New Zealand Qualifications Authority (NZQA). Provided they meet these criteria (and comply with generic regulations relevant to their status as private businesses, listed companies, charitable organisations etc.) their accountability is purely to any governors, owners, or shareholders.

Tertiary Education Institutions (Universities, ITPs, and Wānanga) are accountable for their funding and education quality in the same way as PTEs. However, because they serve specific purposes within the education system and the Crown is seen to have an ownership interest in them they are seen to have an additional level of accountability: while PTEs are accountable only to funding and monitoring agencies, Institutions are also accountable to the public. These bodies are considered part of the public sector and subject to the Official Information Act, ministers play a role in their recognition and governance, and they are subject to the specific expectations outlined in the Education Act as noted above.[4]

Industry Training Organisations, on the other hand, essentially have three accountability streams. Like all other TEOs they are accountable for their funding and regulated by government agencies. Like TEIs, they also have a specific and distinctive role in the tertiary education system and so are subject to official recognition by the Minister, and have specific requirements in areas such as governance to ensure that they operate in the public interest. In addition, however, the Act makes them explicitly accountable to their industries. Where other TEOs *should* offer education and training programmes that give learners skills, knowledge, and competencies that reflect the needs of relevant industries, ITOs *must* do so. This is a core difference that affects almost every aspect of how ITOs operate and approach their roles.

1.2   The pedagogy of the workplace

Given its roots in the traditional apprenticeship system, it is unsurprising that for most industry training 'the workplace' is the core learning environment. Not all training occurs in this setting; in keeping with the notion of industry-led training, from its inception there was an

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[4] These providers also receive benefits and privileges because of their status, such as immunity to rates, protection over the terms that describe them, and until recently higher levels of public funding than private providers.

assumption that ITOs and their industries would determine the appropriate mix of 'on-job' and 'off-job' education that suited the relevant employers, the relevant workforce, and the best method of developing the necessary competencies for particular industry roles.[5] However, workplace-based learning dominates education in the industry training sector. In 2009 the Industry Training Federation estimated that across all ITOs less than 10% of industry training programmes did not include any 'on-job' elements (ITF 2009), and internal BCITO estimates suggest that less than 5% of the ITO's current training occurs off-job.[6]

The workplace is one of the oldest education environments – the master-apprentice relationship is arguably the first ever formal learning 'system'– and involves a distinctive approach to learning.[7] A variety of different frameworks for conceptualising workplace pedagogy have been developed, such as Experiential Learning (Kolb, 1994), Situated Learning (Lave & Wenger, 1991), and Reflective Practice (Schön, 1983). Linking all of these, however, is a notion of learning often referred to as 'situated cognition' – the notion that knowledge and skills are most effectively developed within the environment in which they will be deployed. As Brown *et al.* (1989) described it (in the late 1980s):

> Recent investigations of learning … challenge [the separation] of what is learned from how it is learned and used. The activity in which knowledge is developed and deployed, it is now argued, is not separable from or ancillary to learning and cognition. Nor is it neutral. Rather, it is an integral part of what is learned. Situations might be said to co-produce knowledge through activity. (32-3)

Part of this is simply due to the opportunity for learners to immediately apply what they are learning within an authentic environment. This allows them to understand nuances of using skills in real world environments, such as what it's like to practise in a working construction site or garage rather than in a TEO's workshop (including the real-world – rather than simulated – constraints of commercial requirements, time, quality etc.) or what is involved in diagnosing a patient rather than simply understanding symptoms of a condition. Beyond this, however, the workplace is an important learning environment because these settings provide the contexts within which genuine or 'deep' knowledge (including skills, capabilities etc.) can truly emerge: "… situated learning conceives learning not as a simple acquisition of knowledge and skills, but rather as a development of the ability to interact with other persons and resources in the same environment" (Göhlich & Schöpf 2011, 146-7).

For example, Manidis and Scheeres' (2012) discussion of practices in hospital emergency departments highlights how complex interactions of different professional skills and knowledges create their own form of 'knowledge-in-practice' that is critical to the operation of workplaces. Conceptual frameworks such as Vocational Thresholds (Vaughan *et al.* 2015) and the 'Belonging-Becoming-Being' continuum (Chan 2013) highlight how membership of a

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[5] Initially government support for off-job and on-job industry training was handled by separate funds, and in the second funding iteration the costs of arranging and purchasing off-job delivery were two of the six elements that made up each ITO's STM rate (Green *et al.* 2003).

[6] Personal communication with BCITO staff, August 22, 2017.

[7] While the industry training sector has been the most prominent user of this type of education in modern New Zealand, its use is not confined to ITOs. The health professions have been major users of workplace-based education in both initial training and ongoing professional learning, elements such as placements and internships have a long history in training for professions such as teacher education and social work, and there is growing use of 'work-integrated learning' approaches to degree-level study in other areas (see Vaughan 2012).

particular trade or profession is an ongoing process that involves not just developing specific competencies, but developing ways of thinking through ongoing experiences within workplaces. Scribner's work on developing *in-situ* knowledge in real-world contexts highlights the sophisticated nature of such thinking, noting it as characterised by increased flexibility, capacity for fine-tuning and contextualistion, economy, and novel problem-solving (see Tennant 1999).
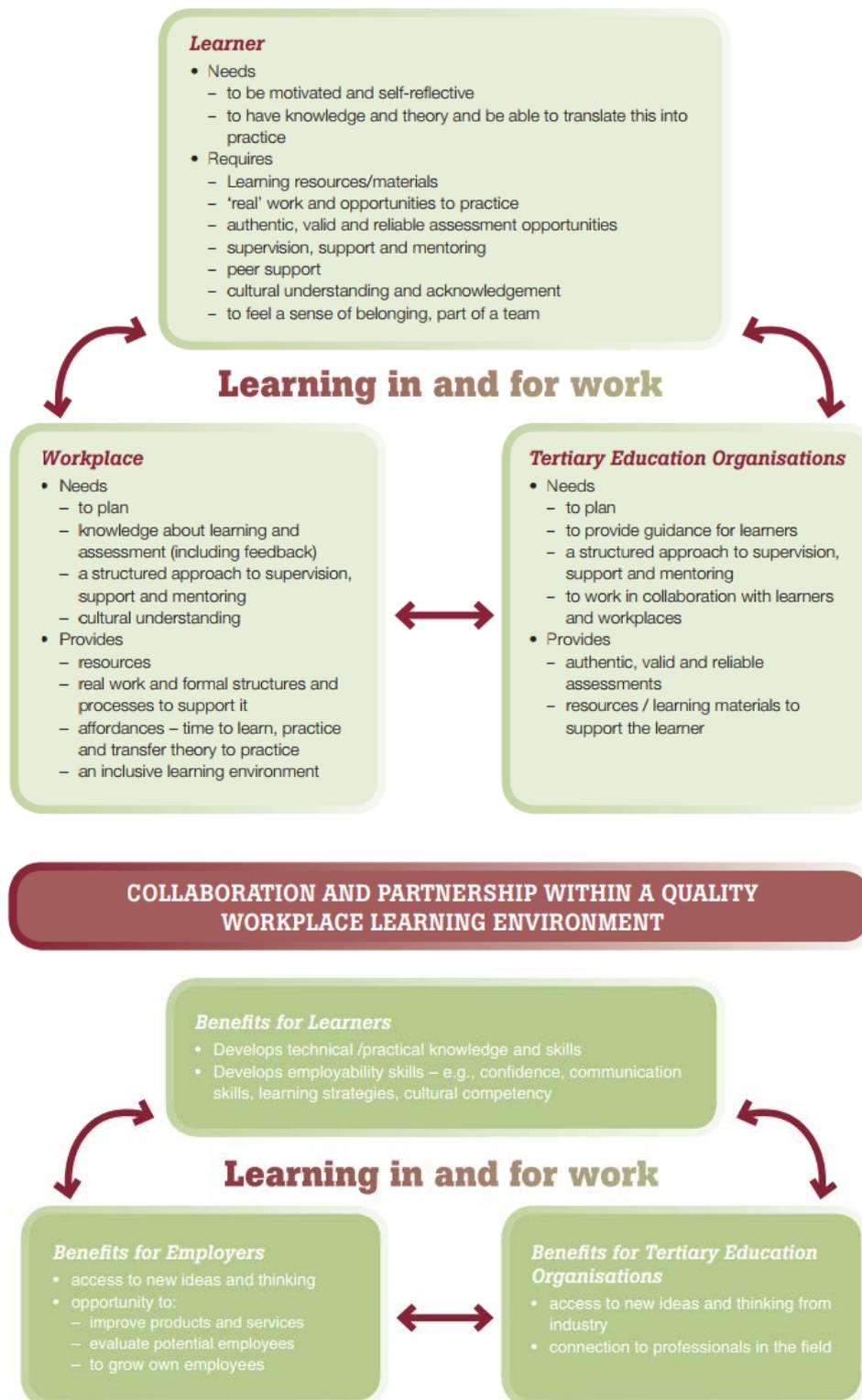
This opportunity for fully contextualised learning means that workplace-based education and training is inherently strong in pedagogical terms[8]. However, there are also other benefits from using the workplace as a learning environment.   These stem primarily from good quality workplace-based learning being predicated on a high level of employer engagement; as shown in Figure 1, effective workplace learning involves a tripartite arrangement in which all participants bring something to the learning experience and all participants receive benefits. Even in those parts that make comparatively greater use of off-job provision, the industry training system formalises this through training agreements that explicitly set out expectations and responsibilities for each of these partners.

As Kilpatrick *et al.* (2011) note, partnership relationships such as these are commonly seen as particularly strong methods for addressing 'problems' with skills. This is because employers are not just involved in discussions about what someone else (i.e. providers) should be doing for them, but actively partnering with education organisations to develop the qualities they require in their workforce. This in turn encourages firms to think more deeply about both their own skill needs, and their own role in skill formation and deployment. Essentially, it turns employers from passive consumers of an end-product to 'co-constructors', leading to a system of skill development that is much more likely to result in a capable, productive workforce. To quote Keep: "The more the [education and training] system can incorporate the workplace as a site of learning, and help develop it to act as such, the more likely it is that employers will be active participants rather than grumpy customers" (2014, 45).

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[8] Of course, the quality of workplace-based learning is dependent on the quality of systems, structures, and techniques used facilitate and assess that learning. As noted later in this report, ITOs have been active in advancing our knowledge and definitions of what constitutes 'good practice' in workplace education and training.

Figure 1: Features and mutual benefits from successful workplace learning partnerships

Learner
- Needs
  - to be motivated and self-reflective
  - to have knowledge and theory and be able to translate this into practice
- Requires
  - Learning resources/materials
  - 'real' work and opportunities to practice
  - authentic, valid and reliable assessment opportunities
  - supervision, support and mentoring
  - peer support
  - cultural understanding and acknowledgement
  - to feel a sense of belonging, part of a team

Learning in and for work

Workplace
- Needs
  - to plan
  - knowledge about learning and assessment (including feedback)
  - a structured approach to supervision, support and mentoring
  - cultural understanding
- Provides
  - resources
  - real work and formal structures and processes to support it
  - affordances – time to learn, practice and transfer theory to practice
  - an inclusive learning environment

Tertiary Education Organisations
- Needs
  - to plan
  - to provide guidance for learners
  - a structured approach to supervision, support and mentoring
  - to work in collaboration with learners and workplaces
- Provides
  - authentic, valid and reliable assessments
  - resources / learning materials to support the learner

COLLABORATION AND PARTNERSHIP WITHIN A QUALITY WORKPLACE LEARNING ENVIRONMENT

Benefits for Learners
- Develops technical /practical knowledge and skills
- Develops employability skills – e.g., confidence, communication skills, learning strategies, cultural competency

Learning in and for work

Benefits for Employers
- access to new ideas and thinking
- opportunity to:
  - improve products and services
  - evaluate potential employees
  - to grow own employees

Benefits for Tertiary Education Organisations
- access to new ideas and thinking from industry
- connection to professionals in the field

Source: Reproduced from Alkema & McDonald (2014, 6-7)

1.3   Dual customers

The combination of industry leadership and the extensive use of workplace learning – along with regulatory requirements and the practical systems used by ITOs to arrange training – create significant differences in how ITOs operate compared to other parts of the tertiary system.   It is broadly the case that universities, ITPs, and wānanga each have distinctive approaches to learning: research-led provision in the case of universities, applied skills-centred provision in the case of ITPs, and provision within a specifically kaupapa Māori framework in the case of wānanga. However, these regimes also essentially embody variations on a single theme: the delivery of learning to a person who has chosen to enter an education setting and – to some extent – adopt an identity as a 'student'.

In all these models, the 'customer' or 'client' for the TEO is the individual learner. A student might be sponsored or supported by a third party to undertake a particular programme, the public can reasonably expect that education (especially 'vocational' programmes such as Law, Accounting, or ICT) will support future employability, and both industries and society will benefit from the skills developed by the learner. However, the core learning and financial relationships in are between an individual who wants education and the TEO that provides it. Indeed, for the traditional trades the common terms for provider-based programmes – 'Pre-trades' or 'Pre-employment' – signifies that those programmes sit outside the world of work, and are intended to provide a basic level of skills and knowledge that will be supported by further education and training once they have gained employment.

Industry training is different, however, in that there are effectively two customers involved in the educational relationship. The learner – in this case an employee – is still a customer: they invest resources (time, opportunity costs such as lower wages, sometimes a direct financial contribution etc.) in return for the opportunity to gain a qualification from the ITO that has employment and career benefits. Critically, however, so is the employer. The hosting firm invests both financial and non-financial resources in the trainee or apprentice not simply in the form of programme fees (as they would when supporting staff to study at providers), but also materials, the time of staff involved in supervising workplace learning, accepting the lower productivity of an apprentice over an experienced employee etc. In return, the employer expects training to improve their firm's productivity – both directly through having capable staff who are both more efficient and make fewer mistakes, and indirectly through factors such as the reputation benefits of having a qualified workforce, fewer customer complaints etc.

The difference between industry training and provider-based training can be seen in the different contractual arrangements that govern the education relationship. At a university, ITP, wānanga, or PTE, enrolment involves a contract between the TEO and the student. For industry training, however, entering a programme involves a tripartite contract between the ITO, the learner, and the employer. This considerably changes the dynamics of the market in which industry training programmes are offered. For TEIs and PTEs, industries are *stakeholders*: they have an interest in the skills of the graduates from these organisations. For ITOs, industries are *clients*: they invest directly in industry training in order to receive a specific expected return. Although in both cases an education organisation needs to be able to demonstrate the benefits of the programme to the learner, in the case of industry training ITOs also need to be able to directly demonstrate benefits to the employer.

Moreover, in industry training the learner is already working within the field in which they are developing competency. This has two important effects. Firstly, an industry trainee must have already obtained a job and needs to be performing at a sufficient base standard that

they would not be fired or cause significant ongoing problems for the firm. While an apprenticeship arrangement may provide an opportunity to enter a field – and many ITOs offer matching services to support this – industry training itself is intrinsically linked with movement; it is not a method of entering a career, but rather a means of establishing progression through a career.[9]

The second key effect is that the benefits (or lack thereof) from education are far more immediately apparent in industry training than other tertiary programmes. As the New Zealand Productivity Commission (2017) noted in its recent report on the tertiary education system, education is usually considered both an 'experience good' (in that the benefits of it to a specific learner are not apparent until after it's been 'purchased') and a 'credence good' (in that the concrete benefits of it often aren't truly clear to the purchaser even after completion). In the case of industry training, however, the skill benefits to the learner will become clear far sooner than in other forms of education because they immediately being using these skills, and the employer can directly evaluate the performance of the employee before, during, and after their training.

This 'dual customer' arrangements is complicated, however, by the fact that while a learner receives an essentially permanent return from their investment in the form of skills and a qualification, for an employer the direct benefit they receive is an employee who will at some point choose to move on. The returns to an employer are therefore usually temporary, creating incentives for a firm to try and hire existing trained staff (including international staff) rather than bear the cost of investing in training.

Given this issue, other factors need to exist that will encourage employers to support training. These can be informal such as an industry culture or tradition in which employers believe that they have an obligation to train (this can be particularly strong in the traditional trades), explicit incentives such as the ability to charge more, or specific requirements such as government regulations for qualified workforces or practitioners.[10] Similarly, as a firm is investing significantly more into the training process than when they support off-job provision, an employer needs to be convinced a) that their investment will show relatively rapid returns, and b) that supporting on-job learning will not prove too disruptive to the firm's core business. This means that the training models adopted by ITOs must reflect the specific nature of the industry and workforce.

1.3.1   Industry training as a skills ecosystem

While this position of the employer as customer can create difficulties, it can also have significant benefits. One useful way of thinking about the potential value of the relationship between ITOs and employers is through the concept of 'skill ecosystems'. Originally formulated by Finegold (1999) and refined by Buchanan *et al.*(2001), this approach to thinking about the place and nature of skills developed in the context of 'supply-side' skills

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[9] Common educational metaphors such as staircasing, scaffolding, or thresholds provide methods for thinking about the relationship between education and employment in this context. A learner/employee starts in one role involving a specific set of tasks, learns and practices key skills relating to those tasks (initially under supervision and then with increasing autonomy), and is then given additional roles and responsibilities that allow them to learn and practice new skills. In contrast, provider-based education is largely predicated on the assumption – whether or not it holds in practice – that an employee will have already developed all (or most) of the necessary skills for a given role before being employed. Both Chan (2013) and Vaughan *et al.* (2015) provide examples – a 'Belonging, Becoming, and Being' continuum and 'Vocational Thresholds' respectively – that capture the industry training experience well.
[10] For example discussions of the incentives and disincentives to invest in training and associated questions of funding, see Barnes & Dixon (2010), Gambin & Hogarth (2017), and Keep & James (2010).

initiatives apparently failing to actually improve productivity (Payne 2007; Buchanan *et al.* 2017).

The core of the concept, as shown in Figure 2 below, is that the effect of skills relies on an ecosystem defined by relationships between employers, employees, education and training organisations, and formal policy settings. Rather than a simple linear demand supply chain, the skills ecosystem model is predicated on multiple feedback loops: education organisations work with firms to understand their skill and business needs, firms then communicate those needs to education organisations, education organisations adapt their approaches to skill development to meet the needs of firms, firms consequently increase productivity and grow, therefore developing new needs that education organisations work with firms to understand etc. If this ecosystem is already imbalanced in some way (or if it is already a low-skill ecosystem) then greater investment in skill development will have little actual effect on outcomes.

Figure 2: Roles in a high-skills ecosystem
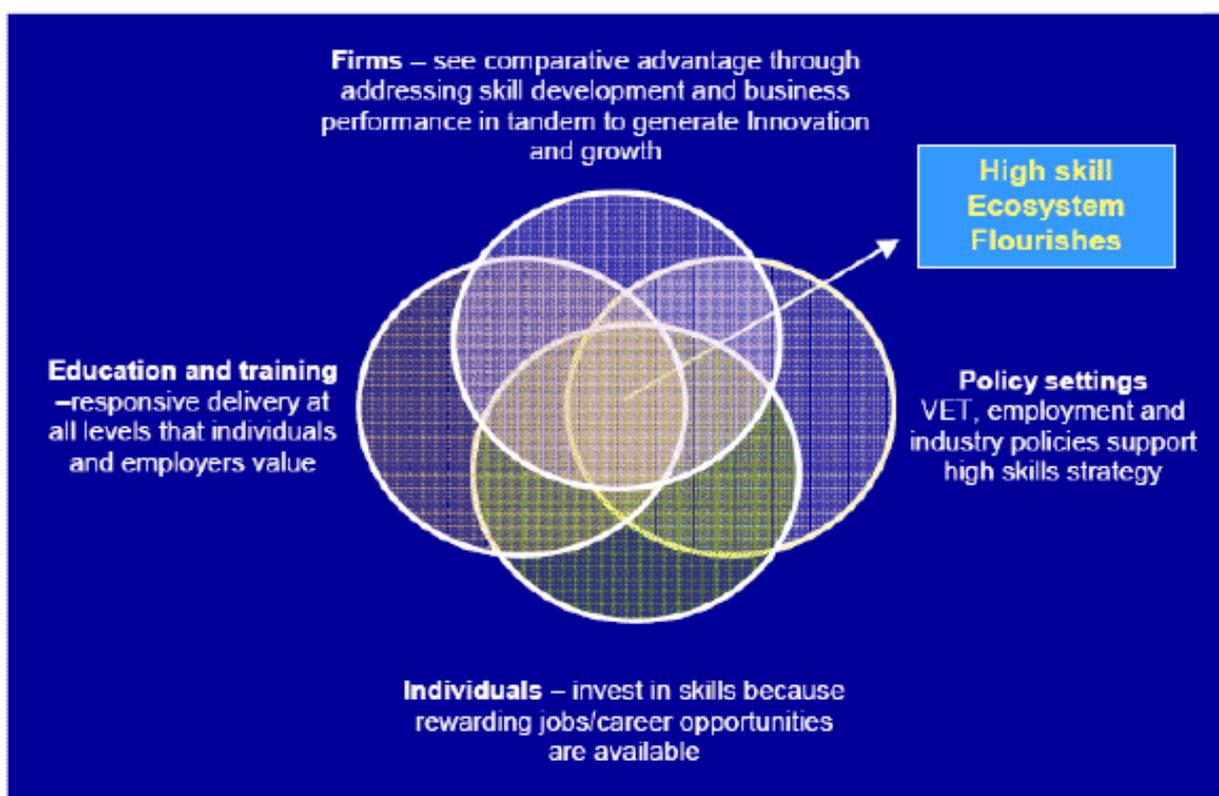
Source: Reproduced from Windsor & Alcorso (2008, 5)

Thus, where traditional skills initiatives focus simply on producing more skills for employers to access, the skill ecosystem approach emphasises that building productivity through skills requires active and productive engagement between the elements of the system for the *development* of labour (i.e. 'education') and those responsible for its *deployment* (i.e. 'firms'). This needs to involve not simply better consultation and communication – as in traditional supply-side models – but also looking at what happens to skills and skilled labour in the workplace itself.

As Windsor & Alcorso (2008) describe it:

> … Skill ecosystem approaches are as much about business strategies and workplace culture as they are about training … [They] are not only concerned with how skills are developed, but also whether the skills are utilised and how they affect business and personal outcomes. (11)

As most TEOs are located firmly within the world of education and their core learning (and financial) relationship is only with their students, it can require significant work for them to cultivate the strong relationships, understanding, and trust of businesses that is needed to support a well-functioning, balanced ecosystem. In particular, providers have few levers to influence the deployment or utilisation of skills within workplaces – arguably one of the selling points for firms of provider-based education is the assumption that they can simply hire pre-trained staff and *won't* have to otherwise invest or make changes to their practices in order to gain skill-based benefits.

In contrast, industry training can be seen as providing the foundation for well-functioning skill ecosystems. Because ITOs have a direct client relationship with employers (as well as an ownership relationship with their industry) and firms are themselves often actively involved in the process of skill development, there are strong incentives for a firm's participation in industry training to be tied to the specific plans, strategies, and goals of that business. Similarly, the tripartite training agreements set out expectations and obligations on employers that should make the work environment conducive to skill development and deployment, as does the dominance of workplace-based learning in most ITOs.

As participants within an ecosystem, ITOs exist within a space between education and training and act as a vehicle for 'translating' between the needs of industry and the requirements of good education and training. The more active the engagement of employers and learners in the learning process – for example, through BCITO's professional conversation-based approach to assessment – the more likely it is that a balanced ecosystem will develop. However, this also means that as well as being affected by the requirements of good education practice and relevant policy settings, the way they operate must also reflect the contexts of the industries they serve.

2. The building and construction context

As discussed in the previous section, the industry training system can be thought of as a type of skills ecosystem involving a direct reciprocal relationship between the world of work (the industry) and the world of education (the ITO). It is predicated on the notion that the ITO works with industry to identify the level and nature of skill required for current and future productivity, and then employers and ITOs partner to develop those skills in a way that best meets industry needs. This means that the context for ITOs and the training they arrange is driven much more directly by the nature and state of their industry(ies) than the rest of the education sector.

All TEOs are expected – both by government and learners – to offer programmes that reflect the needs of the industries to which they relate. However, for providers an industry is only one stakeholder amongst many, and employers' desires are external influences on programme design and content. Moreover, although New Zealand still operates a fundamentally market-based approach to tertiary education in which customer demand is the prime driver of the programmes that organisations offer, for providers the only direct customer is the learner. This means that for industries to exercise direct power in the education market they have to rely on communicating with the learners who make the actual 'purchasing' decisions. If an industry cannot influence potential learners, its ability to affect the content, nature, and supply of such training is limited and dependent on the goodwill of providers.[11]

This means that in most cases industries have only indirect ability to influence the nature of provider-based education. Changes occurring in an industry are communicated to a TEO through various informal and formal means (e.g. direct communication with practitioners, formal advisory groups etc.) and the organisation's management and its staff then balance this feedback against other influences and priorities before deciding whether these shifts are significant enough to be reflected in their programmes. For industry demands to create changes in programme design they must outweigh other concerns – including internal organisational inertia and cost-benefit calculations for the provider – or align with wider agendas of the provider and/or other stakeholders.

In contrast, in industry training not only are the relevant organisations directly owned and governed by the industry but individual firms are actively involved in the educational relationship as both customers and often as the 'providers' of the learning experience. This means that industries have three corresponding direct levers for influencing the *content* and nature of their ITO's programmes. Firstly, their governance role gives them direct influence over how the ITO approaches its work at a strategic role. Secondly, the customer role requires ITOs to be able to make the case to individual firms that investment in education and training is relevant and worthwhile; if the content of a programme does not suit the needs of an employer they are unlikely to support their staff to participate. Finally, when firms provide the learning environment they – within the boundaries established by the ITO, the Learning Agreement, and the programme requirements – are exposing learners to the actual current processes and practices within the industry. In principle at least, it can therefore reasonably be assumed that ITO programmes will more quickly reflect and adapt to changes in work environments, techniques, and technology. Providers establish a generic foundation for future employment, while ITOs are concerned with employees being able to work effectively today.

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[11] Note that where there is an external body directly involved in accrediting programmes for regulation or licensing purposes, such as in engineering or health occupations, industries do have a direct lever and providers must be much more responsive to changing industry or occupational requirements.

In most industry training cases the workplace is the learning environment, and ITOs are thus affected not only by changes in skill requirements, but also changes in how firms and workplaces operate. The major trends facing the Building and Construction sector in New Zealand have been outlined recently in multiple government and independent reports.[12] This section of the report briefly discusses three key sector trends and characteristics that have particular relevance from an industry training perspective: future workforce demand and supply, changing skill demands from industry, and the nature of business models and industry structure.

It is, however, important to recognise that the discussion in this section is based primarily on 'generic' national trends. One of the distinctive features of industry training is that it involves ITOs engaging both at the whole-of-industry level (to identify, understand, and respond to the skill needs of industries) and with individual firms (to establish individual training arrangements). An ITO effectively combines the role played by macro-level bodies such as National Training Boards or Skills Councils in other jurisdictions, with the meso- and micro-level functions of regional training authorities and local education organisations.

This requires ITOs to be adaptable, as the regional situation for the firms they work with can vary significantly from that facing the industry as a whole. Most notably, scale effects means that 'national' trends are often driven by situations in large urban centres such as Auckland, Christchurch, or Wellington. The local Building and Construction industry in regions where populations are static or declining, projects are relatively small, and the level of demand is low, are likely to be experiencing quite different trends from those described below.

2.1   Workforce demand and supply

The industry characteristic that is most immediately relevant to BCITO is the current ongoing and growing demand for trained employees. New Zealand's Building and Construction industry is currently in a prolonged 'boom' phase (PWC 2016) and this inevitably increases the demand for skilled workers. Of course, this will not last forever; demand follows cycles, boom phases are usually followed by corresponding periods of 'bust', and historically such cycles have been particularly extreme for the Building and Construction industry. This means that BCITO faces particular challenges when thinking about fluctuations in the need for employees; it needs to be both responsive to immediate high demand, but also able to cope with extended periods of low demand. The discussion in section 3 of this report therefore reflects both immediate need and the importance of thinking over longer timeframes.

Understanding the specifics of how industry activity translates to macro-level occupational demand is made more complex because industries are areas of economic activity that include jobs and roles which are often shared across different sectors. For example, the Ministry of Business, Innovation, and Employment (MBIE) distinguishes between those employed in the *Construction Industry* (which includes people in occupations such as accountants, lawyers, and business administrators), *Construction-related Occupations* (which includes occupations with specific roles in construction projects that may also work outside the construction sector, such as transport drivers, labourers, mechanics, or technical sales representatives), and *Construction Workers* (people in Construction-related Occupations working in the Construction Industry). Whereas 515,000 people were working in *Construction-related Occupations* in 2016, there were 202,000 *Construction Workers* (MBIE 2017b).

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[12] See Construction Strategy Group (2017a, 2017b, 2017c, 2017d), MBIE (2017a; 2017b), McKinsey Global Institute (2017), PWC (2016), World Economic Forum (2016).

When looking specifically at the occupations covered by BCITO, however, the current increasing demand for a dedicated Building and Construction workforce is clear. As shown in Table 1 below, projections for those sectors with at least 5,000 workers (such as Carpentry, Flooring, and Painting) forecast an average increase in workforce size of 21% between 2015 and 2020, while the average for those under 5,000 is 14% (or 18% when two sectors where size is projected to be static are excluded) – this is in addition to the number of new workers required to replace those leaving the sector through retirement, job change etc.[13] Across all these roles the required workforce is projected to grow by 28,440 or 20% over that five-year timeframe. Moreover, this increasing demand is occurring within a situation in which New Zealand construction firms are already reporting significant difficulties in finding sufficient skilled labour (PWC 2016). This suggests that optimal workforce increases may be even higher than those figures.

Table 1: Projected workforce demand increases in BCITO subsectors, 2015 – 2020[14]

Subsector	2015 Workforce	Projected Increase to 2020	Projected % Increase
Architectural Aluminium Joinery	4800	400	8.3%
Brick & Block	3100	800	25.8%
Carpentry	80,000	17,000	21.3%
Concreting	4300	1000	23.3%
Concrete Product Manufacturing	3000	200	6.7%
Readymix Concrete Manufacturing	1700	*Static*	~0.0%
Exterior Plastering	6000	1700	28.3%
Flooring	6300	1000	15.9%
Glass & glazing	5000	800	16.0%
Interior systems	5700	1500	26.3%
Joinery	2900	*Static*	~0.0%
Kitchen	1300	200	15.4%
Painting	16,000	3000	18.8%
Stonemasonry	650	140	21.5%
Tiling	2900	700	24.1%
All sectors	**143,650**	**28,440**	**19.8%**

At the same time as demand is increasing, issues are also appearing on the supply side. The Building and Construction industry is not alone in requiring new employees, with many other sectors reporting shortages in the number of employees needed to meet current or forecast demand (such as in engineering, teaching, and primary industries) or to support potential areas of growth (such as in ICT and roles that would support a growing Māori economy). Consequently the industry will face significant competition for its potential workforce from initiatives and campaigns intended to promote those other industries and occupations – including campaigns by large providers with extensive marketing budgets.

Competition for career choices has always existed, but is likely to be exacerbated given that falling fertility rates will affect the number of young New Zealanders available to join the

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[13] Note that updated 2017 figures combining expansion and replacement requirements (to 2022) are now available at https://bcito.org.nz/employers-industry/wdp-2017/

[14] Figures derived from BCITO Workforce Development Plans. Two specialised sectors (*Frame & Truss Manufacturing* and *Resin Flooring*) did not have occupation-specific data available and so have been excluded.

Building and Construction workforce.[15] While the overall labour supply is projected to increase in the future this is due to lengthening lifespans, significantly fewer people retiring, and the effect of immigration; the number of people aged under 25 in the workforce is projected to remain essentially static for the foreseeable future and undergo significant proportional decline (Statistics NZ 2016).

The changing age structure of New Zealand's working population has significant implications for workforce supply. While people do change occupations over time such mobility declines with both age and education.[16] In other words, a significant component of total workforce mobility stems from young people searching for a career path, with mobility declining once a person has found the type of role and industry that works best for them.   Similarly, empirical exploration of the Australian workforce by Yu *et al.* (2012) found that occupational mobility tended to occur within 'vocational streams' of linked occupations; more significant transitions – such as from one industry to another – are far less common.

While changes in the nature of work may affect these patterns to some extent, the underlying situation – established workers being more likely to shift between a set of linked, similar roles rather than change industry or vocational stream – is likely to continue. It is therefore more difficult to grow a workforce by encouraging older people to move from other occupations and industry, than it is to focus on attracting younger people considering a career path.[17] The Building and Construction industry is therefore facing a difficult situation in which demand for workers will increase significantly – at least in the short term – while the supply of potential workers is forecast to remain largely static (or even decrease), and competition for this workforce from other sectors is likely to strengthen.

2.2   Changing skill demands

Growing demand in the Building and Construction industry does not simply relate to the need for more 'warm bodies' on the ground. Changing technologies, materials, and techniques will always lead to the need for not just additional training to take advantage of those innovations, but also changes to the types of skills that employees require.

Many argue that the worldwide Building and Construction industry is now undergoing a particularly dynamic time of change affecting how it currently works, how it will work in the future, and how it will need to adapt to remain sustainable and productive. The World Economic Forum's recent exploration of the global construction industry concluded that while construction firms had traditionally lagged behind others in terms of both organisational and technological innovation, the sector was entering a period of significant change that would both lead to and require significant changes for firms in how they do business (World Economic Forum 2016).

For New Zealand, a particularly important implication of these shifts is the growing need for advanced skills in the industry. Recent investigation has identified higher skills requirements as a key constraint facing Building and Construction (PWC 2016). This relates both to current shortages in many 'high-skill' roles – particularly project management and supervision – and the effects of the technical changes and innovations noted above. Many of the specific

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[15] The generally accepted 'Replacement Rate' (i.e. the average number of births per woman required to keep a population stable) is 2.13 births. In 2016 New Zealand's fertility rate was 1.9, and Statistics New Zealand's Median population projection assumes a declining fertility rate over time (Statistics NZ 2017b).
[16] See for example Neal, 1999; Kambourov & Manovski, 2008; Gervais *et al.*, 2016.
[17] Though these movements certainly do occur, and patterns can be affected by social trends, changing economic conditions etc.

occupations associated with these are regulated professions with specified education arrangements that sit outside the industry training sector (e.g. professional Architects and Engineers). Others, however, are occupations where training and qualifications can be developed in a variety of settings – such as skilled Construction Project Managers. This need for a more highly skilled workforce is likely to drive demand for advanced construction qualifications such as the *New Zealand Diploma in Construction* or the *New Zealand Diploma in Architectural Technology*.

Technical change is not the only driver of changing workforce skill needs, however. Factors such as changing client tastes (e.g. bespoke versus custom builds), trends in procurement policies, or regulation of existing practices and techniques can all shift the necessary level and mix of skills in the workforce. For example, the Licensed Building Practitioners (LBP) scheme has effectively established requirements similar to those for regulated professions such as engineers, teachers, and health professionals, for those working on particularly critical or high-risk aspects of construction. While LBP registration itself was introduced in 2007, the 2012 formal definition of Restricted Building Work and accompanying statutory requirement for LBP registration to undertake such work, should in theory increased demand for those qualifications related to such licensing.[18]

2.3   Industry structure and business models

Building and Construction is a highly dynamic industry; the birth and death rate of construction firms is very high, and the industry is even more volatile than other traditionally cyclical sectors (PWC 2016). This extreme 'boom and bust' cycle leads to high turnover of both businesses and employees – of those firms established in 2007, only 23% were still in operation ten years later (Statistics NZ 2017a). As noted earlier, while New Zealand is currently in the midst of an extended 'boom' period this is part of a cycle and there will inevitably come a downturn. While the extent of this is impossible to predict it will clearly involve firms shedding staff and some businesses shutting down entirely.

Linked to this dynamism is the point that the Building and Construction industry is characterised by a large number of small firms; 90% have 5 or fewer employees and 95% employ fewer than 10, while only 0.5% have 50 or more staff (*ibid*).[19] This creates issues for skill development in the industry, as it is well-recognised that smaller firms are less likely to engage in training.[20] Stone (2010), writing for the UK Commission for Employment and Skills (UKCES), identifies several key reasons for this:

- Information deficiencies – lack of knowledge of what training is available and how it might benefit the business influences employer decisions on investment in skill formation.
- Short-termism and risk aversion – small firms tend to be more oriented to immediate goals, notably survival, and operate to shorter horizons than larger ones …
- Externalities – benefits to workforce skilling are not confined to the small employer investing in training because of 'spillovers' … This reduces the employer's incentive to train and induces patterns of training designed to minimise such losses.

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[18] Although as LBP accreditation can be gained without a qualification this incentive is weaker than it could be.
[19] Part of this is due to a very high number of sole traders/ owner-operators, but even when enterprises with no employees are excluded 85% of firms have less than 10 staff and only 1% have 50 or more.
[20] See, for example, Stone (2012) and Storey (2004).

- Capital market imperfections – the relatively high financial costs of training for small firms are exacerbated by the fact that the direct collateral to secure borrowing to invest in training – the individual employee – is mobile between firms. (11)

Many of these factors apply to larger firms as well (for example it will always be easier for a firm to 'poach' trained staff than invest in skill development themselves), but they are more significant for the small and micro enterprises that dominate Building and Construction. For example, these firms are less likely to have time and staff available to seek out information about training, and the per-person costs of training usually represent a greater proportion of a small firm's turnover than a large one. Smaller firms essentially have less flexibility to adapt their business models and align them with the requirements of supporting on-job training.

Moreover, recent years have seen increasing segmentation and specialisation within the industry. While not universal – notably, practices outside the main centres may differ from this – the dominant model for new and commercial construction is now based around a project management firm sub-contracting and coordinating a series of multiple niche businesses, each of whom is fully responsible for a specialised aspect of the build (for example, kitchen or window installation). This 'supply and install' model not only encourages the growth of smaller firms as opposed to larger ones, but competition for sub-contracts also leads to a focus on lowest-price approaches, which can exacerbate several of the above barriers identified by UKCES.

These characteristics create significant issues for establishing a stable supply of trainees even when significant demand exists. It is well-recognised that downturns in the industry do not just cause fewer people to choose a construction-based career path, but cause large numbers of people to leave the sector (PWC 2016; MBIE 2013); while this is to some extent the case in all sectors, the extreme volatility of Building and Construction and the inherently unstable nature of small firms makes the phenomenon particularly extreme in these industries. As a result, sector growth is regularly accompanied by significant and severe workforce shortages (PWC 2016).

3. What we can do: Strategic interventions.

Industry training exists at the intersection between the two worlds of education and employment. It is pedagogically robust, structured, and formalised learning that occurs in 'real world' working environments and is driven directly by the needs of firms and their industries. As a result, ITOs are affected by both developments in education and developments in their industry. Moreover, while ITOs may no longer have a statutory 'skills leadership' role for their industry, to be able to respond to industry skill needs they in practice have to understand not just current but likely future skill demands of the industry. This means that ITOs are not just linked to their industry by statutory requirements, but that their day-to-day activities and approach to education and training are closely linked to the concerns and state of their industry.

Although the industry training system has undergone multiple changes since its creation these have largely been operational in nature, involving changes to funding methods, adding and removing specific compliance requirements, and the like. System-level exploration of the role played by ITOs and what they need to effectively fulfill their functions has been significantly rarer. In this context it is worth noting that the recent Review of industry training was in practice less a strategic review of how well the New Zealand education system supported workplace learning and industry skill development, but rather a performance review of ITOs.[21]

While the Review did lead to some notable changes in regulation of apprenticeships, in the main it became an exercise in determining whether ITOs represented value for money to the government. Thus, the majority of recommendations from the review focused on ITO funding, performance monitoring, and creating competitors to improve market discipline, rather than education or labour market-related issues such as pedagogy, incentives to train, skill utilisation, and the like. This, in turn, led to a period of consolidation in the sector involving many mergers and a dramatic fall in the overall number of ITOs. While this may have led to a more efficient system from a government perspective, Piercy & Cochrane (2015) describe how this approach had little prospect of addressing issues around improving productivity or industry performance.

The Productivity Commission's 2016-17 inquiry into innovation in tertiary education did go somewhat further than the Industry Training Review. Given the Commission's broad remit and focus on the issue of innovative education models, this was inevitably a 'once over lightly' treatment with specific regard to industry training. However, the final report from the inquiry did include some recommendations intended to support ITOs' ability to create effective outcomes for their trainees, apprentices, and firms. These are touched on later in this document.

What has been lacking in recent years is an in-depth, independent, review of whether the current framework for industry skill development is truly fit-for-purpose. This includes not just the functioning of ITOs as organisations, but exploring what makes for successful workplace learning, how the policies and regulations governing industry- and employment-focused education relate to work environments, and broader issues of how New Zealand ensures that firms have a sufficient and sustainable skill base to meet their needs.

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[21] It is noteworthy in this respect that the rationale for this review was explicitly stated to be perceived shortcomings in ITO outputs and compliance (Ministry of Education, 2011), rather than the relationship between skill development and industry and economic performance. This second element was the focus of the short-lived 2008 *New Zealand Skills Strategy*.

BCITO has already identified three key areas of strategic challenge for workforce development: getting the right workforce, running businesses effectively, and developing skills and valuing qualifications (BCITO 2015). Drawing on these and the previous sections of this report, we can similarly identify three broad strategic policy challenges for ensuring effective industry training in the Building and Construction industry:[22]

- *A fit-for-purpose and flexible system*: Ensuring that regulations relating to industry training do not prevent the ITO from meeting its mandated goal of industry-led skill development.

- *A sustainable Building and Construction workforce*: Ensuring that the industry has a sufficient human capital base to meet existing and future demand.

- *An effective investment system*: Ensuring that approaches to meeting industry skill needs support a high-quality, sustainable industry training model.

There are several interventions being pursued by BCITO that would address and support the ITO's goals, which can be aligned to these themes as outlined in Table 2 below. Several of these will, in turn, likely require changes to elements of the policy, regulatory, and statutory frameworks that govern industry training. The remainder of this report considers the specific rationales for these with reference to the changing context discussed above. Each part within this section also begins with a list of associated proposals for Government action that would support those actions.

Table 2: Strategic challenges and interventions

Strategic Challenges	Proposed Intervention
Ensuring a fit-for-purpose and flexible system	Removing constraints on advanced training Supporting industry provision Increasing regulatory responsiveness
Ensuring a sustainable Building and Construction workforce	Validating Industry Pathways Improving workforce diversity
Ensuring an effective investment system	Improving labour force planning Revising industry funding sources Addressing the training-immigration balance

It should be noted that the recent election and outcome of coalition negotiations has changed the context for these proposed interventions. However, these changes have largely been positive and in some cases, such as the removal of the cap on Level 5 provision, the relevant intervention (or a similar policy) was a manifesto pledge of one or more of the government parties. There appears to be no case where the new policy environment is likely to be less receptive to a given intervention following the election.

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[22] These are in addition to more operational/ 'tactical' concerns, such as ensuring good completion rates, maintaining BCITO as a viable organisation with a sustainable business model etc.

3.1 Ensuring a fit for purpose and flexible system

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Associated Recommendations

- That the Government review the policy and regulatory frameworks for industry training to ensure they are flexible enough to support innovative ITO responses to current and future industry needs.

- That the prohibition on ITOs directly providing training be removed.

- That the ability of ITOs to offer higher-level qualifications be improved, initially by lifting the current cap on level 5 and level 6 provision, in line with the Labour Party's manifesto pledge.

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As stated earlier, the defining feature of industry training is its need to respond directly to the needs of the industry it serves. This does not necessarily mean responding simply to the *desires of employers*: Keep (2014) and Vaughan (2012), for example, both highlight instances where tensions at firm-level and system-level can mean what an individual business owner wants does not correspond to what is best for the industry, trainees, or the country. What it does mean, however, is that the design, regulation, and monitoring of the system need to support education and training approaches that reflect the needs and nature of the industries that ITOs serve.

Current regulations and requirements around industry training are largely an outgrowth of the traditional apprenticeship model that existed prior to its creation.   The new system developed in the 1990s certainly involved significant changes, such as moving from a 'time-served' to competency-based approach to learning and qualification attainment, increased engagement by industry, and extending workplace-based education and training to new areas. However, the starting point for the system was – unsurprisingly – what people already felt comfortable with.

At base, the *Industry Training and Apprenticeships Act 2002* does support a flexible and responsive industry training system. It establishes key elements of the system, such as the industry relationships described earlier, the need to include employee representation in governance, the central role of the training agreement as a tripartite document, and the basic functions of ITOs. Beyond this, however – with one key exception discussed below – the Act allows for significant flexibility in the detail of how an ITO operates. Constraints on ITOs are instead largely a matter of *policy* decisions and determinations made at ministerial and agency level. Given this, amending the system is less complex than it may seem.

3.1.1 Removing constraints on advanced training

As noted earlier, many of the regulations surrounding industry training are artefacts of the previous apprenticeship system, in which a large 'time-served' component was combined with block courses at technical centres such as polytechnics. Since its implementation, however, most parts of the industry training system have focused more strongly on learning in the workplace, to the extent that work-based pedagogy dominates practice across the sector. The basic outline of the 'assumed' model does still exist in those industry training programmes that use both on-job and off-job elements, but even in those cases the nature of learning in the workplace has changed considerably.

As the largest user of workplace learning approaches in the New Zealand system, the industry training sector is the largest repository of expertise in what makes for good quality work-based education and training. For the past decade ITOs have been at the forefront of supporting research into this area, including explorations of what makes for high quality assessment in workplace settings (see Vaughan & Cameron 2009, 20010a, 2010b; Vaughan *et al.* 2011; Heathrose Research 2016), what factors lead to non-completion (Alkema *et al.* 2016), the relationship between skills and productivity (Harvey & Harris 2009), and how to design workplace learning specifically to support success for Māori (Kerehoma *et al.*, 2014) and Pacific learners (Ryan *et al.* 2017).[23]

As discussed earlier (see section 1.2 of this report), there is a strong pedagogical basis for the value of workplace-based learning. In particular, while a simulated environment may help a learner use their technical skills more effectively, becoming fully proficient in a given occupation requires a 'real world' context. These environments both teach an additional set of skills specific to the working environment, and provide the final capstone layer of learning that turns knowledge and skill into authentic capability.

Not only is there now increased recognition across the board of the validity and robustness of workplace learning, recent years have also seen a trend towards recognising the value of workplace learning for occupations and disciplines that have not traditionally made extensive use of the workplace (see Göhlich & Schopf 2011). For these areas, internships, placements, and similar learning elements are increasingly being recognised as not simply useful optional components or add-ons to otherwise class-based programmes, but as offering effective environments for the development of core skills and knowledge. This has led to a significant increase in the use of workplace learning for 'higher-level' programmes that have traditionally been overwhelmingly dominated by institutional providers.

New Zealand's policy and regulatory framework, however, has not kept pace with these educational developments. One of the most prominent examples of this is the current cap on industry training provision at levels 5 and above of the NZ Qualifications Framework, with current policies permitting only 10% of the total industry training Fund to be spent on programmes above level 4. Moreover, ITOs are explicitly barred from arranging training at level 7 and above despite usually having formally gazetted coverage to set standards at levels 1-7 or 1-8 of the NZQF (depending on the ITO).

These barriers represent a conflict between the role of ITOs as Standard-Setting Bodies (SSBs) and their role as arrangers of training. In their capacity as SSBs, Industry Training Organisations are given a mandate to oversee education up to a degree-equivalent level; it is possible to debate what precisely 'set standards' might mean in this context, but it certainly involves recognising that ITOs have the expertise and capability to develop quality education offerings to Level 7 at least. However, when it comes to their capacity as arrangers of training, our regulations effectively claim that ITOs do not have the expertise and capability to design programmes and assess learning at Level 7, and discourage them from doing so above Level 4.

These constraints prevent the industry training sector from responding not just to international developments, but also to demands from industry. For BCITO, these regulations are particularly problematic given the previously discussed need for higher-level skills within the workforce. These needs are not being met by tertiary education providers, and yet the ITO is largely discouraged from anything but marginal attempts to develop and encourage training at this level. While it is technically true that the cap relates only to public funding and

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[23] For discussion of the significant collaborative research potential of ITOs see Cochrane *et al.* (2007).

so ITOs can offer unfunded programmes at these levels, in practice this is unlikely to be economic for either ITOs or firms.

The incoming Labour-led Government has committed to removing at least the Level 5+ cap on arranging training (New Zealand Labour Party n.d.a). This is welcome given that the underlying purpose of that cap appears to be unclear, and it has little support even outside the industry training sector. During the government's formal review of industry training, employers, industry associations, and tertiary providers all supported the raising or removal of the cap (Ministry of Education 2012). In the final report of its inquiry into tertiary education the Productivity Commission also recommended that it be removed:

> There are no compelling reasons why [industry training] provision should be restricted to levels 1 to 4. The restriction limits the ability of the industry training subsector to respond to demand for higher-level training, and inhibits the adoption of new models such as degree apprenticeships. (2017, 391)

In response to the Commission, the cap was defended on the basis that in practice it has not come close to being fully subscribed (MBIE & Ministry of Education, 2016); the argument being that this demonstrates there must be no unmet demand for training at this level. However, this could be seen as something of a chicken-and-egg situation: ITOs are discouraged from offering programmes at level 5 and above and so therefore put little effort into developing and marketing them. The existence of programmes at these levels within providers (including degree programmes) would seem to indicate that demand does exist, and that ITOs are being artificially constrained from meeting that demand. [24]

During the earlier Industry Training Review, a different concern with lifting the cap was raised: that ITOs might focus on higher-level qualifications at the expense of foundation levels (see Ministry of Education, 2012). However, the nature of industry training intrinsically works against such inflation. As Dalziel (2012) notes, while employees are interested in qualifications due to their portability and signaling effect, employers are interested in the actual skills that lie behind those qualifications. The position of employer as customer and participant within industry training therefore acts as a natural brake on unwarranted inflation, as they will not invest in skills that they do not need.[25]

Fundamentally, both defences of the level cap appear to ignore the point that industry training requires investment from both the learner and employer. If it is true that actual demand for additional training at these levels is minimal, then employers will be unwilling to invest and any increase in level 5+ provision following removal of the cap will likewise be small. Conversely, if there is significant industry demand for advanced training then the imposed inability of ITOs to meet this demand conflicts with their role as the embodying the principle of industry-led control over education and training.

Removing the 5+ cap will allow ITOs greater flexibility to move into advanced, but sub-degree level education and training. However, there remain questions regarding the role of ITOs at

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[24] In their joint submission to the Productivity Commission's inquiry, MBIE and the Ministry of Education also argued that higher levels of education result in higher private returns and so should not be supported by industry training (MBIE & Ministry of Education 2016). The Commission noted that the existence of public funding for provider-based programmes at these levels (with even higher private rates of return) made the logic of this position difficult to follow and explicitly rejected this argument in their final report (New Zealand Productivity Commission 2017).

[25] Qualification inflation is actually more likely to occur in the provider sector as TEOs encourage prospective students to enroll in (more expensive) degree-level programmes that may have little value from an employer's perspective. See for example one New Zealand university's recent creation of a degree in retail management, which effectively competes with potential workplace-based offerings such as advanced diplomas from Service IQ.

more advanced levels, such as their input into industry-related degrees and postgraduate qualifications. Such roles are likely to relate more strongly to the position of ITO as Standard-Setting Bodies than training organisations – in other words, as experts in particular areas of education and the needs of industry rather than as direct arrangers of training. However, discussion of this area leads naturally to that of the other major constraint on ITO activity: the ban on direct education provision.

3.1.2 Supporting industry provision

Considering the role of industry training in higher level education raises the one aspect of the Act that does clearly prevent innovation: the prohibition of ITOs from 'providing' training. Section 10(2) of the Act makes it clear that ITOs cannot be funded for actual delivery, while s.11(E) specifies that ITOs cannot circumvent this by owning PTEs. This barrier appears to be a direct legacy of the system's initial development, based on the assumption that industry training would look fundamentally similar to the existing apprenticeship model with 'formal' learning occurring at education providers (albeit with a greater number of organisations competing with each other for ITOs' purchasing of off-job courses).[26]

Given this, ITOs are prevented from developing workplace-based learning models that involve active teaching (barring that undertaken by the employing firm's own staff). In keeping with the provisions of the Act, ITOs do not deliver but instead make arrangements for assessing the skills and knowledge developed by trainees and apprentices, and award standards and qualifications when appropriate. While this will sometimes involve direct provision by other TEOs such as ITPs, most commonly the 'educator' role is effectively undertaken by the employing firm, with the ITO providing advice and support to the employer that enables them to fulfill this function.

Although this barrier has had some benefits – most notably that it has led ITOs to become significant repositories of knowledge around 'what works' for workplace learning – in a pedagogical sense there is little rationale for preserving this limitation. To begin with, the restriction constructs an artificial division between 'assessment', which ITOs are statutorily required to make arrangements for, and 'provision', which they are statutorily barred from undertaking. However, the notion that assessment can be divorced from the learning process in this way now has little credibility – assessment (both formative *and* summative) plays a critical role in education and training, and is a key part of learning design (see, for example, Black & William 2009; Ramsden 2003; Spiller 2014).

Moreover, other than the original designers of the system assuming that industry training would look fundamentally similar to the apprenticeship system as it existed then, the key reason for having preserved this restriction appears to be a lack of appreciation for the workplace as a learning environment. As Vaughan (2012) – drawing on Eraut (2000) – notes, there is a widespread and often unconscious perception that workplace learning involves simply 'doing the job' rather than learning in the sense that outside observers understand it: "There is such a close association in people's minds between the word "learning" and classroom settings, that it is difficult to appreciate that learning might occur in other, often less formal, settings such as the workplace" (16). Consequently, the workplace is seen as an environment for developing task-oriented competence, rather than higher-order capabilities.

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[26] Considerations related to the role and viability of ITPs may also have played a part.

As Canning (2011) argues, though, seeing the workplace is simply an environment for applying the 'real' learning that has been developed in an educational setting, is an increasingly outdated perspective:

> ...theory is not distinct from practice but contained within it and inseparable from it ... Put simply, to teach core skills you need to start with the contextualized 'practices' that you want to teach and use these multiple and collective experiences to help the student make the necessary connections and insights in order to learn. (189)

This issue ties strongly to the previous discussion of removing restriction on industry training above Level 4. Modern approaches to education are increasingly recognising the validity and value of workplace learning. In Germany, for example, recognition that the speeding-up of product cycles, occupational changes, and the reorganisation of work required more dynamic and employee-led approaches to learning has led to what Göhlich and Schöpf (2011) characterise as a renaissance in the role of the workplace as a site for both initial and ongoing vocational education. Moreover, growing and innovative use of ICT in education raises some questions over what 'provision' actually means in this context – for example, whether making available an interactive webpage, pre-recorded streaming video, or regular online discussion sessions could constitute providing education and training.

Perhaps most notably, there is a strong international trend toward exploring the workplace as a location for advanced 'professional' learning of the type that would traditionally be located primarily in universities. A particularly well-developed and innovative example of this can be seen in Scotland, where Skills Development Scotland (SDS) treats 'apprenticeship' as not simply a separate sector within the education system but rather a learning mode or method that can be used at multiple levels. Thus, alongside a refined system of Modern Apprenticeships (and specialised Foundation Apprenticeships), SDS has also developed a set of Higher Apprenticeships that use the apprenticeship model to offer degree-level (and even postgraduate) education. England has also been exploring a similar approach in some areas, and in New Zealand the engineering industry has begun exploring the notion of 'degree apprenticeships' based on UK models (Goodyer & Frater 2015). Relaxing the prohibition on 'providing' training would allow ITOs play a more active role in supporting such moves in New Zealand.

A further objection raised to ITOs having the ability to directly provide education and teaching has been that ITOs would be both establishing national standards and qualifications and delivering those qualifications. Just as the 80s and 90s saw increasing emphasis on creating funder-provider splits in public services, so to a 'developer-provider' split was created in industry training. The extent to which this ever represented concern over a genuine issue is questionable – after all, providers were able to establish and offer their own approved courses (often referred to as 'local qualifications') – but is particularly unclear in the post-Review of Qualifications (RoQ) environment.

In this environment, the previous control that ITOs had over these qualifications has been replaced by the new 'Qualification Developer' (QD) function. Rather than being a gatekeeper that permits or rejects access, this role has been described as a 'guardian' or 'steward' function.[27] ITOs (and other QDs) still manage qualifications – in consultation with stakeholders – but while the Consent to Assess process requires the applicants to show

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[27] ITOs do remain the only bodies apart from NZQA that are able to develop unit standards. However, the use of these standards in programmes cannot be mandated under the new qualifications regime, and it is unclear how this role could create a conflict of interest were ITOs able to directly provide education and training.

evidence of consultation with the QD, actual consent is ultimately given (or withheld) by NZQA. It has also been recognised that providers can be Qualification Developers for qualifications that they offer, and so the notion that it would be inappropriate for ITOs to be both developers and providers seems to have a weak basis in both principle and practice.

3.1.3 Increasing regulatory responsiveness

While this report focuses on system-level constraints on the flexibility of the industry training system, it is worth highlighting that micro-level regulations can inhibit ITOs' ability to innovate and respond to industry needs. Regulations are an important part of the policy toolbox; they are one of the strongest methods for enabling government to have confidence that the significant investment it makes in education and training will have the intended effect. However, problems do occur when regulations are not fit-for-purpose; in these cases they can perversely end up diminishing the quality and effectiveness of investment. One example of such a case relates to the proposed development of Specialist Skill Sets.[28]

This model is an example of BCITO responding to changing industry contexts – in this case, increasing segmentation of roles in the industry. As noted earlier, firms are increasingly pursuing a niche strategy both for the business and with individual employees. Whereas previously a given firm might take on responsibility for an entire project and staff would undertake a range of tasks involved in that build, business models (especially in main centres) now commonly involve contracting a series of specialised firms to undertake very specific elements of a project – for example, a specialist kitchen installation firm.

The growth of this model creates problems for a system in which qualifications have minimum sizes and are built around the full range of possible tasks in the corresponding role, as it can exclude employees from completing a qualification because they lack the opportunity to be exposed to all these tasks. The Specialist Skill Set model address this by identifying the specific elements/standards that relate to a given specialist role within a broad occupation (e.g. 'kitchen installer').[29] These are accompanied by a set of standards related to employability skills and core competencies (such as literacy and numeracy) to form a coherent learning package built specifically around the skills of that role.

If a learner has completed this package and moves into a new specialist role, they are also able to then 'stack' these existing credits onto those in their new job's Specialist Skill Set. In some cases the collected sets will cover an entire 'parent' qualification; in these situations achieving the full qualification may require engaging in a short capstone programme and assessment to ensure that the learner is capable of integrating competencies to the level expected of someone with the full qualification. In other cases, the parent qualification will have significant elements not aligned to individual sets, and options for completing the full qualification may involve Recognition of Prior Learning (RPL) or similar processes to recognise the competencies gained through Specialist Skill Set programmes. If they do not move into completing the full qualification the learner still has their skills formally recognised in a way valued in the market.

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[28] The author understands that the specific language used to refer to this initiative has not been fully established – alternative titles include 'stackable credits' or 'Hop-on, Hop-off' training. The term 'Specialist Skill Set' is used in this paper to emphasise the distinctive features of the model being developed by BCITO, and to distinguish it from the general phenomenon of microcredentialling/ badging/ nanodegrees etc.

[29] There may also be opportunities to develop skill sets as the base for new and emerging roles within industries.

This can be seen as broadly similar to some forms of microcredentialling in that it involves recognising learning in a smaller 'chunk' than a full qualification, through a method based around authentic occupational tasks. A strong argument can be made that microcredentials in this sense have existed in New Zealand since the 1990s in the form of unit standards,[30] and Specialist Skill Sets preserve this through being based on such Standards. Similarly, Mischewski (2016) notes that the success of microcredentials relies on a range of factors, including a focus on employer and learner needs, and an 'ecosystem' for such credentials that includes elements such as validation by industry. The SSS model meets these criteria through each skill set being constructed around a specialist industry role that already exists – they do not reflect an abstract construct but are driven by a coherent 'real world' occupation, thus reducing the possibility of TEOs gaming the credential opportunity.

However, there are several important differences from micro-credentials. Most notably, these are *sets* of capabilities defined not by competence in a specific task, but by a set of related competencies needed to undertake a specific role in an industry setting. Where microcredentials usually signal possession of a specific skill or competency, an award under the SSS model instead refers to a coherent *integrated package* of skills and knowledge that relate directly to the ability to perform a particular job role. This emphasis on connection avoids the atomisation of learning involved in microcredentialling and preserves the connections and deep learning that are the foundation of workplace pedagogy (as discussed earlier).[31]

More critically, Specialist Skill Sets maintain the connection of the credential to a broader level of skill *development* as well as simple acquisition. A key component of modern thinking about vocational education – such as Fuller and Unwin's (2003) work on expansive vs restrictive apprenticeships and Keep's (2014) discussion of the constrained learning involved in 'rotten job' syndrome – is that training should not focus simply on the ability to perform the tasks within a specific current job, but also allow for moving along a career pathway.

Through its inclusion of generic competencies, and allowance for linking or 'stacking' multiple sets together, the Specialist Skills Set initiative preserves that link to enabling progression. The Specialist Skill Set model is thus an example of the BCITO responding to changing industry characteristics in a way that balances the need to ensure industry training is fit-for-purpose and meets the immediate needs of employers and employees, with the need to ensure that the training it offers is educationally credible and meets the broader purposes and goals of the VET system.

In many ways, Specialist Skill Sets resemble existing Limited Credit Programmes (LCPs); the key difference from a learner and employer perspective is that completion of an SSS programme would result in a credential of some form – not a qualification, but a formally recognised and quality-assured award. This should facilitate the implementation of Specialist

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[30] Unit standards are competency-based, industry-developed, and quality assured awards that formally recognise the ability to competently perform a specific task or action. The primary difference from micro-credentialing is that by definition a learner can enroll in a programme leading towards such a credential, whereas unit standards are intended as the 'building blocks' of larger qualifications and a learner cannot usually pursue an individual Standard by itself. There is therefore some irony in some providers' advocacy for micro-credentialling, given that a common reason given for non-ITO parts of the tertiary education sector failing to embrace unit standards is that they are overly task-specific (see, for example, Ministry of Education 2012).

[31] Wheelahan (2017) discusses the problem of skill atomisation in the context of competency-based approaches; these are aggravated in microcredentialling models, which take the concept of 'unitised' learning to an extreme.

Skill Sets, but in pursuing this model the BCITO has run into several issues around policy and regulations for programme design.

Firstly, the LCP model has specific credit restraints established through funding conditions – they cannot be smaller than 20 credits in size, and cannot be more than 70. However, the key determinant of the components – and thus size – of a Specialist Skill Set is the role to which it relates. This is a major principle of the Specialist Skill Set approach, with the connection to specific identifiable occupations ensuring the authenticity and validity of the Set. But it can also lead to situations in which a highly-focused specialist role would not meet the minimum credit requirement. Conversely, a given specialty with a wide range of tasks might involve more than 70 credits.

Secondly, LCP regulations include requirements around progression. These programmes are specifically intended to promote progression, and to this end are required to have a 50% progression rate toward a higher level qualification within five years. However, while the Specialist Skill Set model has potential to *enable* progression (through the stacking process) pursuing one is tied specifically to the role in which an employee is working, and the model has been developed in response to the difficulties employees find in locating opportunities for authentic learning outside those roles. Therefore, the likelihood of rapid progression to another skill set – let alone a full qualification – may be low, as it requires some form of change in occupation; in some cases it may actually require a change in employer.

These two points are examples of how rules around programme design do not reflect the principle of industry responsiveness that underpins the industry training model, and involve assumptions stemming from a provider-centric model of education. For example, in theory the minimum credit requirement of an LCP could be met simply by including other tangentially-related generic standards. However, including components that are not directly relevant to the role would work against both the principle of authentic training that is core to the ITO model, and the very point of developing Specialist Skill Sets. [32]

In a provider-based setting, the main determinant of programme content and structure – within the overarching formal description of the qualification where relevant – are the internal requirements, desires, and capabilities of a TEO and its staff. This allows providers comparatively large flexibility to design programmes specifically with regulations in mind. In industry training, however, the main determinant of programme design is what is directly relevant in day-to-day practice, what can be assessed in the workplace, and what employees and employers are willing to engage with. Thus, regulations relating to issues like credit loads become significantly more complex for ITOs to address than they are for providers, and hamper the implementation of innovative, industry-focused, approaches to industry training.

As noted earlier, regulations are a critical part of a well-functioning tertiary education sector; allowing ITOs *carte blanche* to develop and design programmes as they wish is not practically realistic and could allow poor practices and 'gaming' to flourish. However, it is important that regulations are well-designed and reflect the nature of the thing that they are intended to regulate. In tertiary education, taking a one-size-fits-all approach that is based on what is appropriate for Provider-based education and applying it to industry training neglects the distinctive practical and conceptual features of ITOs.

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[32] Moreover, motivation has been identified as an important influence on completion or non-completion of training (see, for example, Alkema *et al.* 2016) and the inclusion of non-relevant components is likely to reduce learner motivation.

Given that the industry training system is founded on the notion of ITOs as industry-led bodies, it would be appropriate for regulatory regimes to be focused more strongly on issues such as demonstrated industry need. For example, in relation to Specialist Skill Sets rather than imposing credit load requirements it would be reasonable for regulatory bodies to require clear and direct evidence of the specific job specialty and the tasks it involves approving recognition and/or funding for a given Set. This moves the emphasis of regulation from an education currency (credits) to an industry currency (labour market relevance).

Associated proposals

- That the New Zealand Qualifications Framework be reviewed so that the position of vocational qualifications more accurately reflects the relative complexity of these programmes.

- That the Government investigates and supports (where appropriate) initiatives to attract more women and non-Pākehā into the construction sector.

3.2   Ensuring a sustainable building and construction workforce

The second strategic challenge or theme for BCITO is the development of a sufficient human capital base to meet both existing and future industry demand. As discussed earlier in this report, the Building and Construction industry will soon be entering a period where not just existing but *potential* labour supply decreases. At the same time, even if demand for workers was to slow, the older nature of the workforce means that the number of new employees needed simply to maintain current levels is likely to increase.

As the number of those leaving the labour force increases due to retirement and the number of new entrants from those leaving school decreases, the total New Zealand labour force is likely to shrink in the near future.[33] This will create increased competition for workers between firms in the same or similar industries, but even more specifically it will create increased competition between whole industries for new entrants to maintain replacement rates.

Technically, BCITO has no formal obligation to concern itself with these issues. Since the removal of the Industry Skills Leadership role ITOs' formal functions relate solely to the training of those already in the workforce.[34] As part of its broader role within the industry's

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[33] In some cases longer working lives may balance this out. However, older adults often find it difficult to continue in physically demanding jobs due both to the nature of the tasks and the effect they can have on workers' bodies over time. It is therefore likely that working lives in industries such as Building and Construction will not lengthen to the same extent as in 'white collar' sectors, and this balancing effect will be less significant.

[34] Although this encompasses other formal and informal expectations, such as those set out in the Code of Good Practice for New Zealand Apprenticeships. It is also worth noting that there appear to be some contradictions here, with the government's current funding guidance for ITOs (Tertiary Education Commission 2017) including a variety of expectations – such as forecasting future skill needs, working with businesses to build productivity and use skills effectively, and promoting careers to young people – that are all part of a skills leadership function.

'skills infrastructure', however, these issues are of concern to the ITO – not simply in terms of business planning and understanding future markets, but as part of its fundamental mandate to ensure that the industry's skills needs are met.

3.2.1 Validating industry pathways

At the heart of ensuring that the Building and Construction industry has a sufficient workforce is ensuring that people choose it as a career pathway. This will become even more significant as the number of school leavers decreases, and 'competition' between possible destinations thus increases.

In the short term, the declining number of school leavers may have relatively little impact on BCITO. This is due to the small number of people who transition directly into industry training after their secondary education: only 2.4% of those who left school in 2015 had entered an apprenticeship or industry training programme by the end of 2016 (Ministry of Education 2017a), and in 2016 over 39% of all those who entered industry training (including 45% of new apprentices) already possessed a tertiary qualification (Ministry of Education 2017b). In the medium and longer term, however, the falling number of leavers will inevitably flow through into industry.

Of particular importance here is the previously mentioned point that labour mobility declines with age; it will always be easier to convince people to enter a field at the beginning of their career than to shift from a field and occupation set in which they have invested large amounts of time, possess extensive experience, and have developed significant skills (especially when that shift may involve significant financial costs to the worker). While older workers might shift specific roles, and types of businesses, their movement usually occurs within sets of specific occupations and industries – for example from one career in the primary sector to another, or as an accountant to a financial auditor. Thus Buchanan (2016) uses the metaphor of the 'braided river' to characterise worker mobility over time.[35]

All these factors mean that encouraging young New Zealanders to follow a Building and Construction pathway will continue to be vital for ensuring a sufficient workforce in the industry. Much of the work involved in this will be down to the industry itself, such as better marketing of the benefits of working in the sector, and ensuring that young people who enter the field are retained. The BCITO has supported this not through its own marketing and the diversity initiatives discussed below, but also involvement in broader initiatives such as *Got A Trade*, *Got It Made*. The *BConstructive* initiative – including the Level 1 to 3 BCATS (National Certificate in Building, Construction and Allied Trades) programmes – is a longstanding method by which the ITO engages with schools and young people.

However, it is likely that industry action alone will not be sufficient to influence young people's career choices. How young people make career and education decisions is complex, and has been described by Hodkinson, Sparkes & Hodkinson (1996) as embodying a form of 'pragmatic rationalism' involving not just decisions based on evidence about outcomes, but a range of other factors and structural influences such as class and gender. Core to this is the point that young people's decision-making is not a logical process involving the calculation of personal benefit, but fundamentally a social process involving a wide range of influencers

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[35] The Australian *Vocations: the link between post-compulsory education and the labour market* project led by Buchanan, Wheelahan, and Yu provides one of the most detailed empirical explorations of such movement. Further information and project outputs can be found at https://www.ncver.edu.au/publications/publications/all-publications/vocations-the-link-between-post-compulsory-education-and-the-labour-market-summaries

whose values and perspectives affect the outcome (Higgins *et al.* 2008). Moreover, these influences start affecting young people's approach to and perceptions of career pathways significantly before they start making conscious education decisions (usually in secondary school).

This means that 'direct' industry interventions such as marketing campaigns can only ever hope to be one influence amongst many, and there needs to be thought given to how government can actively support the positive visibility of trades-based careers. As noted in New Zealand Labour Party (2016), a critical element of this must be high quality careers education and similar schools-focused initiatives.[36]

The current Youth Guarantee (YG) suite of initiatives is arguably the highest profile recent move to support trades-based pathways. However, the actual impact of this programme is unclear, and it is important to recognise that YG is at its core a social policy intervention – not an education one. Promotional materials for YG position it as something relevant to young people as a whole: "Thoughtful use of these tools and resources can support all learners with coherent programmes of learning and qualifications that progress and support their chosen pathway" (Youth Guarantee, n.d.). However, as Gordon *et al.* (2014) note in their TEC-commissioned study of the 'Fees-free' strand of the initiative, in practice Youth Guarantee is a targeted initiative with the goal of reducing the overall NEET population – not one designed to promote the desirability of trades-based education and training for *all* learners.

One example of this is the position of the Vocational Pathways (VPs) initiative, which was developed by the industry training sector and then incorporated by the Ministry of Education within Youth Guarantee. One of the goals of VPs was to enhance the clarity, coherence, and prominence of non-university education pathways, encouraging schools to engage with these paths and making them a more attractive option for all secondary students. However, the Education Review Office's (ERO) recent evaluation of the Vocational Pathways strand found that while some schools were certainly using these in creative ways, in the majority of cases:

> … Vocational Pathways were functioning as an add-on to a traditional curriculum model, and their influence on curriculum was limited. A perception that 'vocational' education is less rigorous or prestigious than the more traditional academic track persists among some school leaders, students and whānau …

> Vocational Pathways has considerable potential to engage students in relevant learning and to provide greater continuity of learning for students as they transition to further education and/or employment. At present, many schools are implementing the programme at a level that does not fully support this potential. (Education Review Office, 2016, 5-6).[37]

These comments from ERO regarding the perception of VET not just by school staff, but by whānau and students themselves highlight the point that it is critical to consider less visible social influences on decisions. Foskett and Hemsley-Brown (1999) note that "within [young people's decision-making], perceptions of reality rather than any objective reality are of fundamental importance. It is the individual's development of a complex set of internalised images which 'forms' the making of decisions and choices" (235). What this means is that

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[36] This includes better support for learners' career decision-making and management competency. In this context it is worth noting concerns that the integration of Careers NZ into the TEC seems to have been accompanied by a shift in emphasis away from supporting competencies in favour of basic information provision (See NZCER 2016).

[37] The Ministry of Education's recent decision to disestablish specialist support for vocational pathways on the ground that these were now 'business as usual' seems particularly problematic in this light.

career choices are particularly susceptible to how society constructs and presents particular choices – including whether those careers are 'suitable' for someone of a particular ethnicity, gender, or social status.

Although there has been little empirical examination of this in New Zealand, one of the few studies that has explored this status effect found "… a relationship between social class (as proxied by the decile rating of the schools the subject last attended) and propensity to progress to different forms of VET" (Strathdee 2012, 73). Moreover, the Post-Primary Teachers Association has stated that "New Zealand has some way to go … before the community accords vocational options the same parity of esteem that is accorded to university programmes" (PPTA 2014, 7).

Social status is fundamentally a cultural phenomenon involving collective values, beliefs, and perceptions, and therefore difficult to directly affect. However, what can be addressed are the implicit – and often unintended – messages that are sent by policy and regulatory settings. The in-practice characterisation of Youth Guarantee noted above is one example of this, as are the constraints on ITOs offering higher-level programmes discussed earlier. But there are also fundamental structural elements of our education system that reinforce prejudices against VET.

For example the New Zealand Qualifications Framework is set up as a one-size-fits-all linear progression from Level One (the most basic foundational qualification) to Level Ten (Doctorates). This has the advantage of clarity in that every qualification uses the same single 'ladder', and by integrating both 'academic' and 'vocational' education theoretically signals that all education is valid and part of a single system – there is no division between forms. In practice, however, the construction of the framework sends a message that VET is intrinsically inferior to other forms of education.

On the NZQF, the entry level qualification for most 'skilled' trades occupations (such as builders, electricians, or hairdressers) is Level 4 – notably, New Zealand Apprenticeships all lead to the awarding of a Level 4 qualification. Level 5 and 6 qualifications represent advanced training in these fields, or the ability to practice in specialised roles. In practice, vocational education and training ceases at this point – Level 7 marks the transition point between trades and regulated professions (with some overlap at levels 5 and 6). However, on the Framework a degree qualification – the entry level 'academic' qualification – sits at Level 7.

In other words, our framework sends the message that even advanced technical qualifications intended for those highly developed existing skills and experience involve less sophisticated knowledge than, say, an introductory media or business studies qualification.[38] This is despite research showing that, for example, trades programmes involve comprehending and working with vocabulary that is as technically complex and linguistically challenging as academic texts (Parkinson *et al.* 2017).

Vaughan (2012) identifies this positioning as a notable factor behind the lower esteem in which industry training is held. By situating trades-based qualifications at a lower level on the framework than degree qualifications, our system is implying that vocational education and
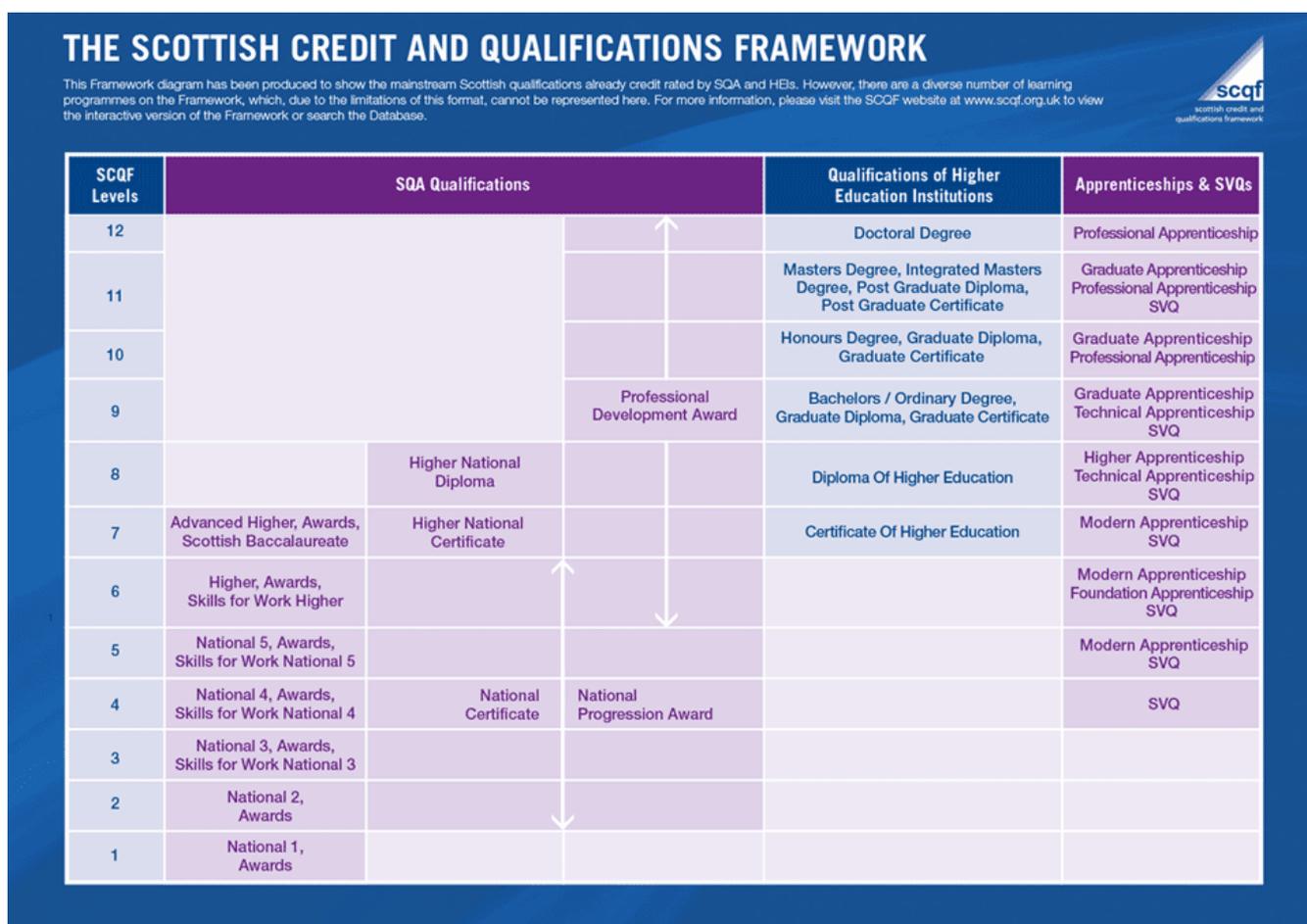
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[38] It is often argued that a standard three-year Bachelors programme starts with Level 5-equivalent courses in first year, progresses to Level 6 in second year, and then culminates in Level 7 in the third year. However, no recognition of learning exists for these two years, these courses are not based on nationally-regulated standards, and this views still implies that the thousands of students who complete first year degree study have an equivalent set of skills in their discipline to a registered builder or electrician.

training is inferior and less socially desirable than other education and career pathways. Thus, while families, communities, and schools may state that at the macro-level VET is important and desirable for society, at the micro-level they will often encourage young people to follow more desirable or high-status pathways.

In contrast, some other jurisdictions adopt a more equitable model. For example, the Scottish Credit and Qualifications Framework (SCQF) involves different 'tracks' within which 'higher' education and 'vocational' education both sit on the SCQF, but the levels mean slightly different things within those tracks. As shown in Figure 3 below, this does not mean direct equivalence of qualifications – for example, a Modern Apprenticeship still sits below a Bachelors degree – but critically it demonstrates a skill development pathway for each track that validates the focus of that pathway. So, for example, the highest vocational qualification – a 'Professional Apprenticeship' – is positioned as equivalent within its domain as equivalent to the highest academic qualification – a Doctorate. Although not a clear-cut solution to parity of esteem issues, this provides greater comparative recognition of the sophistication of the skills and knowledge involved in VET.

Figure 3: The Scottish credit and qualifications framework

THE SCOTTISH CREDIT AND QUALIFICATIONS FRAMEWORK

This Framework diagram has been produced to show the mainstream Scottish qualifications already credit rated by SQA and HEIs. However, there are a diverse number of learning programmes on the Framework, which, due to the limitations of this format, cannot be represented here. For more information, please visit the SCQF website at www.scqf.org.uk to view the interactive version of the Framework or search the Database.

SCQF Levels	SQA Qualifications				Qualifications of Higher Education Institutions	Apprenticeships & SVQs
12					Doctoral Degree	Professional Apprenticeship
11					Masters Degree, Integrated Masters Degree, Post Graduate Diploma, Post Graduate Certificate	Graduate Apprenticeship Professional Apprenticeship SVQ
10					Honours Degree, Graduate Diploma, Graduate Certificate	Graduate Apprenticeship Professional Apprenticeship
9				Professional Development Award	Bachelors / Ordinary Degree, Graduate Diploma, Graduate Certificate	Graduate Apprenticeship Technical Apprenticeship SVQ
8		Higher National Diploma			Diploma Of Higher Education	Higher Apprenticeship Technical Apprenticeship SVQ
7	Advanced Higher, Awards, Scottish Baccalaureate	Higher National Certificate			Certificate Of Higher Education	Modern Apprenticeship SVQ
6	Higher, Awards, Skills for Work Higher					Modern Apprenticeship Foundation Apprenticeship SVQ
5	National 5, Awards, Skills for Work National 5					Modern Apprenticeship SVQ
4	National 4, Awards, Skills for Work National 4	National Certificate	National Progression Award			SVQ
3	National 3, Awards, Skills for Work National 3					
2	National 2, Awards					
1	National 1, Awards					

Source: Reproduced from Scottish Credit and Qualifications Framework (n.d.)

3.2.2 Improving workforce diversity

Ensuring a sustainable workforce supply is not simply a matter of encouraging more people choosing an industry pathway, but also involves paying attention to the *type* of people that decide to enter the workforce. New Zealand's population demographics are undergoing

significant change and so the demographics of the Building and Construction industry will likewise need to change. While some of this may occur naturally, we also need to consider how the industry can facilitate this – and in particular, how it can remove barriers that may prevent it becoming more diverse.

Currently, the construction workforce is largely older, white, and male – in 2016, the average age of workers in the sector was 43 (and a third were over 50), 82% identified as New Zealand European/ Pākehā, and only 19% were women.[39] The ageing of the workforce in and of itself is not an issue for diversity (and actually reflects New Zealand workforce demographics), but it does indicate that the sector needs to consider how it will react to the retirement of its current workforce. As discussed earlier, this is largely a 'pipeline' issue that can be addressed through ensuring that construction-based careers are seen as an attractive option by young people – although moves such as BCITO's digital initiatives can better reflect some notions of how modern young people may choose to learn.

On the other hand, the ethnic composition of the industry is a more significant issue. New Zealand is experiencing significant changes in ethnicity; on current trends, it is forecast that in twenty years the percentage of the population identifying as European/Pākehā will fall below 50% for the first time since colonisation, while the proportions identifying as Māori or of Pacific or Asian ethnicities will experience notable increases (Statistics NZ 2017c). The younger age profile of Māori and Pacific peoples in particular will be of significant relevance to the industry, as older New Zealand Europeans 'age out' of construction roles.

The Building and Construction industry has been identified as a key avenue for addressing the economic, social, and educational marginalisation of Māori and Pacific New Zealanders, through initiatives such as the government's Māori and Pacific Trades Training (MPTT) scheme and Ngai Tahu's *Hei Toki ki te Rika* initiative. Improving Māori and Pacific success is also a key priority in the current Tertiary Education Strategy, and ITOs have been active in exploring how to support these learners (see Kerehoma *et al.* 2013 and Ryan *et al.* 2017). Given that Māori and Pacific demographics in both the industry and BCITO are close to those of the labour force,[40] it seems that participation by these groups in the industry is more a matter of maintaining current trends and supporting progression to higher education and career levels than encouraging significant new growth.

However, the situation is noticeably different for New Zealand's Asian communities. People from Asian ethnic groups – including Chinese, Filipino, Indian, and others – make up approximately 6% of current employees in the Building and Construction industry, but 14% of all those employed in New Zealand (Statistics NZ 2017d). There is clearly significant potential for the industry to build its appeal in these communities. Improving engagement with Asian communities is, however, not simply a matter of taking advantage of an opportunity for growth. Current forecasts estimate that by 2038 approximately 21% of the New Zealand Population will identify as being of Asian ethnicity (Statistics NZ 2017c), including 26% of people aged 15-24. This means that Asian New Zealanders will comprise a significant component of the potential recruits for the Building and Construction sector, and that continued failure to attract people from Asian communities could lead to structural workforce shortages. To date, little work has been undertaken on encouraging Asian New Zealanders into construction careers, but this will become more critical over time.

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[39] Data extracted from Infometrics Sector Profile tool, as referenced in BCITO Workforce Development Plans.
[40] In June 2017, 12% of the total labour force identified as Māori and 6% as Pacific (Statistics NZ 2017d). By comparison, in the most recent industry statistics 12% of the construction workforce was Māori and 5% Pacific, and of BCITO's learners 16% identified as Māori and 6% with Pacific ethnicities.

Perhaps the most significant area in which workforce diversity can be built, however, is with regards to gender. The Ministry for Women has highlighted Building and Construction as a major source of gender segregation in the New Zealand workforce (Ministry of Women n.d.). Not only do women make up a small percentage of the workforce as noted earlier, but most of these are employed in jobs that are gendered as 'female', such as business support and administration roles; under 3% of BCITO's apprentices are women. In an environment with slower population growth and greater competition between industries for young people, this is not sustainable.

The Building Construction industry itself needs to take responsibility for the very low presence of women. Roberts *et al.* (2008), Scripps (2006) and others have identified the existence of strong barriers in the form of workplace and industry culture that not only discourage women from entering the industry in the first place, but also from remaining in it over time. This has been increasing recognised by the sector in recent years, and BCITO has begun work – co-funded by Ako Aotearoa's National Project Fund – exploring tools and strategies that can support more women into construction careers.

However, there are limits to what the industry itself can achieve. In particular, earlier research has identified career perceptions as an important initial barrier to encouraging young women into building and construction (BCITO 2012). There is clear scope for other institutions within society – such as schools and careers educators – to explore how they can support greater career choice by women and specifically work within the Building and Construction industry.

3.3   Ensuring an effective investment system

Associated proposals

- That in addition to its support for skills planning in the economy as a whole, the Government works with industry to establish a construction labour force supply monitoring and development unit.

- That the Government use its procurement practices to incentivise firms to train.

- That the Government partner with the construction industry to trial a financial incentive programme to support those employers who train.

- That the Government ensures New Zealand's education and immigration frameworks are complementary and not competitive.

The final core strategic challenge for industry training in Building and Construction is making sure that the process of investment in training is effective and sustainable. Importantly, 'the investment system' in this context does not specifically refer to government funding policies – although it does emerge from those issues. There will always be debates over appropriate Standard Training Measure (STM) rates, and whether it is appropriate for ITOs' public funding to be linked only to the arranging training dimension of their legislatively required functions. In a broad sense, however, the lower per-learner funding level applied to industry training (compared to Student Achievement Component funding) recognises the role of employers in

industry training. The assumption behind this is that where providers are required to maintain facilities and infrastructure such as classrooms, appropriately-equipped workshops and simulated learning environments etc., in industry training these are effectively provided by the employer.[41]

However, this same reliance on 'real world' workplaces also means that the industry training investment system is more complex than in other settings. As discussed in section 1 of this report, the industry training system involves three customers making investment decisions: the government, the learner, and the industry. Consequently, a high-functioning industry training system needs to consider not only why governments and learners invest in education, but also why *industries* choose to invest in training.

Understanding this issue is particularly important given the factors discussed in Section 2 of this report that make it more difficult or discourage firms from investing in skills, and that multiple reports have identified the industry's lack of skills as a key barrier to productivity.[42] This section of the report focuses on this issue, and how to facilitate the Building and Construction industry's investment in industry training.

3.3.1 Improving labour force planning[43]

Numerous reports are and have been undertaken on the future of the Building and Construction industry and consequent number of workers required to support it. These include the government's *National Construction Pipeline* and *Future Demand for Construction Workers* report series. However, while these reports discuss the 'demand' side of the skills equation, they do not address the 'supply' side: whether we are training enough future employees to meet forecast demand.

In New Zealand we operate a heavily devolved tertiary education system. Reforms from the early 2000s have moved away from the fully uncapped and deregulated, 'bums on seats' approach to enrolments of the 1990s; the introduction of the Tertiary Education Strategy and negotiated investment plans encouraged all TEOs to think more strategically about their business. However, not only do these instruments constitute relatively light-handed forms of steering (Ako Aotearoa 2016), they are focused on encouraging better internal TEO planning rather than meeting labour force needs.

In practice, New Zealand relies on market signalling to meet the labour force needs of individual industries. Our system places responsibility on firms and sector bodies to communicate their need for employees, and assumes that learners will respond to those decisions and choose to enrol in relevant programmes. The fundamental determinant of enrolment patterns – and thus the supply of trained workers – remains individual student choice. With the removal of the 'industry skills leadership' role from ITOs in the early 2010s, there are no bodies with formal responsibility for thinking about the longer-term and strategic skill needs of a sector, or formally bridging the gap between the worlds of education and work. Industries are expected to think about their current and future skill needs, for

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[41] The position of staffing costs in this regard is less clear. While ITOs do not need to employ 'teaching' staff, they do require assessors, moderators, programme and qualification design staff etc. whose functions are often undertaken by teaching staff in provider-based settings. The highly dispersed nature of some industries can also significantly increase some costs, such as the need for travel and investment in mobile technology to support workplace assessors, which are less relevant or important for providers.

[42] See, for example, MBIE (2013), PWC (2016), Construction Strategy Group (2017d).

[43] This section focuses on planning related to roles within the workforce. However, better planning would also likely involve addressing the issues of workforce diversity described in section 3.2.2 of this report.

example through the work of groups such as the Construction Strategy Group, but these bodies have no meaningful levers to translate that thinking into influence over supply.

For Building and Construction this lack of coordination is a particular issue given the aforementioned dynamic nature of the industry. Not only does it operate in a 'boom and bust' cycle, but most firms are SMEs that have little capacity to carry employees or invest in training when demand falls, and this encourages a relatively short-term approach to firms' investment in training. The industry therefore regularly suffers from skill shortages when demand rises, due in large part to low training levels and skilled employees leaving the industry during the down-cycle (PWC 2016). While market signalling approaches to supply can work reasonably well when demand is relatively stable, in an industry where demand is volatile they are far less effective (for example, there will be an inevitable delay between demand increasing and signals being recognised and responded to by potential employees).

Building and Construction is not the only industry facing this situation – Hospitality, for example, is also characterised by small firms and cyclic demand. However, not only are the industry's cycles more extreme than others, the Building and Construction industry's role as an infrastructure industry means that its work underpins performance and development in many other parts of the economy – MBIE has referred to it as "a key driver of economic growth" (2013, 10). Given this, there is a case for the government to play a more active approach in managing the supply of the construction workforce.

Since the 1980s New Zealand has largely moved away from direct workforce planning approaches – the health sector being an arguable exception to this – but a more active approach does not mean 'heavy handed' regulation of tertiary education enrolment and delivery. It is also critical that industry is involved in such planning. An obvious way through this would be to build on the work the government already undertakes on forecasting future demand (both in the industry and for employees), and establish some model of a labour force development unit or team that applied the same approach to understanding current and future supply. Such a body would, in partnership with BCITO and industry, and other TEOS, monitor how the flow of enrolments and completions in Building and Construction apprenticeships, workplace training, and provider-based programmes reflect both current and future need.

Having such a unit would place the government in a better position to use its education and other policy levers to proactively respond to future market needs, and smooth out current fluctuations in workforce supply. Establishing such a unit in partnership with industry would also ensure that such information was fit for purpose to enable better workforce planning at the firm/ employer level. This would include considering the number of learners/ apprentices that need to be in the system at any one time, with the ultimate goal of avoiding significant over- and under-delivery of skilled workers.

Related to this is greater consideration of the levers available to the government to influence and encourage investment in training by industry. While public funding is the most explicit of these, there are also broader levers that incentivise training. For example, the Licensed Building Practitioner (LBP) regime is primarily a method of ensuring high-quality construction work in critical areas. However, it also provides a material incentive for Building and Construction workers to engage in training and ongoing professional development, and for firms to support this activity – although this incentive would be stronger if possessing relevant qualifications was a universal precondition for gaining LBP status.

One straightforward, low-cost, and low-compliance method of encouraging training would be through the government's own procurement policies. While residential and private

commercial clients might form the majority of construction activity in New Zealand, the government is also a significant source of demand. Moreover, while private sector demand tends to be highly cyclical and operate in something of a 'boom and bust' cycle, government demand is far more stable. Indeed, counter-cyclical government investment has been identified as an important potential method of smoothing out fluctuations in demand and giving firms a more certain and stable industry environment (PWC 2016).

The public sector's position as a major source of clients and large-scale construction work means that its procurement policies can have significant effects on the industry. By requiring or encouraging public sector agencies to include participation in training within their procurement evaluation and selection criteria the government would strongly incentivise the industry to invest in developing its workforce. This could be achieved through formal means such as the *Principles of Government Procurement* and/or *Rules of Sourcing*, or through the guidance the government provides on sustainable procurement practices. In conjunction with the improved supply planning discussed above, such an approach would help maintain apprentice numbers – particularly during any future recession.

3.3.2 <u>Revising industry funding sources</u>

The industry training system requires all ITOs to be co-funded by their industries as well as the government. While the government provides public funding for industry training, as with other parts of tertiary education this is directed towards maintaining the system itself– i.e. the cost of managing the ITO. Firms themselves are not subsidised for taking on apprentices.

Industry contribution is an important principle within industry training as it ensures our industries have 'skin in the game', and consequently that our standards and qualifications reflect genuine industry demand. However, this cost can also dampen the willingness and ability of individual employers to take on trainees. As well as the direct financial cost involved in training, employers effectively provide a significant 'in-kind' contribution when they take on a trainee in the form of lower staff productivity both of new staff and those involved in training them on-job, the cost of materials required for rework, and the like. While larger employers may be able to carry this relatively easily, as noted in section 2 of this report it can be an excessive burden for the SMEs that constitute the majority of construction firms.

We know that providing even a small amount of direct support to firms can encourage participation in training. The clearest evidence of this is the 2013 'Apprenticeship Reboot", which provided a relatively modest subsidy to employers and apprentices for signing up ($1000 or $2000 depending on trade) and contributed not just to the numbers of BCITO apprentices growing by 92%, but to the number of individual firms involved in training growing by 73%. Moreover, given that completion and credit achievement rates did not fall, these enrolments were 'genuine' – i.e. they did not simply involve firms and trainees signing up to access the cash. Although this does not necessarily show that firm-level costs constrain businesses' ability to support trainees and apprentices, it does suggest that financial support would lead to greater uptake of training and not simply be gamed by employers.

One way to reconcile industry financial contribution with firm-level financial support is through ensuring that subsidies come from industry itself; most simply through a levy. Examples of training levies can be found internationally; for example, the United Kingdom recently introduced an Apprenticeship Levy on the payroll of large employers that can be accessed to support individual firms that train, while Western Australia has operated a levy-based 'Construction Training Fund' since 1990 and Queensland has had a similar system since 1998. These systems both make training more accessible, and encourage enterprises to train in order to gain benefits from the funds that they contribute. Levies do have some

conceptual precedent in New Zealand's industry training system, with Part 5 of the *Industry Training and Apprenticeships Act 2002* allowing an ITO to impose a levy following a ballot of the industry.[44]

While establishing a levy system would require significant negotiation with the industry, it is important to note that firms already contribute to the compulsory Building Levy. We understand that the funds collected each year via this levy are not fully spent, and so as a starting point using this unallocated funding to support a direct subsidy scheme would be a useful way to pilot such a scheme. This has been endorsed in principle by New Zealand's Construction Strategy Group (2017d).

3.3.3 Addressing the training-immigration balance[45]

Immigration will always be an important additional source of skills for our Building and Construction industry. Not only is New Zealand's workforce as a whole strongly reliant on migration – in 2012 approximately a quarter of employed New Zealanders were born overseas (Statistics NZ, 2013) – but as discussed several times in this document, the Building and Construction industry is characterized by particularly severe boom and bust cycles. During periods of rapidly increasing demand, pre-trained migrants provide skilled labour at relatively short notice; this is not simply the case for New Zealand but an international phenomenon, with a large component of the global construction workforce consisting of international migrants (Buckley *et al.* 2016).

Over-reliance on immigration can, however, also create problems. Industry training is, as the name suggests, an industry-led or -based system of supplying skills; it involves a prospective carpenter, electrician, hairdresser, plumber, carer or the like immediately entering and beginning work in the industry rather than progressing through education and then joining a labour pool for employers to draw on. Theoretically such systems tend towards an equilibrium between supply and demand for skills. Firms have to invest time and resources in their trainees and will usually have to 'carry' learners for some time before they become fully productive,[46] so therefore only invest in training when they genuinely need additional skills and not invest when there exists an over-supply.

However, such systems can be disrupted when there exist easy ways for firms to access required skills *without* incurring the cost involved in taking on trainees and apprentices. In most cases, such alternatives come with costs or disincentives of their own. For example, provider-based VET involves a time-lag between students enrolling and graduating, and as discussed earlier not only do firms have less direct influence over content, but newly-graduated practitioners will often still require additional time to acclimatise to or cultivate the 'deep knowledge' of workplace practices. 'Poaching' staff from other employers is always an option, but not only can this be expensive (given the need to entice staff with better conditions and pay) the more common and accepted this becomes the more likely it is that a poacher will become a poachee. In contrast, employers may feel that many of the potential downsides of 'importing' workers – such as possible language barriers and cultural

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[44] Though note that the Act does prevent levy funds from being used for "any matter that directly benefits 1 or more individual members of the levy group, as opposed to generally benefiting the relevant industry as a whole" (s.29(4)). This could provide some difficulties in using such funds for direct firm support.

[45] Labour market effects are only one aspect of immigration, and must be considered alongside factors such as humanitarian considerations, international obligations etc. This report discusses immigration specifically as it relates to meeting skill needs.

[46] In contrast, provider-based systems allow employers to externalise most financial and non-financial costs of training.

differences, or different technical requirements – can be mitigated through recruitment processes, supervision, or upskilling that is perceived to involve less investment than training new New Zealand workers.

As noted earlier, immigration is an accepted and necessary practice within the Building and Construction industry. Not only are the peaks and troughs of the industry's business cycle more severe than other sectors, upswings and downturns both tend to commence at short notice.[47] Coupled with the tendency of workers to leave the industry or – somewhat ironically – to travel and work overseas when downturns hit (PWC 2016) migrant employees are critical for the industry to be able to respond to surges in demand. Following on from that, policy moves such as easing work visa requirements are an important part of supporting Building and Construction practice.

In recent years, however, there seems to have been a strong public emphasis on pushing immigration as the *primary* method for meeting skill needs. There are a range of reasons as to why immigration can be seen as a more desirable or easier method of obtaining skills than training. Not only does it require less investment on the part of individual firms (with smaller businesses able to piggyback on international marketing campaigns or roadshows by larger firms), but practitioners can begin working immediately; by using international workers a firm can avoid both the time-lag involved in provider-based education and the need to support partially-trained workers during their apprenticeship.

These advantages can lead to a vicious cycle in which as immigration becomes an easier source of skills, the incentives to invest in domestic skill development become weaker. This in turn leads to a decrease in the domestic supply of skills, leading to a greater need to rely on international labour to meet skill needs and policy moves to support this, further reducing the incentives to invest in training. While the national-level benefits and drawbacks from increased migration are complex, easy access to skilled migrants in the UK and US has been cited as a possible reason for ongoing weaknesses in VET systems and the reluctance of firms to take responsibility for supporting training (see Wickham 2017). Arguably, an example of such a situation can be seen in New Zealand's medical workforce, where reliance on internationally-qualified doctors to fill skill gaps has led to a situation where close to half of the workforce is overseas-trained (Medical Council of New Zealand 2017).

It is not practical to expect our VET system to be able to cope with the unique pace of demand cycles in the industry, particularly as policies and signals from the incoming Government – such as the *Kiwibuild* programme and agreements with the Green Party around ensuring the quality of housing stock – suggest that demand is likely to continue growing in the future. The need for skilled workers will not only be a product of new construction, but also ongoing needs for maintenance and refurbishment.   Immigration will be key for meeting this demand. For this reason, the relationship between training and migration-based approaches to meeting skill needs is best thought of as not a problem to be solved, but rather a tension to be managed.

Managing this tension is fundamentally a matter of working to ensure that migration and training complement each other rather than compete. A more responsive policy and regulatory framework for industry training (and VET more broadly) that better reflects how skills are developed and used in practice should enhance the relative appeal of investing in training. However, it must also involve more explicitly thinking about immigration as one part

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[47] PWC (2016) noted that historically it has been quite possible for prospective workers to enroll in a provider-based training programme during a boom period when demand for employees is high but graduate during a bust period and be unable to find work.

of a skills supply system and considering how policy settings fit with other elements of that system. The incoming government appears to be signaling that it will adopt such an approach, for example through its proposed 'Kiwibuild Visa' that facilitates migration but links it to investing in training (New Zealand Labour Party n.d.b). Given this, for BCITO the key future challenge in this area is likely to be ensuring that it remains part of this conversation.

Conclusion

> Public policy approaches to skills and productivity must … take a broad view, and include a very long-term perspective. The contribution of skills to productivity depends not only on the overall level of educational achievement, but on how the supply of skills is matched to changing demand (through labour market responses, responsive tertiary education and training systems, and migration) and on firms' ability to effectively utilise workforce skills. (MacCormick 2008, 2)

This report has had two purposes. Firstly, it provides additional background to the proposals BCITO outlined in its Briefing to the Incoming Minister of Education. The material in this report expands on that Briefing, providing more detail as to why BCITO's recommendations can improve the Building and Construction industry's access to and use of skills. Its second function, however, is broader: to promote discussion about our industry training system and how we approach vocational education.

Discussion about skills policy often focuses on how we can improve communication between largely separate worlds of education (ITPs, PTEs, universities, government education agencies etc.) and industry (employer and employee bodies, regulators, individual firms etc.). Industry Training Organisations, however, are part of both worlds. They are established and regulated as TEOs, while at the same time being owned by and directly serving the industries within their coverage. This means that an ITO's existence inherently involves understanding the pedagogical and regulatory requirements of good education practice, and balance that what is practically possible for and desired by their industries.[48] Sometimes these different interests align easily and sometimes they lead to tension, but the fundamental purpose of an ITO is to reconcile them in the interests of employers and employees.

This is important given that, as MacCormick implies above, simply increasing the number of people who possess qualifications is unlikely to lead to meaningful or sustainable improvements in productivity, employability, and other indicators of socio-economic wellbeing. Possessing relevant skills and being able to use them in a work environment that is capable of making the best use of those skills, is what leads to improved personal, business, and national outcomes. As the skills ecosystem framework highlights, this necessitates not just actions in both the world of education and the world of work, but also approaching policy settings and the decisions of individuals as active elements within the 'system' of skill production.

Industry training exists at the intersection of education and employment, and ITOs are ideally placed to facilitate high-quality skills ecosystems within their industries. Fully realising this potential, however, requires that policy settings, regulations, and other elements of those ecosystems support that function. Highlighting the issues in this report will help start conversations with policymakers, providers, and others about how our current approach to skill development and deployment enables or undermines the contribution of not just ITOs but our VET system as a whole to better outcomes for employees, for firms, and for New Zealand as a whole.

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[48] And, of course, 'industry needs' themselves are not always homogenous. There can be significant differences between the situations of various sub-sectors, the interests of employers and employees, and the short-term needs of individual firms versus the long-term requirements of the industry as a whole.

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