



# The return on training for boat builders

A summary of key findings

August 2016

## Summary

The Industry Training Federation (ITF), in partnership with its member Industry training organisations (ITOs), has undertaken research to investigate the return on investment from training. The ITF saw the opportunity to provide further value to individual ITOs from the information gathered and presented to the ITF. This report provides these further insights specifically for use by NZMAC, focused on the boat builder role.

Training offers firms a variety of benefits including higher profits through increased trade proficiency. We estimate the return on investment from training, from this benefit alone, to be \$3.44 to \$1.00 for boat builders.

## Introduction

### Overview

This document provides a summary of work undertaken on behalf of the ITF to quantify the return on investment from training for boat builders. This analysis was undertaken as a part of a larger project that investigated returns in a number of industries across the industry training sector.

### The benefits of training

Training staff, provides businesses a number of benefits including:

1. **Training enable firms to earn profits from new workers' time** – Employers in the boat building business have a choice about whether they train new staff through formal training programmes, such as those offered by NZMAC, or simply allow them to gain skills informally on-the-job. In most cases formal training improves characteristics like labour productivity and quality of workmanship. In this work we use the term trade proficiency to describe the combination of these desirable characteristics.

*“Training provides measures for the individual and builds confidence”*

High worker proficiency flow through to increased revenues, reduced wastage and related costs, and therefore higher profits. Formal training can both raise the limit on a staff member's proficiency and accelerate the rate at which proficiency is gained. We estimate how much these benefits are worth, and compare them to the costs of training, to determine the return on investment from training.

2. **Training increases the trade proficiency of the firm** – In some industries, a decision to formally *train* a new, inexperienced staff member is taken together with the decision to *employ* that staff member. In particular, this is true for occupations with a strong tradition of formal apprenticeships or trades that require staff to be certified. In these cases, a benefit of training is that it allows employers to take on new staff and grow their business.

It is useful to consider the costs and benefits of employing new staff alongside an analysis of the benefits of training. We do this in the analysis that follows.

*“Training staff means quality workmanship, pride, staff staying and happy customers”.*

3. **Training helps retain workers** – Retaining staff is, arguably, the single most important way that employers can maintain and grow their teams' proficiency. Providing training is widely accepted to be one way that firms can keep staff for longer.

*"Training creates a desire for a career".*

While it is difficult to quantify the impact that training has on retention, our modelling approach provides a way to estimate the impact that retention has on profits. We consider how the return on investment from training increases if we assume that training causes staff to stay with an employer 20% longer.

4. **Training increases management proficiency of the firm** – Training allows staff, managers and business owners to better contribute to the management of a firm.

*"We need leadership and people management skills".*

We do not quantify the impact of this benefit of training in this work. However, we note that the contribution that all trained staff make (not just managers) to the activities needed to run a business are significant. In some cases, these will make a greater contribution than the impact on of trade proficiency. The benefit of management proficiency should therefore be seen as additional to the returns reported here.

5. **Training allows firms to meet compliance and good practice requirements** – Firms of all types are increasingly required to meet legislative, industry and customer compliance requirements. In some industries, staff training and certification are requirements simply to operate at all. In almost all cases, staff training is an excellent way to ensure that employers meet good practice requirements.

As with management proficiency above, we do not attempt to factor this benefit of training in our quantitative analysis. Again, therefore, the benefits of meeting compliance requirements should be seen as additional to the returns reported here.

## Approach to this work

Our estimates of the return on investment from training are derived by comparing the profitability of businesses that *formally* train all of their staff to the profitability of businesses that do not formally train any of their staff. The difference in profitability is related to the costs of training and relative differences in employee proficiencies to determine the return on investment.

The methodology used in this work was based on VIPER<sup>1</sup> – a structured approach to valuing returns on training. The approach works from a measure of firm profits over time. The drivers of profitability are broken down to identify individual attributes of a firm's performance and evaluate the relative importance of these. The impact of a team's trade and management proficiencies on these attributes is then considered. Finally, the contribution of training to an individual's proficiency is weighted relative to the contribution from experience. This approach allows assumptions and inputs from interviews to be tested

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<sup>1</sup> Valuing Investment in People – Economic Returns. This model has been developed by Scarlatti Limited and Kevin Bryant and has been used on a range of projects with New Zealand Industry Training Organisations.

for reasonableness at every stage of the process. More detail about the analytical approach is available on request from ITF.

Key inputs were gathered using interviews with ITOs and employers. Common patterns emerged despite employers often finding it challenging to respond to questions in which they were asked to quantify somewhat ethereal measures. Part of the modelling process was to interpret interview and discussion results into the ‘language’ of the model and to impose a level of consistency across different occupations.

## Return on investment from training for boat building

### Returns from employing new staff

We start our reporting of results by considering the return on investment from employing an inexperienced new employee.

We consider a case in which a firm has enough work on to fully utilize an additional person. We use the VIPER model to construct the two curves shown in Figure 1. One curve shows the costs of employing a new worker *excluding* the costs of formal training. These costs are expected to increase over time as the wage rate increases. The other curve shows how the ‘billability’ of a worker changes over time. Both curves are based on inputs gathered in the course of this work. ‘Billability’ here should be loosely interpreted as workers’ contribution to overall project income rather than individual billings.



Figure 1: Costs and rewards of employing an inexperienced new worker over time

The intersection of the curves in Figure 1 provides an indication of point in time that a new employee earns his or her employer more than the costs of his or her employment. For boat builders this point is typically about one year into employment. After about two years the profits on an employee's time will have paid off the 'investment' of employing that worker in the first year.

## Returns from training new employees

The second part of our analysis considers how the costs of, and returns from, employing a new worker change if the employee is entered into a formal training programme.

The investment required to enrol a new employee in a training programme leading to the New Zealand Certificate in Boat Building is approximately \$11,000 spread over five years (see appendix). This adds to the costs of employment creating a new cost curve (see Figure 2). Formally trained workers both increase billability faster, and earn more than untrained workers over the long run.

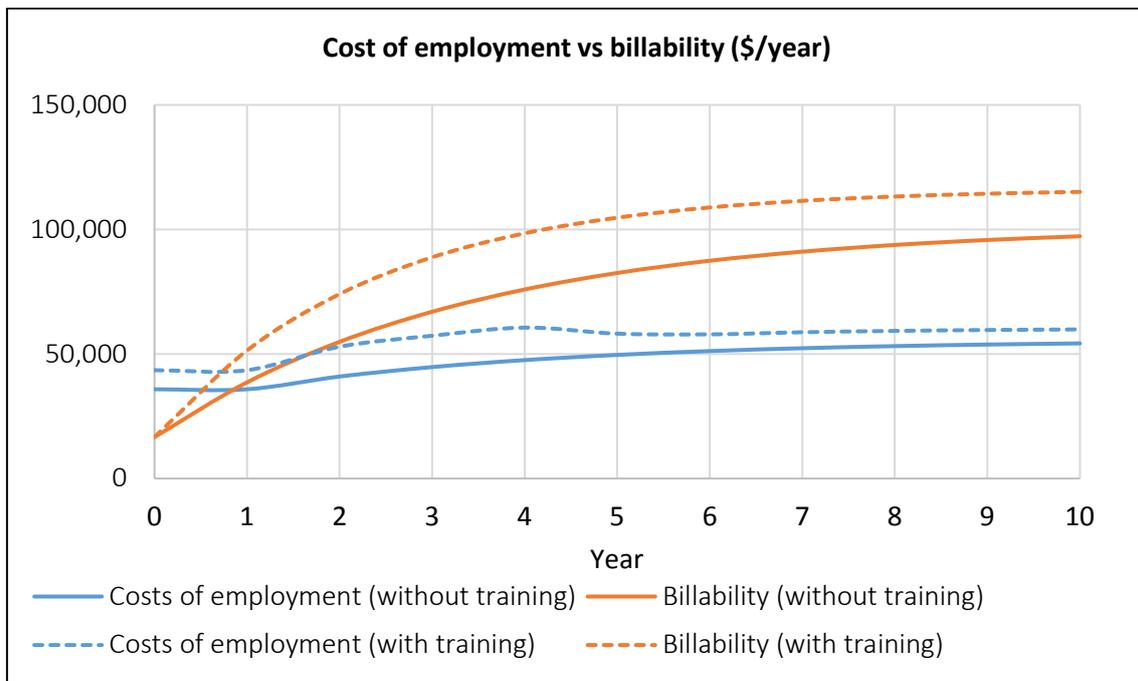


Figure 2: Costs and rewards of employing an inexperienced new worker over time

The costs of training are roughly offset by the extra billability gained from training, thereby keeping the breakeven period about the same i.e. one year. After that time, however, the difference in profitability for that worker is considerably increased.

The VIPER model allows us to isolate the return on investment from the decision to train staff by comparing the profitability of a team that trains all of its staff to a team that compares none of its staff. Our model teams feature workers at different stages of their career which recognizes that some workers will stay well beyond the point of breaking even while some will leave sooner.

For the boat building sector, we estimate the return on investment from training to be in the range \$2.41 - \$5.18 to \$1.00, with a mid-point of \$3.44 to \$1.00.

### Training helps retain workers

One of the benefits of training is improve the retention of staff. This improves the average experience of the team which will, in turn, increase the team proficiency and therefore business performance.

It is hard to separate the difference that training makes on retention from the effect that, say, a good employer has on retention. For example, it is reasonable to believe that good employers will both encourage training and keep good staff longer. We can, however, estimate how much difference staff retention makes to profitability by extending the analysis used to derive the results presented above.

We consider a scenario in which a boat building firm trains all of its staff and consequently keeps them, on average, 20% longer than an otherwise similar firm that doesn't train its staff. In this scenario the mid-point return on investment reported above increases from \$3.44 to \$1.00 to \$3.96 to \$1.00.

## Comparison with other sectors

A comparison of the costs of training, returns from training the return on investment for other types of occupations is shown in Figure 3. In this chart we group training programmes into three categories:

1. Supervisory qualifications – training programmes that provide managerial skills.
2. Apprenticeship qualifications – training programmes typically lasting at least two years
3. 'Traineeship' qualifications - training programmes typically up to one year in duration

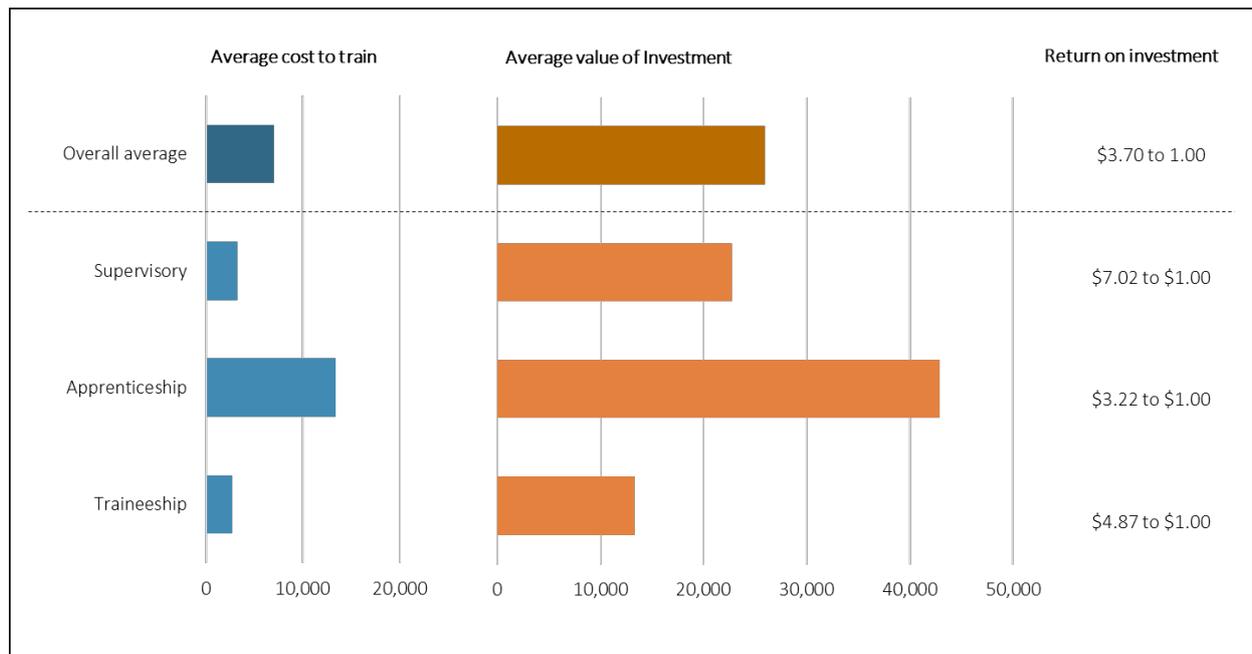


Figure 3: Comparison of returns from training

The number of qualifications in first group is small (just two) so the average RoI value of \$7.02 to \$1.00 needs to be treated as indicative only. However, it illustrates that supervisory training does offer excellent returns.

Both apprenticeship and traineeship programmes offer good returns on investment (\$3.22 to \$1.00 and (\$4.87 to \$1.00 respectively). The differences between the RoI values for these groups probably owe more to the specific choice of programmes selected than any systematic differences between the value of traineeship and apprenticeship training.

Across all the occupations we analysed the return on investment from training was \$3.70 to \$1.00.

## Appendix – Costs of training

### Costs of training

We consider four costs of training. For boat builders these are:

1. Industry contributions of \$3,160 paid over five years.
2. Employee training fees of \$2,319 paid over four years.
3. Paid employee time to attend off-job training. On average we assume this totals \$3,240 over three years although we note that this varies depending on the type of off-job training provided.
4. Time for managers / employer to work with ITOs to provide the formal training process. Note this this excludes the cost of time to actually train employees while at work as this is assumed to be required even if the employee is not engaged in a formal training programme. We assume this cost to be \$500 per year over four years and \$250 for the fifth year.