



Using Benefit Cost Calculations to Assess Returns  
from Apprenticeship Investment in India: Selected  
SME Case studies

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# Table of Contents

<b>1</b>	<b>BACKGROUND.....</b>	<b>1</b>
1.1.	Introduction.....	1
1.2.	India’s ongoing Apprenticeship System Reforms .....	2
1.3.	Development of ROI as initial step to increase outreach and attractiveness of Apprenticeships .....	5
1.4.	Scope of the Study .....	5
1.5.	Structure of Report.....	6
<b>2.</b>	<b>CURRENT INTERNATIONAL EVIDENCE ON THE RETURNS FROM INVESTMENTS FROM APPRENTICESHIPS.....</b>	<b>7</b>
2.1.	Shifting from Cost Analysis to Benefit based research.....	7
2.2.	There are regulatory and institutional differences, which influence enterprises whether and how they train apprentices .....	8
2.3.	Returns from investments also have an impact on work culture, employability and career opportunities .....	10
<b>3</b>	<b>THE ROI APPROACH IN THE CONTEXT OF INDIA .....</b>	<b>11</b>
3.1	Conceptual Framework: ROI in India.....	12
3.2	ROI as an economically measurable value (tangible outcomes) .....	13
3.3	Measuring the Costs and the Benefits.....	14
3.4	The Qualitative and Social Returns from Investments (ROI):.....	18
3.5	Reporting Framework and broader interpretation through other tangible and qualitative benefits.....	18
<b>4</b>	<b>METHOD, CASE STUDIES AND SELECTION OF CASES.....</b>	<b>19</b>
4.1	Case Study Approach.....	19
4.2	Conducting the Employer Case Studies .....	20
4.3	Data Collection and limitations .....	20
4.4	Choice of semi-structured interviews.....	21
4.5	Selection of Cases, approaching enterprises and data availability.....	21
<b>5</b>	<b>THE CASE STUDIES .....</b>	<b>23</b>
5.1	Case Bühler India, Bangalore .....	23
5.2	Case Classic Moulds and Dies (CMD), Chennai .....	27
5.3	Case EFD INDUCTION .....	30
5.4	Case Foodworld, Bangalore.....	33
5.5	Case Lemon Tree Leisure Valley in Gurgaon .....	36
<b>6</b>	<b>APPLICATION OF ROI TO LARGER SURVEYS: WHAT TO KEEP IN MIND.....</b>	<b>40</b>
6.1	Preparation and Sampling .....	40
6.2	Optimising Response Rates .....	41
6.3	Validation of Data in sector specific Round Tables .....	41
<b>7</b>	<b>CONCLUSIONS .....</b>	<b>41</b>
<b>8</b>	<b>BIBLIOGRAPHY .....</b>	<b>45</b>
<b>9</b>	<b>ANNEXURE .....</b>	<b>48</b>



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## Abstract

Strengthening and expanding apprenticeships with the support from the social partners and relevant stakeholders, provides an important window for collaboration between the ILO and its constituents (Government, Employers' organisations and Trade unions) to address the growing youth unemployment challenge in many countries. This document presents a method, a social marketing tool, which gives the empirical evidence that there is a business case for apprenticeships and can be utilized to promote apprenticeships. The method was adapted to the Indian SMEs environment, where usually data collection at enterprise levels is very limited and is based on five case studies from various industries (light and heavy manufacturing, the retail and hotel industry).

The cases re-affirm that apprenticeships create more benefits than costs; investments are in fact often recovered during the apprenticeship period or immediately within the first year itself when apprentices are retained. For many enterprises benefit- cost aspects are one important aspect, which determines training decisions. However, there are also other factors and cultural differences between enterprises, how they see and therefore invest into apprentices: some see apprenticeships more through a production lens, whereby they encourage apprentices to be workplace ready and productive as soon as possible. Other enterprises have a more long-term investment perspective, and aim at retention and employment opportunities.

Till date there is limited research evidence in India about the rationale of hiring apprentices. The ROI method can serve Employers' organizations, Governments and Trade unions to start engaging with enterprises, who hire and train, to assess the ROI during and after training. A follow up survey, using the method applied in this study here could provide a deeper insight and provide the basis for strategic decision making how apprenticeship systems should be designed, as both strategies have different implications on the type and quality of apprenticeships, retention and labour market outcomes, as shown in this paper.





## List of Acronyms and Definitions

ATS	Apprenticeship Training Scheme
CTC	Cost to Company, which usually includes gross salary and social security contributions.
DGTE	Directorate of Training and Employment
GOI	Government of India
HRD	Ministry of Human Resource Development
ITI	Industrial Training Institute
ILO	International Labour Organisation
MOLE	Ministry of Labour and Employment
OECD	Organization for Economic Cooperation and Development
ROI	Returns from Investments
SMEs	Small and Medium Enterprises
TVET	Technical and Vocational Education and Training



## Executive Summary

Today, India is at a cross road when it comes to the Apprenticeship System. Industry and Government acknowledge apprenticeships as effective instrument to improve the employability of young labour market entrants and meet existing skills gaps and shortages in the industry, provided apprenticeships are training focused and relevant. The Indian apprenticeship system however, though well established and supported by legislative and administrative arrangements, remains underutilized, under resourced and faces delivery and quality challenges, which need to be addressed so that the goal of young people acquiring workplace related competencies and employability are met. This led to the ongoing reform efforts initiated by the Ministry of Labour & Employment (MOLE), in consultation with key stakeholders, to redesign the Indian apprenticeship system with the goal that social partners take on an active role in designing and implementing apprenticeships so that current shortcomings are effectively addressed and employers see apprenticeships as a valid option to address their skills gaps and shortages with the effect that young people see apprenticeships as an effective entry point into the labour market.

Strengthening and expanding apprenticeships, with the support from the social partners and relevant stakeholders, opens an important window for collaboration between the ILO and its constituents (Government, Employers' organisations and Trade unions) to address the youth employment challenge. This document presents a method, a social marketing tool, which can provide the empirical evidence that there is a business case in apprenticeships, if quality apprenticeship training is provided. The method was adapted to the Indian SMEs environment, where usually data collection at enterprise levels is very limited. The study takes advantage of the worldwide research efforts, where researchers and policy makers have come together to develop tools (Benefit-Cost Analyses and Returns from Investments, ROI) to establish empirical evidence that apprenticeships actually create no additional costs but in many instances, bring additional value to the company; monetary and non-monetary, often even during the apprenticeship period itself or soon after they are retained.

The ROI method can serve Employers' organizations, Governments and Trade unions to start engaging with enterprises, who hire and train, to assess the ROI during and after training; In the case of enterprises, which do not train, they can promote ROI to look into the potential benefits should they engage in apprenticeships. The method further provides the opportunities for enterprises to optimize their training/apprenticeships decisions, while looking at various aspects besides monetary benefit-costs. This could include making decisions how and how long to train in order to get the learning outcomes and skills they require in an enterprise. Further, it is also important to complement ROI with qualitative employment indicators, which qualify the training process and outcomes, like career opportunities to avoid simplistic assessments based on monetary benefit cost arguments.

This study discusses five case studies, where senior managers from five enterprises were interviewed to assess the costs and benefits of the apprenticeships they provide. A semi-structured questionnaire was pilot tested and the feedback provided by these enterprises led to the refinement of the approach, based on which larger and representative surveys can be conducted. The case studies stem from industries such as the light and heavy manufacturing sector and retail and hotel industry and include short and long term formal apprenticeships as defined by the Indian Apprentices Act 1961(see Section IV). All the cases discuss existing industry specific aspects and related skills gaps and the coping mechanisms of enterprises to ensure adequate human resources. They also depict

### Box 1

The case studies provide a good insight into how benefit cost or the returns on investment approach (ROI) can be adapted to SMEs in the Indian context and how ROI can be used as an effective instrument for enterprises to base their training and hiring decisions on evidence from such an approach.

in detail that different apprenticeship types used lead to different employment outcomes with different career perspectives and wage premiums for apprentices within the enterprise (see section V). Similar to international studies, the cases re-affirm that apprenticeships create more benefits than costs, as in most of the cases costs can be recovered during the apprenticeship period or immediately within the first year itself when apprentices are retained (see table below). Such information is valuable in dispelling the myths that investing in apprentices reaps little financial and other benefits.

**Table 1: Overview of Case Studies and the Net Benefit of Apprenticeship Training**

Company	Trade	Type of apprentices	Net Benefit INR
<b>CASE 1:</b> <b>Bühler India, Bangalore</b> Food processing equipment Medium Sized Company	Technicians, mechanics	Fulltime 1 year ATS apprenticeship after ITI ATS Certification	<b>30,454 INR</b>
		Fulltime 2-year Swiss-Indo apprenticeship (SIVET) after ITI ATS + Swiss certification under SIVET	<b>-167,017 INR</b> <b>(full recovery after 1 year after training)</b>
<b>CASE 2:</b> <b>Classic Moulds &amp; Dies, Chennai, SCORE Member</b> Automotive parts Small Sized Company	Assembly, tool mechanic	ATS 1 year after ITI	<b>106 INR</b>
<b>CASE 3:</b> <b>EFD INDUCTION India, Bangalore</b> 1 tier supplier automotives Medium Sized Company	Technicians, mechanics	Fulltime 1 year ATS apprenticeship after ITI	<b>20,982 INR</b>
		Fulltime 2-year Swiss-Indo apprenticeship (SIVET) after ITI ATS + Swiss certification under SIVET	<b>-194,326 INR</b> <b>(full recovery after 1 year)</b>
<b>CASE 4:</b> <b>Foodworld, Bangalore</b> Retail, Medium-Large Sized Company	Sales executives	Fulltime apprentices ATS, freshers 6 months	<b>-7613 INR</b> <b>(full recovery after 1 year after training)</b>
<b>CASE 5:</b> <b>Lemon Tree Hotel, Gurgaon, Delhi</b> Hotel Medium Sized Company	Cooks Clerks	Fulltime apprentices ATS, freshers, long-term apprenticeship	
		Housekeeping (18 months)	<b>123,483 INR</b>
		Cooks (3 years)	<b>376,661 INR</b>
		Clerks (3 years)	<b>408,761 INR</b>

While for many enterprises benefit- cost aspects are critical and determine training decisions, there are differences between one type of enterprises, which see apprenticeships more through a production lens, while there are enterprises, which have a more long term investment perspective, when it comes to returns of investments, retention and employment opportunities. Lack of empirical evidence for the case of India makes this study and hopefully a follow up survey a particularly pertinent effort, as both strategies have different implications on type of training, retention and labour market outcomes, as could also be shown in the 5 case studies (Section V). More investment focus seems to lead to a win-win situation where enterprises can benefit and fill their skills gaps, while there are higher social returns for apprentices, which is reflected in higher retention, higher wage premium and better employability.

These are only a few case studies, based on which the ROI method has been pilot tested. The results are only indicative for employers' training costs and their rationale for apprenticeship training and therefore, they do NOT seek to be representative. This is particularly relevant for a country of the size and diversity like India, where surveys need to be of certain size so that general conclusions can be made. A follow up survey is therefore suggested based on which conclusions can be made.

With these encouraging examples, it is however central that through policies and incentives such practices can become norm and do not remain exceptions. Employer's Organizations and their affiliated member organizations, Trade unions and the Government play an important role in the promotion and social marketing of apprenticeships, and ROI can be used as a convincing argument to engage more enterprises in quality apprenticeships.



# 1. Background

## 1.1. Introduction

The global financial crisis has only partially shown signs of recovery and continues to affect particularly young labour market entrants worldwide. With the goal to avert a rise of a lost generation of young educated yet unemployed youth, the world has increasingly looked to quality apprenticeships as a sensitive labour market instrument against the global youth jobs crisis.<sup>1</sup> Apprenticeships have been revived in many countries and promoted by OECD, the G20 and the ILO in numerous conferences.<sup>2</sup> The call for action on the youth employment crisis during the International Labour Conference in June 2012 and follow up international conferences and meetings highlights the importance of apprenticeships.<sup>3</sup>

The ILO also contributed to the G-20 Task Force on Employment with a comparative study on apprenticeships and assessed the overall positive impact of well-designed apprenticeships on better school-to-work transitions and employability. It is recognized that countries with well-established apprenticeship systems tend to be better at managing school-to-work transitions for youth, and enjoy lower of youth unemployment rates to adult unemployment rate. The study also highlights aspects like duration, financing, private sector and government involvement and most importantly strong labour market institutions and social dialogue as critical institutional arrangements, which determine the success of apprenticeships.<sup>4</sup>

However, it was realized that “export” of apprenticeship systems to developing countries has, in many cases, failed and thus there are doubts about the transferability of successful apprenticeship systems persist in the international skills development community.<sup>5</sup> While there are no one shoe fits all solutions, a recent policy document, jointly developed by ILO/OECD, was provided in support to the G 20 Task Force on Employment and highlights the central features required for a quality apprenticeship system.<sup>6</sup> Two joint ILO/World Bank publications highlight the characteristics and standards of any quality apprenticeship system, based on an international comparison of apprenticeship systems, using of a model apprenticeship framework as a benchmark.<sup>7</sup> Consequently, adaptations to local contexts, taking into consideration the specific institutional features of existing apprenticeships in countries, have been and could be further explored.

Apprenticeship is the oldest form of skills transfer, particularly in SMEs, as the modality of skills development, which is closest to companies and employers. It requires that the company management and employees as a whole take on responsibility, but also opens a large creative space for the

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<sup>1</sup> See G20 Task Force on Employment position paper on Quality Apprenticeships (2013)

<sup>2</sup> See OECD (2012)

<sup>3</sup> See ILO Resolution on the youth employment crisis (2012)

<sup>4</sup> Steedman, H. (2012); Hoffmann, Ch. Axmann, M. (2013)

<sup>5</sup> A recently published study by D. Euler discusses the institutional and context specific aspects, which are to be taken into account when countries decide to adjust their existing TVET and apprenticeship systems to the dual apprenticeship system. See Euler, D. (2013).

<sup>6</sup> The policy note draws lessons not only from the traditional apprenticeship countries, such as Germany, Austria, Denmark and Switzerland, but also from France, Italy, the Netherlands, the USA, Canada, Australia, Russia and Japan and some Latin American countries, such as Brazil, Argentina, Chile and Mexico. See Steedman, H. (2012)

<sup>7</sup> Smith, E. et al (2013). The comparative study includes countries like Australia, Canada, Egypt, England, France, Germany, Indonesia, India, South Africa, Turkey and the United States.

Smith, E. et al., R. (2013) Possible futures for the Indian apprenticeship system: Options paper for India, ILO/World Bank: Geneva/Washington.



management and staff to give higher value to their jobs and to the company, which can lead to more ownership and appropriation and in turn result in higher productivity.<sup>8</sup> Similarly, it is commonly accepted that good working conditions and a safe working environment boost productivity. Empirical research, which establishes the positive influence of good working conditions and skills investments on productivity, is however still very limited, and it is indeed challenging to establish the impact of skills, working conditions and safety on productivity. It is in this context that as a part of an inter-departmental ILO project and Global Product development on ‘Working conditions, safety and health, skills and productivity in SMEs’<sup>9</sup>, the ILO seeks to develop evidence-based business cases to motivate companies and employers, especially SME’s, to also invest into apprenticeships and workforce training, which will ultimately lead to better trained employees and boost productivity, competitiveness and long-term sustainability of the enterprise.

### 1.1.1. India’s ongoing Apprenticeship System Reforms

India too has been facing the growing challenge where massive skills shortages and gaps co-exist with a fast growing number of young and, increasingly educated people aspiring for jobs for which they often do not have the required employability skills. India also struggles with a large informal economy, where formal and informal apprenticeship systems co-exist, which causes huge challenges how to bring informal apprenticeship into the mainstream training system or how to build the required bridges between formal and informal apprenticeship systems.<sup>10</sup>

#### Box 2: Limited outreach

While vocational training and apprenticeships have been identified as a major contributors to the ongoing skills development expansion efforts to skill 500 mio people by 2025, the apprenticeship system has, according to the Planning Commission Sub-Committee, reached ‘below par penetration’, particularly when assessed against the needs of the total population.

Source: Indian Planning Commission Subcommittee (2009)

Today, India is at a cross road when it comes to the Apprenticeship System. Apprenticeships are acknowledged by Industry and Government as effective instrument to improve the employability of young labour market entrants, while at the same time, skills gaps and shortages can be met, provided apprenticeships are training focused and relevant. The Indian apprenticeship system, though well established and supported by legislative and administrative arrangements that span over five decades, is by international standards underutilized, under resourced and not able to adjust to the technological and economic changes India’s economy is undergoing.<sup>11</sup> While the major growth drivers are outside manufacturing, the current Apprenticeship System still caters mainly to the needs of the manufacturing industry and only marginally to the service industry. In comparison to Germany’s 1 million apprentices (of 81 million population), the Indian apprenticeship system under the Ministry of Human Resource Development (HRD) had an annual 53,139 apprentices enrolled, while the Ministry of Labour had an annual 1,84,796 apprentices in 2011).<sup>12</sup> This only amounts to app. 0.1% of the formal labour force involved in apprenticeships compared with up to 4% to 4.5% in the case of Germany, Australia and Switzerland.<sup>13</sup> Despite the many amendments to the Act over the last 40 years, the number has only slowly increased.<sup>14</sup>

<sup>8</sup> Steedman, H. (2012)

<sup>9</sup> [http://www.ilo.org/empent/Projects/score/WCMS\\_194651/lang--en/index.htm](http://www.ilo.org/empent/Projects/score/WCMS_194651/lang--en/index.htm)

<sup>10</sup> Hoffmann Ch., Axmann M. (2013)

<sup>11</sup> Smith, E. et al., R. (2013)

<sup>12</sup> GOI (2013)

<sup>13</sup> Steedman, H. (2012)

<sup>14</sup> Indian Planning Commission (2009)

Similar to other countries, the apprenticeship system is more utilised (70%) by medium (100-499 employees) and large enterprises (>500 employees), while formal apprenticeships in SMEs (<100 employees) are abysmally low.<sup>15</sup> Apprenticeships in registered SMEs are often informal and on-the-job, as SMEs often lack the infrastructure and human resources that are required to comply to the Government's Regulations and obligatory ratio intake per person trained, which are some of the main reasons for non-hiring besides the overall perceived costs of training apprentices.

Besides outreach, there are qualitative shortcomings, which need to be addressed so that the goal of skilling young people, acquiring workplace related competencies and employability is enhanced. According to a recent ILO/World Bank publication, there seems to be very little involvement of Employers' organizations and Trade unions in shaping and carrying the apprenticeship system forward.<sup>16</sup> Overall, enterprises appreciate the apprenticeship system and would like to engage more apprentices than prescribed, but seem to face difficulties in getting required number of apprentices with the right academic, communication and soft skills. A recent survey by IAMR indicates that enterprises consider apprenticeships as useful and relevant;<sup>17</sup> however apprenticeships seem not to increase the job opportunities and employability of trained apprentices, as only a fraction of certified apprentices are finally retained by the enterprise as regular employees or find a job elsewhere.<sup>18</sup> The study further establishes empirically that most of the enterprises tend to utilise apprentices for their productive core business, which could raise the question whether they do not provide enough training so that apprentices are retained.<sup>19</sup> In fact, if they are retained, most of the apprentices are hired as contract employees before they move on. On the other hand, industries and enterprises complain about skills shortages and high attrition rates in the lower and middle levels, which could be filled by skilled and well-trained and most importantly, well trained and retained apprentices.

### Box 3: Impact on employment

While appreciated by enterprises, apprenticeships do not seem to always lead to the expected improved employability and higher wages of apprentices.

Source: IAMR (2013)

From the apprentices' side, both the ILO/World Bank study and the IAMR survey indicate that young people do not see apprenticeships as a very attractive training option.<sup>20</sup> This reflects in the relatively low utilisation rate of apprenticeship opportunities (64%, as per 2011, GOI, 2012). Reasons include lack of job guarantee after completion of training, limited career pathway options and low stipend and lack of training facilities close by. Other reasons are regional mismatches, where apprentices are seeking training opportunities and there aren't any and vice versa. The enterprises also state that many candidates lack of awareness about career opportunities within enterprises. As the National Apprenticeship Certificate is not an essential qualification for recruitment as skilled workers in most private enterprise (i.e. it was only a requirement in state or central public enterprise), the apprenticeship does not seem to be an appealing proposition among the potential trainees.<sup>21</sup> Usually,

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<sup>15</sup> IAMR survey (2013)

<sup>16</sup> Smith, E. et al., R. (2013): Possible futures for the Indian apprenticeship system: Options paper for India, ILO/World Bank: Geneva/Washington.

<sup>17</sup> IAMR (2013), Chapter 5

<sup>18</sup> These figures seem abysmally small. In the case of enterprises retaining apprentices the number amounts to 4675. Similarly, 13,170 apprentices placed might be an underestimate as these figures relate to registered numbers of apprentices who have been placed by employment services. Since the DGTE does not undertake systematic tracking surveys, the figures of certified apprentices could be higher.

<sup>19</sup> Some interviews during this study re-affirm these findings, that many enterprises seem to hire particularly short term apprentices with ITI certificate to support their production.

<sup>20</sup> Smith, E. et al. (2013)

<sup>21</sup> See IAMR (2013), Chapter 6.

young people prefer public sector enterprises and large enterprises to SMEs, which limits the numbers of apprentices applying for training in SMEs.

After various reviews and technical meetings, the Ministry of Labour & Employment (MOLE), in consultation with key stakeholders put forward a number of amendments to the Apprentices Act (1961) and Apprenticeship Rules (1992) to reshape the apprenticeship system in India.<sup>22</sup> These include:

1. an increased role for industry in promoting, coordination and monitoring apprenticeships,
2. the shift towards identification of apprenticeship places to be determined by employer demand within broader defined ratios of apprentices to workers;
3. the increased involvement of micro, small, medium and larger sized enterprises from existing and new industry and more importantly service sectors, including some categories of enterprises previously excluded under the Act;
4. an integrated program of on-and-off the job training involving either public or private training institutions;
5. a revised code of practice/ agreement/guidelines for employers and apprentices to ensure comprehensive protection of apprentices;
6. a significantly increased stipend for apprentices; and
7. enhanced and more adequately funded administration of the scheme.
8. finally, there is a need to address data shortages and documentation challenges and to support Governments and Social Partners in developing and strengthening the apprenticeship institutions to monitor the effectiveness of apprentices and labour market outcomes of the scheme.

#### Box 4: The Learner's Take

Young people do not see apprenticeships as a very attractive training option. Lack of job guarantee after completion of training, limited career pathway options and low stipend and lack of training facilities close by their homes are mentioned as main reasons. They also prefer to apply for apprenticeships in larger public enterprises.

Enterprises also feel that students and parents lack awareness about apprenticeships.

Source: IAMR (2013).

The increased interest in India to reform and expand the existing apprenticeship system is an important first step to overcome the existing skills shortages and ensure productivity improvements of the overall economy and particularly in SMEs, besides increasing employment opportunities of young labour market entrants. International evidence suggests that youth unemployment is more likely to exceed adult unemployment rates where formal apprenticeship systems are weak, which highlights the need for quality apprenticeships and strong quality assurance mechanisms to be successful.<sup>23</sup> International experience also shows that, once legal safeguards to protect apprentices are in place, employer engagement and constructive dialogue with employee representatives is the most fundamental condition for a successful apprenticeship system.<sup>24</sup>

<sup>22</sup> For more details see Planning Commission 2009; IAMR (2013); the India option paper prepared by Smith et al. (2013). The suggested changes in the Apprenticeship legislation are currently reviewed and it is expected that they will be made after 2015 at the earliest.

<sup>23</sup> Steedman, H. (2012); Hoffmann, Ch. and Axmann, M. (2013)

<sup>24</sup> One such example of successful employer engagement is Switzerland, where employer's associations are driving the dialogue. See Steedmann, H. (2013) and National Education Practice Leaders (2012).

### 1.1.2. Development of ROI as Initial Step to Increase Outreach and Attractiveness of Apprenticeships

Strengthening and expanding apprenticeships, with the strong support from the social partners and relevant stakeholders provides therefore an important window for collaboration between the ILO and its constituents. The role of Employers' organizations and Trade unions in shaping and expanding the apprenticeship system will be significant.

As part of ongoing technical inputs to the Government of India, Employer's organisations and Trade unions, this document provides some insights on how other countries have over the years made significant inroads into the apprenticeship debate by de-mystifying the cost aspects of apprenticeships and highlighting the overall benefits an apprentice generates to enterprises even during the apprenticeship period.

Researchers and policy makers have come together to develop tools (Benefit-Cost Analyses and Returns from Investments, ROI) to establish empirical evidence that apprenticeships make business sense, actually create no additional costs but in many instances, bring additional value to the company, monetary and non-monetary, often even during the apprenticeship period itself or soon after if they are retained. The ROI approach has been increasingly used as a social marketing tool by Governments, Trade unions and employers, and has contributed in many places to a revived debate, increased enrolments and a higher status of apprenticeships.

As will be shown in the next section, while for most enterprises benefit- cost aspects are one critical aspect which determines training decisions, there are differences between one type of enterprises, which see apprenticeships more through a production lens, while there are enterprises, which have a more long term investment perspective, when it comes to returns of investments, retention and employment opportunities. As will be shown, both directions have different implications on type of training, retention and labour market outcomes. ROI, consequently can be used by policy makers and social partners to shape active labour market policy interventions, which lead to a win-win situation for all stakeholders involved: significant enrolments and expansion of apprenticeships in a relatively short period of time, but also higher employability of trained youth and increased wages.

## 1.2. Scope of the Study

After an initial discussion about the ongoing debate on ROI in apprenticeships, how countries in recent times have utilized this approach at enterprise levels and across sectors in larger surveys to increase awareness and rise the profile of apprenticeships nationally, the study introduces the rationale, why in India too, ROI in apprenticeship can play a significant role in making apprenticeships more appealing and attractive to companies. This document intends to present a methodology that can serve employer's associations, Governments and Trade unions to start engaging with enterprises who hire and train to assess the ROI during and after training, while in the case of enterprises who do not train, they can promote ROI to look into the potential benefits if they engage in structured apprenticeships. The methodology further provides the opportunities for enterprises to optimize their training/apprenticeships decisions, while looking at various aspects besides monetary benefit-costs. This could include making decisions to invest mid- or long term into the skills and competencies of apprentices and their career pathways and consequently structure apprenticeships and workplace learning in a different way as it is done in some cases presented later. Further, it is also important to complement ROI calculations with qualitative assessments, which qualify the training

process and outcomes, like career opportunities and occupational status to avoid simplistic assessments based on monetary benefit cost.

Given the significant lack of data on effectiveness of apprenticeships and their outcomes in India, establishing a tool to assess monetary and non-monetary benefits of apprenticeships for both, enterprises and apprentices is therefore a first step that can complement ongoing research efforts and studies to strengthen the existing debate about apprenticeships in India.<sup>25</sup> Overall, the aims and objectives of this study are:

1. to develop a method which can establish a business case for apprenticeships under current Indian circumstances, with a particular focus on small medium enterprises in the Indian context.
2. to present a methodology that can be used by Employers' organizations, Governments and Trade unions to present ROI of apprenticeships of enterprises. This covers both financial and 'in kind' investments made by employers and how these costs are recovered and benefit in monetary and non-monetary ways over time. Two ways are offered: the more detailed case study approach and a methodology for more standardised surveys.
3. to present benefits of apprenticeships to apprentices, how, and under which circumstances they can benefit from apprenticeships when it comes to career opportunities within the firm or wage premiums.

The main elements of this approach, which are discussed based on 5 case studies, are listed below:

1. undertake semi-structured interviews and case studies across different industries to explore motivation of hiring apprentices and levels and types of investment in apprenticeships.
2. explore how employers cope with skills gaps and their HR planning.
3. assess net benefits and returns of apprenticeships offered by the firm
4. assess wage premium and career pathways of apprentices after finishing their training period, dependent on type of apprenticeship and/or in comparison to their control group, who did not do apprenticeships.

### 1.3. Structure of Report

The report is structured as follows. Chapter 2 briefly discusses international practices and research to ROI on apprenticeships and presents selected findings. Chapters 3 and 4 outline the selected method and the particular frameworks within which the scope of the study for India is defined. Chapter 5 discusses the employer case studies including an estimate of the total net benefit to the employer of an apprentice completing an apprenticeship in relation to the costs. To assess whether the firm has an investment or production focus, it will be important to determine, when recovery of these costs are made: during or after the training. All the case studies discuss existing industry specific aspects and related skills gaps and the coping mechanisms of enterprises to ensure adequate human resources. They also depict in detail that different apprenticeship types used lead to different ROIs and employment outcomes with different career perspectives and wage premiums for apprentices within the enterprise. Chapter 6 takes the reader through a step-wise process, how enterprises, Employers' organizations or the Governments can initiate simple ROIs at enterprise levels and how the results can be used to make informed decisions on investments into apprenticeships. Chapter 7 provides an overall conclusion. All the questionnaires and suggested formats are in the annexure.

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<sup>25</sup> See IAMR (2013), Planning Commission sub-committee report (2009) and work undertaken on reforming the Apprenticeships Act. Further the India option paper prepared by Smith, E. et al. (2013).

## 2. Current International Evidence on the Returns from Investments from Apprenticeships

### 2.1. Shifting from Cost Analysis to Benefit based Research

Considerable research has been undertaken to assess the social and economic benefits of apprenticeships during the last 20 years. In many countries, the increased pressure on fiscal spending in education led to more intensified efforts to measure and assess effectiveness of technical and vocational education and apprenticeships. Further, there have been a number of surveys, which indicate that even today, employers perceive costs as one of the main barriers for apprenticeships.<sup>26</sup> Consequently, a number of studies were commissioned with the attempt to critically assess the effective costs and benefits of apprenticeships and to increase popularity of apprenticeships within society and the business environment by establishing a business case for the same. Such efforts were particularly made in countries, which have a strong tradition in providing dual-apprenticeships (e.g. Germany, Switzerland, Austria), but also increasingly in countries where apprenticeships have been heavily promoted and expanded over the last years (e.g. Canada, UK, Australia and USA).

The concept of cost-benefit-surveys of apprenticeship training has a long tradition in Germany and goes back to the 70's, when the "Expert Commission on Costs and Financing of Vocational Education and Training" which is also known as the "Edding-Commission" developed the overall conceptual framework.<sup>27</sup> Earlier research efforts in other countries focussed more on investments costs and hiring decisions in firms but did not focus much on net short term (i.e., the value of an apprentice's productive work) and long term benefits (lower costs for the future recruitment of skilled workers) generated by apprentices during and after the training.<sup>28</sup> Over the years however, most countries opted for a more standardised approach and started conducting enterprise surveys on ROI, which emphasise the benefit aspect of apprenticeships. This approach led to the much-required convincing empirical evidence for employers and enterprises to hire apprentices.<sup>29</sup>

Over the years, the benefit-cost model or ROI has become an internationally used concept to assess the impact of apprenticeships. It is based on a standard benefit-cost analysis for a single firm that hires apprentices. The benefit-cost model attempts to accurately capture the variety of monetary costs and benefits associated with apprenticeship training in specific sectors and industries. The methodology is used in Germany, Switzerland, New Zealand, Australia, and the United States to name a few. However, according to a recent comparative study for European countries, only very few countries

#### Box 7: The Benefit Cost Model

The benefit-cost model is an internationally proven concept. It tries to accurately capture monetary costs and benefits associated with apprenticeship training in specific sectors and industries.

However, usually, surveys also assess additional qualitative short and mid-term benefits, like retention, contribution of apprenticeships to overall work culture, to better understand the motivations of enterprises why they hire or not hire.

Source: Dionisius, A. et al. (2008)

<sup>26</sup> CFA (2009); Wolter et al. (2006), Dionisius et al. (2008)

<sup>27</sup> See Dionisius A. et al (2008)

<sup>28</sup> Muehleman, S. et al. (2013)

<sup>29</sup> E.g. for UK: McIntosh, S. et al. (2011); for Canada: CFA (2009); Germany: Dionisius, A. et al. (2008); Switzerland: Wolter, S. et al. (2006).

conduct regular and more importantly large scale representative studies to assess ROI.<sup>30</sup>

Net benefits and costs are usually calculated per apprentice, per year. There are only slight differences in approaches how costs and benefits are calculated between the countries.<sup>31</sup> The approach discussed here follows the Canadian approach, however in a simplified version.<sup>32</sup> The cost and benefit components used for the Indian case are detailed out in section 3.3. Usually, such surveys also assess additional qualitative benefits, like retention, contribution of apprenticeships to overall work culture, to better understand the motivations of enterprises why they hire or not hire.

Today, there seems to be an overall consensus on the fact that apprenticeships bring value to the companies across different trades, sectors and regions. This holds particular importance, as even today, the perceived cost of apprenticeship is in many countries still considered as one of the major barriers to apprenticeship training for enterprises, even though, the existing research for the last decade proves the contrary.<sup>33</sup>

#### Box 8: Recovery of Investments

Larger firms tend to have an *investment focus*, have higher training costs and lower net benefits. They have much higher retention rates after the apprenticeship and manage to save recruitment costs of external employees and fill some of the skills gaps through well trained and retain

SMEs seem to aim at quick recovery of expenditure and have a stronger *production focus*.

Source: Wolter, S. et al. (2006)

## 2.2. There are regulatory and institutional differences, which influence enterprises whether and how they train apprentices

Most studies carried out emphasize that there are significant differences in cost, benefits as well as when enterprises start recovering their expenditure.<sup>34</sup> Critical differentiators are size, industry as well as region. For instance there are clear cost differences for skilled and experienced employees dependent on location, sector or size of firm that influence the overall investment costs into apprentices. SMEs in general tend to train less, and there is evidence from a number of countries that the requirements attached to formal apprenticeships can present serious obstacles to SME participation more especially to the participation of micro-enterprises.<sup>35</sup>

SMEs seem to also utilize apprentices more readily in actual work on the job, and therefore have a stronger focus on production than larger enterprises, which have higher training costs and smaller net benefits initially from their investments.<sup>36</sup>

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<sup>30</sup> Muehlemenn, S. et al (2013), in their recent comparative study on Cost-Benefits analyses in Apprenticeships in 4 European countries (Switzerland, UK, Germany and Austria), discuss the various approaches, methodologies and the influencing factors which lead to higher and lower net benefits and decisions of enterprises to hire.

<sup>31</sup> Ibid.

<sup>32</sup> See for details CFA (2009).

<sup>33</sup> See for details CFA (2009); Wolter, S. et al. (2006); McIntosh, S. et al. (2011)

<sup>34</sup> CFA (2009); Wolter, S. et al. (2006);

<sup>35</sup> In a detailed discussion about the reasons why SMEs provide less apprenticeships Steedman, H. (forthcoming) points out that awareness, and lack of information are important aspects why SMEs do not hire apprentices. Further, the compliance requirements are burdensome and firms often believe that they are too specialised to provide the broad training required for an apprenticeship.

<sup>36</sup> Wenzelmann, F. et al. (2007) for Germany, Wolter, S. et al (2003) for Switzerland, CFA (2009) and CFA (2010) for Canada. See also Muehlemann, S. et al. (2013).

The reasons often mentioned are related to the investment focus many of the larger enterprises have when they train. Apprentices usually spend more time practicing in dedicated training locations instead of being productively utilized on-the-job. Similarly, the costs for more modern and technology intensive occupations are usually higher and training requirements usually longer.

Further, there are also country specific differences, as indicated in a comparative analysis between Switzerland and Germany, both countries, which have had traditionally very strong and successful apprenticeship systems. Recent analyzes indicates that the net costs of training apprentices are substantial in Germany, whereas apprenticeship training is on average profitable even during the training period for Swiss firms, despite the institutional and structural similarities of the dual apprenticeship system. Interestingly, Switzerland showed that the training behavior of a firm is influenced significantly by the net costs of an apprenticeship program (Wolter et al., 2006; Muehleemann et al., 2007). Swiss enterprises, who usually pay higher salaries to their employees and apprentices than German employers, tend to make more productive use of apprentices, which results in significantly higher benefits over the training period.<sup>37</sup>

**Box 10: Retention increases productivity**

Some international studies indicate based on their experiences, employers feel that "homegrown" experienced workers are on average, 29.0% more productive than an externally recruited skilled employee.

Source: CFA (2009)

These findings refer to significant differences in labour market institutions (e.g. Trade Union and Employers' organization involvement) and regulations, which influence enterprises to train in a certain way. For instance, German apprentices are significantly less often productively active on the job, but have more classroom and practical training than an average Swiss apprentice.<sup>38</sup> Furthermore, the more pronounced wage differential between apprentices and unskilled or skilled labor in Switzerland, known for its high salaries for skilled labour, seems an incentive for Swiss firms to apply a production-oriented instead of an investment-oriented training firm strategy.<sup>39</sup>

**Box 9: Role of labour market institutions and social partners**

Labour market institutions and regulations, and the role of social partners in designing and implementing apprenticeships can determine whether apprenticeships are more focused on quick recovery of training investments (production focus) or on slower recovery, where the focus lies on training and developing a highly skilled workforce, which is able to fill the skills gaps in enterprises (investment focus).

All said however, it needs to be emphasized that even though there is a strong production focus, the Swiss model is considered one of the very successful forms of apprenticeships, where apprentices are well trained under strong technical supervision and classroom training, which results in highly transferable skills and career pathways, which further accelerate their careers and wage premiums.<sup>40</sup>

It is to be expected that such differences in focus of apprenticeship training also have an impact on retention. While in 2007 Germany, more than 57% of the predominantly larger sized enterprises have retained apprentices, it is only 36% in the case of Switzerland.<sup>41</sup> However, it should not be ignored here, that while retention rates might be lower in Switzerland, apprentices have the transferable skills to find very good employment opportunities in the labour market in other enterprises. Therefore, the

<sup>37</sup> According to Muehleman, S. et al. (2007), in the case of German firms apprentices spend 53% in the workplace, while in Swiss firms, apprentices are for 83% of their training period in the workplace.

<sup>38</sup> Ibid. and Wolter. S. et al. (2006)

<sup>39</sup> Ibid.

<sup>40</sup> OECD (2009).

<sup>41</sup> Muehleemann, S. (2007), Wenzelmann, F. et al. (2007)



overall industry and sector profits from well trained apprentices. Such findings of course bring the main questions for social partners and policy makers into the centre of the debate, namely, how quickly apprentices should be integrated in the productive areas of the enterprise to gain the required work experience or whether such utilization has a more short sighted benefit to the enterprise, which might impact competencies and lower employment opportunities in the mid-or long run.

Similarly, in the case of the UK, a study conducted by the University of Warwick, showed that benefits also include retention within the company, understanding of company values and progression to become managers and supervisors. The study further found that 77% of employers believe apprenticeships make them more competitive, increase the firm's overall productivity and make it possible to quickly fill vacancies where required and stabilises the workforce. 59% report that training apprentices is more cost-effective than hiring skilled staff, believing that apprenticeships lead to lower overall training costs. 53% also feel that they reduce recruitment costs.<sup>42</sup> These findings are similar in other countries.<sup>43</sup>

### 2.3. Returns from investments also have an impact on work culture, employability and career opportunities

As mentioned earlier, there are also more qualitative returns from investments, which contribute as benefits to the enterprise. Survey findings can clearly establish that hiring apprentices positively contributes to the work culture and retention apprentices in the enterprises. In countries like UK, Europe, Canada, Germany and Switzerland there is evidence that individuals who acquire a qualification through an apprenticeship have better labour market prospects, in terms of their lifelong earnings and their long-term employability.<sup>44</sup> In the case of the UK, recent work has suggested that the rate of return to an apprenticeship is approximately 35-39%, depending on the level of the apprenticeship and industry, and taking account of both the gain in earnings and improved employability associated with this qualification (McIntosh, 2007). Hence, it is unarguably the case that in the UK, apprenticeships provide valuable training for workers; and those who acquire an apprenticeship become more productive in the work place than those who do not have this qualification. This is consistent with international evidence on the high economic value of these qualifications for individuals.<sup>45</sup> While this is particularly the case for male apprentices, who benefit longer from higher returns, women seem to enjoy lower returns for a shorter period of time, as studies for the US and Australia suggest.<sup>46</sup> This might also have to do with the choice women make when enrolling into apprenticeships, which have remained focused primarily on typical women's occupations, including business and service sector occupations despite campaigns to attract them to predominantly male occupations. Many of these occupations provide often less pay and career opportunities. Finally, other social benefits include that

#### **Box 11: Apprenticeships also create benefit to apprentices**

Countries like the UK, USA, Germany and Canada could establish empirical evidence for apprentices to earn significantly higher wages; further, in some cases, apprentices seem to experience faster wage increases in comparison to their counterparts without apprenticeships, particularly in apprenticeships with longer duration and with higher qualification levels.

Source: Steedman, H. (2012).

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<sup>42</sup> Hogarth, T., et al. (2012)

<sup>43</sup> CFA (2009); CFA (2010); Wolter, S. et al. (2006); Muehleemann, S. et al. (2007)

<sup>44</sup> Ibid.

<sup>45</sup> McIntosh, S. (2007)

<sup>46</sup> Steedman, H. (2012)

costs of potential unemployment and long-term unemployment can be averted, which has an overall impact on the person's future employability as well as on the overall expenses borne by the society.<sup>47</sup>

Research to make a business case on apprenticeships has so far been limited to a few industrialised countries with well-integrated and strong quality apprenticeship systems. While India has a comprehensive apprenticeship system in place, albeit much less frequently used, there is rarely a systematic monitoring and data collection mechanism in place, which could empirically track or establish any impact of apprenticeships on a) cost-benefit or b) enterprise productivity and competitiveness or b) on employability and wages of apprentices. In fact, while there are data on apprenticeship enrolments and completions, labour market outcomes (e.g. of placements through tracer studies) are not systematically collected by the government. However, steps are currently taken, as part of the on-going efforts to revive and reform apprenticeships systems, to improve this situation.<sup>48</sup>

### 3. The ROI Approach in the Context of India

ROI studies have many shapes, sizes, and forms and can be used for several purposes, which could

1. demonstrate that apprenticeships and training are an investment
2. maximize returns from apprenticeships and training
3. measure the effectiveness of training
4. demonstrate accountability for expenditures and policies
5. provide evidence-based guidance to enterprises how to optimize training form and duration to achieve optimal training outcomes
6. Provide evidence-based guidance to Trade unions and government on how to find the optimal balance between optimizing training and employment outcomes for apprentices

All have one thing in common—the relationship between a set of benefits and a set of costs in an enterprise. As mentioned earlier, the current objective is to develop a business case for apprenticeships in India, where apprenticeships can not only add a monetary value to enterprises, but also, provided that apprentices are well trained and retained, add significant value by filling skills gaps within the enterprise.

The simple ROI for apprenticeships, which discusses benefit-cost related aspects, will also be complemented with questions on retention and qualitative aspects associated with employability. Consequently, ROI is integrated into a broader conceptual framework that provides constituents the opportunities to optimize between training modality duration and returns, and to ensure that it is a win-win for both, the employer and the apprentice.

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<sup>47</sup> Ibid.

<sup>48</sup> See IAMR (2013, forthcoming), enterprise survey and publication on India's Training system.

### 3.1. Conceptual Framework: ROI in India

Apprenticeships under the Trade Apprenticeship Training Scheme (ATS) of the Ministry of Labour and Employment have two forms, a) long-term trade Apprenticeships, which requires that students have a 8-10<sup>th</sup> Standard certificate, and b) a one year workplace focused apprenticeship after a 2-3 year vocational training resulting in an ITI certificate (Graduate, Technician and Technician Vocational Apprenticeships Training Scheme). Three more other types of apprenticeships (Graduate, Technician and Technician/Vocational Apprentices) offered under the Ministry of Human Development, which however, are not discussed here. According to the GOI (2011), the one-year apprenticeship after ITI is the preferred training form, where more than 78% of apprentices were hired in 2011. This observation was confirmed during the recent discussions with enterprises and several State Apprentice Advisors.

Government and the recently published IAMR survey and interviews with Government officials and enterprises indicate that apprentices who have an ITI and 1 year apprenticeship are not very often considered as potential staff to be retained.<sup>49</sup> It seems that companies seem to have a production focus when hiring an apprentice and might less focus on training and up skilling and usually recover the training expenses within a very short time. Such a decision might be further motivated by the obligatory ratio, based on which enterprises have to comply by the Apprentices Act, to hire a fixed number of apprentices, even if an enterprise might not be able to expand their workforce accordingly. The same survey found that most employers (80%) select staff based on whether he/she has an ITI certificate, while only 9% of enterprises appreciate an apprentice certificate.<sup>50</sup> The question therefore arises whether and under which conditions the 1-year apprenticeship after ITI training really increases employability and the wage premium of apprentices.

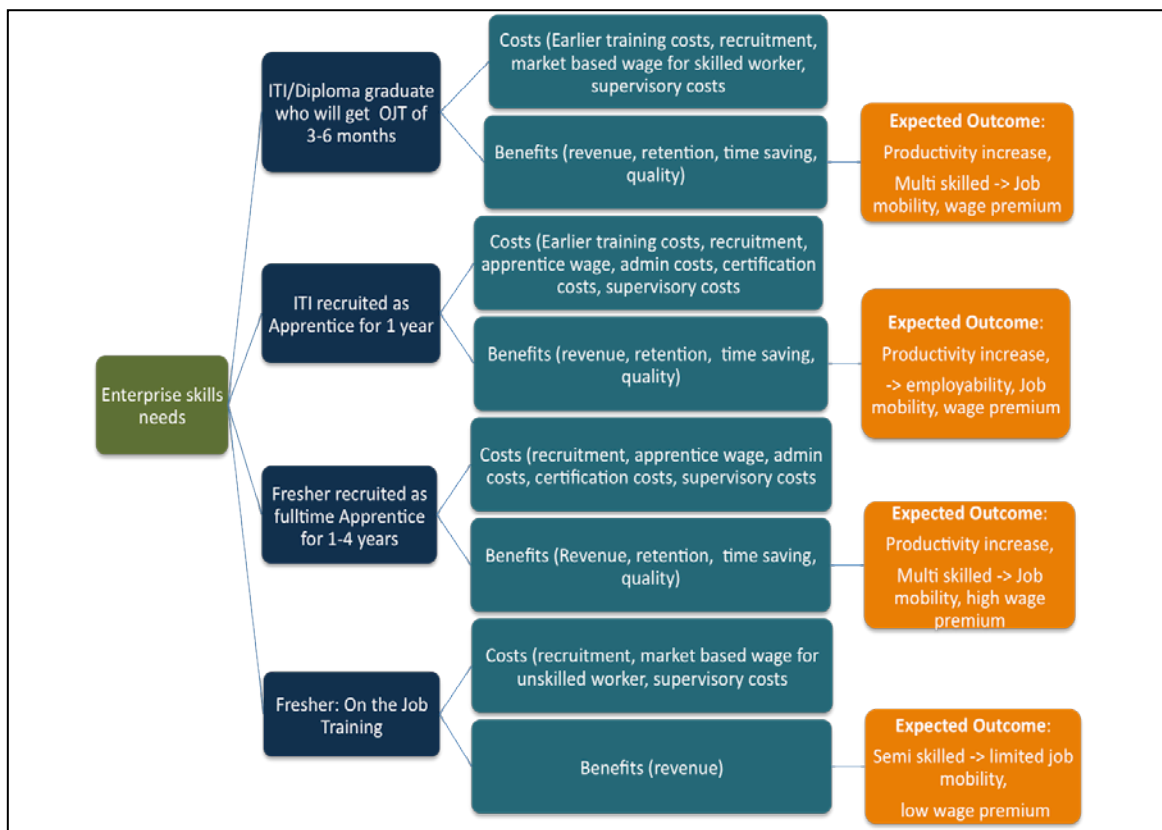
On the other hand, there are companies, which increasingly opt for in-house informal traineeships or long term structured apprenticeships, either with ATS certification or seek other ways to certify their apprentices. These apprenticeships seem to be distinct from the apprenticeship provided to ITI certificate holders. In anticipation of significant skills shortages that arise with fast expansion of enterprises, they look at freshers (10<sup>th</sup> pass, ITI pass or Diploma holders) as human resources to be trained, retained and groomed for skilled occupations and middle levels leadership. In this case, long-term apprentices are usually selected through assessments and interviews and form the group of the best of freshers or ITI certificate holders who are then trained in-house through structured apprenticeships. Consequently, as will be shown in some cases (section V), enterprises apply an investment focus and provide different types of training during this formative period, but also ensure different employment perspectives for the various candidates within the firm. Enterprises seem to optimize their decisions based on benefit-costs and other factors and choose multiple strategies to hire and groom apprentices.

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<sup>49</sup> IAMR (2013)

<sup>50</sup> *Ibid.*

**Graph 1: Decision tree for enterprise to train and retain apprentices**



Source: Author

As investments, costs and benefits differ according to the decisions enterprises make, learning outcomes are expected to be different. As shown in graph 1, apprentices who train in enterprises with an investment focus for longer duration are expected to have broader skill sets, higher wage premium and better career mobility than apprentices who train in production oriented enterprises. The nature of business, positioning, employment requirements and occupational profiles and the coping mechanism of an enterprises to fill employment and skills gaps will surely influence the enterprise’ decision in how to train and whom to train.

Till date, with the exception of some case studies and small surveys, unfortunately, there are no empirical studies available in India, which could provide an insight into the strategies enterprises make, which could support this argument. However some of the case studies presented here provide some interesting highlights, which are worth mentioning and provide some insights on enterprise’s decisions how they train-retain and promote apprentices.

### 3.2. ROI as an economically measurable value (tangible outcomes)

ROI can be measured and converted to dollar values. ROI analysis seeks to answer the question: “For each dollar spent on apprenticeships, how many dollars are returned to the investor—the employer, the trainee, the government program, the union, or whoever paid for apprenticeships? Calculated as a percentage, ROI enables you to identify the return on apprenticeship investment and provide concrete

answers to the question, “why should I hire apprentices”?<sup>51</sup>

ROI usually takes a balance-sheet approach,<sup>52</sup> chalking up benefits and costs that follow a particular protocol, as shown below. They usually include economically measurable quantitative costs/benefits, but are often supported by non-monetary (qualitative) assessments.

As indicated, once all measurable and non-measurable benefits and costs are counted and accounted for, ROI is expressed as a numerical value that indicates the worthiness of an enterprise to train apprentices. At the same time, assessing ROI is difficult because it is contextual and subjective. Ideally, an enterprise should undertake both the private and social costs and benefits into account, while calculating an ROI. However, in situations where data collection is poor, it might be difficult. So, it is suggested that we start with measuring the private cost and benefits.

### 3.3. Measuring the Costs and the Benefits

At its core, the study attempts to provide an estimate of employers’ current levels of investment in apprenticeships and benefits/returns from investments. Calculating ROI requires that business results data be converted to monetary benefits. It is important to be able to allocate financial value to results such as

1. Improved productivity of apprentices over time
2. Higher Retention
3. Time saved
4. Output increased

In the context of this particular study however, we focus on a simple matrix of cost and benefits, which is based on:

#### Box 12: The different types of Benefits and Costs

Benefits and costs themselves are usually divided into private (internal to the enterprise) and social (external to the enterprise) categories. This distinction is important, as enterprises optimize differently when they hire apprentices than governments and apprentices: they are looking at aspects related to productive contribution an apprentice can make in an enterprise, while governments obviously seek to support apprenticeship systems to optimize the employability of apprentices and their retention and career opportunities in the workplace.

**Table 2: Flow to assess Cost–Benefits of apprenticeship training**

Step: Training Costs of an Apprentice
Step: Benefits
Productivity increase of benefit generated by apprentice against experienced worker/employee over training period
Recruitment fees and induction costs which are saved if an apprentice is retained.
Step: Establishing measurable Returns from Investments (ROI)
Step: The social Costs and Benefits are however added to the discussion of each case.

#### Step 1: Identifying the Training Costs\* of an Apprentice:

Assess the cost of supervision from training/first line managers, and supervisors (measured by how much time they spend training multiplied by wage);

Assess the other costs of training (such as training materials, recruitment costs)

<sup>51</sup> FutureEd Consulting Education Futurists Inc. (2002)

<sup>52</sup> For excellent country specific research studies see Canada, UK, Switzerland, Germany, Australia in Bibliography.

Add annual costs to assess overall costs for training during entire training period.

\*Note: the costs need to be calculated by apprentice, and therefore, total costs need to be divided by number of apprentices undergoing the training.

**Table 3: Calculating the Costs**

	Year 1	Year 2	.....	TOTAL
<b>Supervision costs (per apprentice or trainee)</b>				
% of Team leaders (Training Manager's) in assembly and super visors in machine time spent training	%	%		
% of Line Manager's time spent training				
% of Supervisor's time spent training				
Training Manager's Salary (CTC INR p.a.)				
Line Manager's Salary (CTC INR p.a.)				
Supervisor's Salary (CTC INR p.a.)				
<b>Additional training costs per apprentice or trainee (INR)</b>				
Costs of recruiting the apprentice or trainee				
Course fees, material costs				
Supervision/Instructor costs				
Costs for machines not fully utilized: earmarked benches				
Apprentice or trainee salaries				
Employer's additional contributions for Apprentices (uniform/bonus etc.)				
Administrative costs				
<b>TOTAL COSTS for training per apprentice</b>				

**Step 2: Assessing quantitative benefits of Apprenticeships:**

The productive contribution of the apprentice is calculated over the entire training period. This is measured by the proportion of the fully experienced worker's job the trainee can contribute in each year of the Apprenticeship. Usually, people use the charge out rate of a skilled and experienced employee as a reference (to calculate charge out rate per hour see annexure). Based on data on the total annual chargeable hours of work, an estimate was made of the average revenue associated with each apprentice.

It should be noted however, that, while most employers had no difficulties assessing the effective costs of an apprentice or staff, many employers could not directly assess a "charge out" or mark up rate and, hence, develop an estimate of the revenue that would be derived from the employee or for the apprentice.

It is assumed that apprentices contribute only a small but increasing percentage of an experienced worker during this period, as 1 day per week is usually spent in the classroom and in many instances, apprentices are also practicing in dedicated places outside the shop floor.

Assess Charge out Rate per hour for experienced employee (labour charge out rate + overhead charges/hr + margin)

**Table 4: Example on calculating charge out rate**

	Year 1	Year 2...	TOTAL
<b>Assumptions</b>			
<b>TOTAL Annual Hrs (5 or 6 day working week, 8 or 9 hrs)</b>			
No of casual leave x daily hrs			
No of Sick leave x daily hrs			
No of public holidays x daily hrs			
<b>No of working days/annum</b>			
No of productive hours per annum (app. 80%)			
Cost to company for experienced worker/annum, INR			
<b>1 Labour Charge out rate</b>			
<b>2 Charge-out rate to cover overheads (administrative and business expenses)</b>			
<b>Final Charge out rate (charged to the client)</b>			

Assess productivity of Apprentice during the training period:

Multiply annual Charge Out Rate with productivity of Apprentice

**Table 5: Example to assess benefit generated by apprentices during training period.**

	Y1	Y2	TOTAL
<b>Productive hours/ annum</b>	1,584	1,584	3,168
<b>Charge Out Rate</b>	365	365	
<b>Productivity Apprentice</b>	20%	50%	
<b>TOTAL Benefit</b>	<b>115,632</b>	<b>289,080</b>	<b>404,712</b>

**Step 3: Establishing measurable Returns from Investments (ROI):**

ROI can be calculated in two ways, by a benefit to cost ratio or as a net benefit received during the training period.

**ROI Ratio = Net Benefits/Net Costs**

Net benefits are divided by the costs (B/C) with a number greater than one implies the

**Box 13: Benefit/Cost Ratio Example:**

The net benefit is INR 500,000 within 24 months, and the cost of training is INR 250,000 for the same period.

The Ratio will be INR 500,000/INR 250,000= 2:1

For each INR invested, 2 INR are generated.

positive net benefits to the company after the costs are covered during the training period.

**ROI= Net Benefits- Costs**

The benefits of Apprenticeships are subtracted from the costs to give an indication of the net benefit or cost to the employer. Sometimes, this figure is weighted by the level of dropout in recognition that the employer has to train, in some instances, more than one trainee to end up with one successful completion.

Throughout the study reference is made to the wage and production output of a fully experienced worker. This was the wage the employer provided as being typical of the wage the apprentice would be likely to earn when fully trained. In sectors such as engineering this rate might take a few years to achieve since wage levels in these organizations often reflected relative competence and experience. In other sectors such as retailing and hospitality apprentices or trainees could expect to be paid the fully experienced worker’s wage immediately upon successful completion of their training.<sup>53</sup>

**Table 6: Overall ROI table**

Assumptions	Assumed Investment Period (with partial recovery in certain cases)			Recovery Period at work	TOTAL
	Y1	Y2	Y3	Y4	
No of people drop out					
Batch size					
CTC for apprentice					
CTC for Experienced worker					
No of hrs worked by skilled/experienced worker					
Charge out rate of experienced worker					
Productivity of Apprentice					
<b>COSTS</b>					
Supervisory-Training costs					
Other Training Costs					
<b>TOTAL Costs</b>					
<b>BENEFIT</b>					
% Of apprentice to contribution to benefit					
Costs saved for recruitment through retention					
<b>TOTAL Benefits</b>					
<b>TOTAL Benefits incl. drop out rate (% costs per trainee)</b>					
<b>Benefit-Costs during training</b>					

<sup>53</sup> See CFA (2009)



### **3.4. The Qualitative and Social Returns from Investments (ROI):**

As a part of the case studies, qualitative benefits of apprenticeship are assessed as well. These aspects address more the perceived productive value of an apprentice, which might be related to higher quality, motivation or higher levels of retention/less attrition.

The survey questionnaire includes a series of questions designed to measure the importance of a few qualitative benefits of apprenticeship training. These include: The advantages of employing an “internally trained” or “homegrown” skilled employee, in comparison to recruiting an external skilled worker. An “internally trained” employee refers to an employee trained as an apprentice who remains working at the employer’s company after their apprenticeship training is over. Questions were also asked whether the enterprise had a clear commitment to increase retention of apprentices and enable faster and better career opportunities for apprentices. Further, a part of the questionnaire also addressed questions whether employees who remained within the enterprise after their apprentices are more productive, given that they have been with the company for years and consequently are accustomed and a better fit with the organization. It will be interesting to see whether such a benefit could also be established in enterprises in India, when a larger survey is conducted.

#### ***Is there a wage premium or higher returns after the training period?***

In international studies, employers estimated at what point an apprentice’s productive value to their organization begins to exceed the training costs. In more than 50% of the cases, the employer perceives a net benefit of apprenticeship already at the mid-point of the apprenticeship during training, which averages two years, in the case of Canada (CFA, 2009). It needs to be seen where, in the case of Indian companies and in which trades enterprises can witness a positive return in the first year of an apprentice’s employment in the trade.

#### ***Adding the social costs of Apprenticeship***

Employers often have a narrower view of training costs, limiting expenditure and investments in apprentices to their own investments. They often have little awareness how much public funding contributes to the overall previous costs of the training given to students to achieve a diploma or ITI certificate after 2-3 years. If an informed discussion is to take place with employers about the extent to which costs are fairly shared between employers, apprentices and the State, they will need to be made aware of how costs are currently shared over the entire training and apprenticeship period. An indication was also provided of the employer’s share in the overall cost of training.

### **3.5. Reporting Framework and broader interpretation through other tangible and qualitative benefits**

Results are usually reported by trade and split by year of apprenticeship. This analysis demonstrates the time profile for costs and benefits. As will be shown in the following case studies, the results of the model are presented in a simplified table format that clearly shows the net benefit by year of apprenticeship.

While the monetary expenses for each of the apprenticeships will be discussed, the table will also be interpreted more qualitatively, and one will look at other benefits such as savings on recruitment and induction costs in case of retention after the apprenticeships. Similarly, qualitative assessments will be made on potential career pathways within the enterprise as well as whether apprentices are able to

gain a higher wage premium.

In the following five cases, since most of the apprentices have already joined with a 2-year vocational training experience, it is expected that cost recovery does take place during the 1-year training period. Wherever apprenticeships are fulltime and long term however, it needs to be explored whether partial financial recovery takes place during the apprenticeship period. For each type of apprentice therefore, a table will be developed which not only assesses the benefit-cost during the training period but also adds one to two more years post training, to monitor whether higher benefits can be generated through retention of trained apprentices. Further, wage premium, status of employment and mobility opportunities will be assessed as per the type of training/apprenticeship provided.

## 4. Method, Case Studies and Selection of Cases

After scanning the literature on ROI approaches and methods and after a critical reflection of their application in general, it was realized that a benefit-cost assessment / ROI for a country such as India, where labour markets are often informal and training/apprenticeships are predominantly informally delivered, needs to be much simpler, exploratory and inductive. As most companies, and particularly SMEs do not systematically collect data on performance of employees and apprentices, which could assess the impact of training and apprenticeships on employment or productivity, an ROI approach is a novelty.

This document has developed a method assessing the ROI of apprenticeship in the context of India on a pilot basis. Consequently a limited number of 5 case studies were conducted, which were used to contribute to the refinement of such a method, so that later, a quantitative tool can be used with standardized questions for more representative larger surveys. These initial case studies should be regarded as indicative for employers' training costs and their rationale for training and therefore, do NOT seek to be representative. This is particularly relevant for a country of the size and diversity like India, where surveys need to be of certain size so that general conclusions can be made.

Therefore, the approach in discussion looks basically at two methods, which is 1) how to conduct enterprise specific case studies on ROI, which also include quantitative and qualitative data and 2) how, based on these case studies, a simple quantitative questionnaire can be developed for a survey to assess ROI in enterprises, which undertake various forms of structured apprenticeships. A follow up survey on a larger scale might be explored and taken as a next step towards a regular assessment of benefit-cost analyses on apprenticeships in the future.

### 4.1. Case Study Approach

This document has worked out 5 case studies spread across 5 industries/sectors. They provide insights into the rationale, which guide employers' decisions regarding their investments in apprenticeships, what challenges employers face and how employers deliver training or cope to fill their skills gaps and shortages of skilled labour. The case studies reported are also consistent with the findings from international and India specific studies on how employers decide on apprenticeships and justify their reasons for investing apprenticeships and training.<sup>54</sup>

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<sup>54</sup> IAMR (2013)

## 4.2. Conducting the Employer Case Studies

The case study format is more detailed and in-depth than the survey following these studies. The survey was also complemented with additional open discussions with different department heads in the selected companies. The principal respondent in the case studies was the person responsible for managing apprentices. In the case of SMEs, it often includes the managing director/owner and HR/Admin manager. For some information on productivity, it might be important to contact the production manager or the finance department.

## 4.3. Data Collection and limitations

Having data is important! While over the years, many HR departments in larger enterprises have taken on to develop monitoring techniques and tools to assess effectiveness and efficiency of apprenticeships on employees and the overall productivity of enterprises, such an approach is, with some exceptions in large Indian firms, practically non-existent in the case in India and even less so in SMEs. Similarly, in the case of India, feedbacks from Employers' organizations and government indicate that lack of records and data availability are a significant challenge to undertake a representative ROI survey across the country.

**Box 14: Good and regular data collection is required!**

Data need to be collected regularly to effectively assess the ROI. Ideally, enterprises start collecting data at the beginning of the apprenticeship period and continue to do so during and after the apprenticeship, to appropriately assess ROI.

Data need to be collected regularly to effectively assess the ROI. Given the limited situation on training data, the author used various methods to assess the current ROIs in enterprises.<sup>55</sup> Ideally, enterprises start collecting data at the beginning of the apprenticeship period and continue to do so during and after the apprenticeship, to appropriately assess ROI.

While the costs associated with apprenticeship training are generally quantifiable, the benefits are more difficult to measure. One thing that seems particularly challenging is to capture specific performance of the participants against measured performance criteria and their increase in productivity over the time period. Further, the systematic assessment of the charge out rate per hour of an experienced skilled worker was not easy particularly for SMEs.

One significant part of the survey given to enterprises was designed to capture qualitative benefits derived from apprenticeship training. Keep in mind employers provided their subjective assessments when they were filling in that part of the questionnaire. While these are important aspects for the case study and later the survey, they cannot be monetized but support the main argument of whether ROI benefits exceed costs.

Against this background, the study here acts more as an inductive approach, using the 5 case studies from different industries to develop and test a method of calculating on ROI so that later, a more standardized version can be used for enterprise based assessments on ROI.

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<sup>55</sup> Such methods can include focus group discussions, surveys, telephone interviews, where available analyses of performance based performance sheets etc.

#### 4.4. Choice of semi-structured interviews

A semi-structured interview questionnaire is used to collect the information required for the ROI:<sup>56</sup>

1. Description of enterprise
2. HR policies and delivery of training and apprenticeships
3. ROI for Enterprises
4. ROI for Apprentices
  - a. Employability and retention within enterprise
  - b. Can one identify a wage premium
5. Brief Summary

#### 4.5. Selection of Cases, approaching enterprises and data availability

Industries were identified during a stakeholder meeting organized by the ILO, which was held in Delhi in May 2013, where Employers' organizations, central Trade unions, DGTE, MOLE and selected training providers were present.

Criteria for selection included that enterprises have recruited apprentices under the Apprentices Act and that enterprises provide apprenticeship or training in compliance with the Government, which leads towards certification, either under ATS or by other formally recognized national or international institutions. Further, it was agreed to select small and medium sized enterprises, where possible, and cases would be selected from Delhi, Bangalore and Chennai. The selection of cases also took into account the different sectors/industries and trades where apprenticeships are delivered. While as per the Apprentices Act 1961, manufacturing trades dominate and service related apprentices are very limited, it was decided that the study should take into account the growing skills needs in the service industry too. Therefore, based on the 13 Indian growth sectors identified by the planning commission, which are expected to face significant skills shortages as future drivers for growth and employment creation, we chose retail, tourism, automotive part manufacturing and engineering as cases.<sup>57</sup>

##### Box 15: Selection of cases

Jointly with the ILO social partners, it was decided that the study should take into account the growing skills needs the fast growing industries and in the service industry.

The Apprenticeship Advisors from DGTE were involved in the selection of the case studies and suggested the enterprises. The challenge was to get fulltime long-term apprentices. Further, it was challenging to get SMEs providing apprenticeships participating in the case studies. Hardly available are small enterprises providing longterm apprenticeships in the service industry.

With the government's guidance, the case studies were identified, which includes retail, hotels and tourism, automotive part manufacturing, furniture, and engineering.

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<sup>56</sup> see for details in annexure

<sup>57</sup> See Indian Planning Commission (2009): These growth sectors include Auto and Auto Components, Building and Construction Materials, Building and Construction, Real Estate Services, Electronics and IT Hardware, Education and Skill Development Services, Food Processing, Gems and Jewelry, Healthcare, Textiles, Leather and Leather Goods, Organised Retail, Tourism and Hospitality, Transportation and Logistics, Media and Entertainment, BFSI, Chemicals and Pharmaceuticals, Furniture and Furnishings, IT, ITES.

The Government Officials and Apprenticeship Advisors were involved in the selection of the case studies<sup>58</sup> and suggested the enterprises. The challenge was to get fulltime long-term apprentices. Further, it was challenging to get SMEs providing apprenticeships participating in the case studies. Hardly available are small enterprises providing apprenticeships in the service industry. Further, given the strong focus on industrial manufacturing in the Apprentices Act 1961, women's representation tends to be low. There are not many cases in small hotels/restaurants, where apprenticeship is provided. Further, several discussions with government officials from Bangalore, Delhi and Chennai revealed that apprenticeships are rarely long-term apprenticeships where school leavers join the company after 8-10th standard apprentices; particularly in trades related to manufacturing, they are mostly (80%) ITI certificate holders, who were trained for 2 years in ITIs after 10<sup>th</sup> standard and who require employability skills and therefore undergo a 6-month to 1 year apprenticeship to enter the labour market.<sup>59</sup>

**Table 7: List of selected of cases**

Company	Industry	Trade of Apprenticeship is offered	No of apprentices	Duration	Size	Locality
<b>CASE 1: Bühler India</b>	Food processing equipment	Technicians, mechanics	23 ATS 15 SIVET 17 CSR	Training academy, 1 year after ITI (GOI ATS) 2 years Swiss-Indo apprenticeship (SIVET) 4-year CSR apprenticeship	700	Bangalore
<b>CASE 2: Classic Moulds and Dies SCORE Member</b>	Automotive parts, 2 <sup>nd</sup> tier supplier	Assembly, tool mechanic	4 ATS apprentices 6 diploma holders/trainees	1 year after ITI (GOI), ATS	100	Chennai
<b>CASE 3: EFD INDUCTION India</b>	1 tier supplier automotives Induction heating), subsidiary	Technicians, mechanics	5 ATS 9 SIVET	1 year after ITI (GOI ATS) 2 years Swiss-Indo apprenticeship (SIVET)	300	Bangalore
<b>CASE 4: Foodworld</b>	Retail	Sales executives	19	6 months fulltime Apprenticeship ATS for freshers	650	Bangalore
<b>CASE 5: Lemon Tree Hotel, Gurgaon</b>	Hotel	Housekeeping Cooks Clerk	4 long term apprentices	18 months (housekeeping) 3 years (cooks, clerk) fulltime Apprenticeship for freshers	110	Gorgon, Delhi

### Other considerations

It was not easy to access SMEs, which train, and it was even more difficult to enroll enterprises; they needed to be convinced about the benefit of participating in such case studies. However, during the discussions, enterprises saw this undertaking as a useful opportunity to start looking more systematically at their apprenticeship delivery. Enterprises also saw an opportunity to provide a feedback about the existing apprenticeship system, which they hope would be reflected in ongoing amendments to the Indian Apprentices Act 1961.

<sup>58</sup> Mr. Satish Kumar, New Delhi, Mr. Ravindra Kumar, Gurgaon, Mr. Vijay Kumar, Bangalore were very helpful in selecting and suggesting enterprises.

<sup>59</sup> As per the discussions with Senior Government Officials and Apprenticeship Training advisers in Bangalore and Delhi, less than 10% are full time apprentices, who are usually hired by enterprises with clearly specialised training facilities, such as MICO Bosch etc.

## 5. The Case Studies

### 5.1. Case Bühler India, Bangalore

Bühler, a multinational enterprise with HQ base in Switzerland, is one of the world's leading specialists and technology partners for plant, equipment, and services for processing basic foods and for manufacturing advanced materials. As the global leader in the supply of flour production plants, pasta and chocolate production lines, animal feed manufacturing installations, and aluminum die casting systems, the 150-year-old company operates in over 140 countries and generated sales revenues of CHF 2,409 million in the fiscal year 2012.

Bühler has had its own affiliate in Bangalore India since 1992 and offers the complete product and service portfolio to the Indian market. It is India's market leader in the supply of customized turnkey projects and provision of rice processing systems, flourmills, color sorters, and feed manufacturing plants. The enterprise also supplies equipment to specialized automotive companies. With 700 employees on payroll, of which 580 staff is regularly employed and the remaining are either contract workers or apprentices and trainees, Bühler India belongs to the fastest-growing affiliates of the Bühler Group. Presently the company is setting up an R&D Laboratory and plans to expand the higher end manufacturing and research capacities within India to be closer to the needs of the fast growing market. The group enjoyed healthy growth of 26% CAGR and an annual turnover of 700 Crore INR during the fiscal year 2012/13, but has, like most manufacturers in India, been affected by the recent economic slow down.

#### *Addressing Skills Shortages through Training and HR Development*

As Bühler India attaches importance to excellence in service and product development, training is a critical aspect to equip a highly skilled and flexible workforce with the competencies specifically required to operate Bühler's specific technology (milling, coffee, snacks etc), which is currently not available in the labour market. Skills shortages are also prominent for welders, painters, poly and electrical mechanics, and it is difficult to retain trained middle level technicians and production professionals. However, with an average of 5%, mainly in the middle management level, attrition amongst regular employees is much lower than the industry average. There is still a critical skills shortage of women at all levels. Against these challenges, Bühler set up the Bühler Academy to foster talent for the enterprise and its customers through the provision of top-class training opportunities. The company builds technical, methodological and social skills related competencies as per the individual needs of the employees, apprentices and trainees. Since 2008, the Academy offers comprehensive apprenticeships and traineeships of various types and at different entry levels and increasingly engages in continuous skills training and skills up gradation of the existing workforce. With a long-term perspective to train and retain a capable workforce, Bühler India offers various apprenticeships and traineeships, which offer continuous jobs and career pathways within the enterprise. Through its CSR activity, the company offers long-term training opportunities to 15-20 top school performers from rural areas under a Bühler India's specific 4-year-long structured apprenticeship programme, which leads to diploma for mechanical engineering that is obtained from the Karnataka Open University (KSOU). In the ongoing pilot project "Swiss-Indian Vocational Education and Training Initiative VET" (SIVET) Bühler offers a professional career plan with Swiss certification to talented ITI certificate holders who join as apprentices but get a specialized dual track apprenticeship (75% practical and 25% theoretical), which is intensely mentored for a duration of 2 years after joining as an ATS apprentice. SIVET apprentices, after attaining ATS and SWISSMEM certification, continue on the job training for another 2 years as regular employees. These two groups are part of a dual track training process, which offers a mix of classroom and practical experience with strong monitoring and mentor support and specific project work in separate learning premises and sometimes on the shop floor.

Another group, the largest group, includes the apprentices with ITI certificate joining under the ATS Scheme for a year to gain practical experience. Currently, there are 23 ATS apprentices with 2 being women. For this group the focus lies on getting practical work experience. In the case of ATS apprentices, they have usually assigned mentors whom they assist during their practical training.

### ***Career Pathways for Apprentices***

There are clearly defined career pathways associated with the type of training that is offered in Bühler, which also reflects in retention of apprentices (see table 8). With the exception of the ATS short-term apprenticeship, all the other apprentices/trainees within Bühler are retained. In the case of apprentices under AST, Bühler usually provides a stipend during the apprenticeship period double the stipulated amount and offers strong candidates to do company training and regular employment, but mostly offers contractual work on the shop floor, where they work as assistants for about 6-9 working months, before they move on. This period is again considered another on the job training opportunity; however, poor academic skills and workplace performance mostly lead to the decision within the enterprise not to renew the contract. This again reflects the challenges the company faces in recruiting ITI graduates on campus with the required academic and technical track records.

**Table 8: Overview of Training /Apprenticeship provision in Bühler**

<b>Short Term Government Apprenticeship under ATS (with ITI certificate), 1 year, BASE IV</b>					
Entry Level	No	Package	Training	Certification	Development focus
ITI	23	Stipend, double of ATS stipulated amount (3500 INR/month), food	75% workplace based 25% Class room, production focus as per GOI syllabus	ATS Board (NCVT, Govt. of India)	Little retention as contract workers (4500 INR), possibility to enter 2 years as specialized company trainees workplace based training
<b>SIVET (ITI), 2years, Base III</b>					
Entry Level	No	Package	Training	Certification	Development focus
ITI	15	4500 INR/month, food	Dual track Course: 80% practical, 20 Class room, long term focus on internal career, highly diversified	Swiss Diploma (SWISSMEM) and ATS Board	Entry as technician. 100 % retention, starting salary 12,500 INR), time based bond and continuous career development perspective.
<b>CSR based long term apprenticeship, 4 years, recruited from rural, backward areas, BASE I</b>					
Entry Level	No	Package	Training	Certification	Development focus
10th PUC	17	Breakfast, Lunch, assisted living, Stipend	Dual Track, 75% workplace based, 25% class room, long term focus on internal career, highly diversified	Diploma in Mechanical Engineering by Karnataka Open University, (KSOU), Bühler	Enter as Assistant Technicians (12,500-14,000 INR/month) 100% retention, time based bond.

### ***Returns from Investments***

With regard to ROI, there is a clear difference between the three types of apprentices, how fast cost recovery is expected to happen. For the SIVET apprenticeship, it is expected that cost recovery during the apprentice period is slower as production is only linked to their project related production, which is a part of the practical training. In the case of SIVET, the ROI consequently will only be recovered, at much higher level, when they officially work on the shop floor after their training period.

The typical ATS apprentice earns about 42,000 INR per annum, while a CSR apprentice and SIVET apprentice earns 68,000 INR for the first year. In contrast, an experienced and skilled technician in Bühler earns app. 40'000 INR per month. The company, as shown in the table below, spends an average 163,509 INR for each ATS apprentice per annum. While during the first 6 months, the contribution of the apprentices is minimal with 10% of the productivity of an average skilled employee within Bühler, the apprentice's contribution in comparison to a skilled worker increases to 30% during the second half of the year. During the second 6 months, the enterprise gets a clear benefit from apprentices who contribute 154,364 INR and therefore, is able to recover the entire investments made into the apprentice during the apprenticeship period itself for ATS apprentices. As there are drop out cases, there are additional costs that occur from the investments into the apprentices who leave the enterprise. During the ATS year, Bühler generates for each INR invested 1.08 INR returns.

**Table 9: ROI for GOI ATS Apprentices in Bühler India**

	1-6 months	7-12 months	TOTAL Apprenticeship
<b>Assumptions</b>			
Number of apprentice or trainees who drop-out		20%	
Batch Size	23	17	
GOI Apprentice or trainee salary (CTC INR p.a.)	21,000	21,000	42,000
Salary of Fully Experienced Worker (CTC INR p.a.)	246,500	246,500	493,000
Charge out rate per hr for experienced worker	424	424	
No of hrs worked by app. per annum	1,184	1,184	2,368
App. productivity (% of skilled workers)	10%	30%	
<b>COSTS</b>			
Supervision costs (per apprentice or trainee)	24,783	29,076	53,859
Additional training costs per apprentice or trainee (INR)	49,641	50,864	100,505
<b>TOTAL COSTS for training per apprentice</b>	<b>74,424</b>	<b>79,940</b>	<b>154,364</b>
<b>Benefits generated per apprentice (INR)</b>			
Apprentice benefit	50,202	150,605	200,806
<b>Total benefit per apprentice or trainee</b>	<b>50,202</b>	<b>150,605</b>	<b>200,806</b>
<b>Net benefit per apprentice or trainee (benefit-cost)</b>	(24,222)	70,665	<b>46,442</b>
<b>Net benefit per apprentice incl. drop out rate</b>	(24,222)	54,577	<b>30,454</b>
<b>Benefit/cost ratio incl. drop out rate</b>			<b>1.08</b>

In the case of SIVET apprentices, Bühler keeps by design the focus on investing into multi-skilling, high levels of technical and soft skills, which are only partially acquired on the shop floor but mostly in well-equipped and separate working premises and with more dedicated human resources supporting the training process. Consequently, net benefits start being generated in the 2<sup>nd</sup> year, while full recovery of investments is slower and in the case of SIVET will be realized during the third year, when apprentices join the shop floor for on the job training as regular wage employees. At While productivity was very low with 10% during the first year and 30% during the second, their productivity is expected to increase significantly to 60% during the 3<sup>rd</sup> year and more so during the 4<sup>th</sup> year (80%).



Table 10: ROI for SIVET

SIVET	Year 1	Year 2	TOTAL App. Period	Year 3 (OJT)	Year 4 (OJT)	Year 5 expected
<b>Assumption apprenticeship</b>						
Number of apprentice or trainees who drop-out without completing	0	0		0	0	
Batch size	15	15		15	15	
Stipend (CTC)/Salary Apprentice	68,040	82,050	<b>150,090</b>	150,000	168,000	201,600
Salary of Fully Experienced Worker (CTC INR p.a.)	493,095	517,750	<b>1,010,845</b>	543,637	570,819	599,360
Charge out rate for experienced worker	424	445		467	491	515
Number of working days app per annum	2,368	2,368		1,741	1,741	1,741
Trainee productivity (% of skilled workers)	10.0%	30.0%		60%	80%	120%
<b>COSTS</b>						
<b>Supervision costs (per apprentice or trainee)</b>	<b>95,333</b>	<b>100,100</b>	<b>195,433</b>	<b>46,305</b>	<b>48,620</b>	<b>51,051</b>
<b>Additional training costs per apprentice or trainee (INR)</b>	<b>189,873</b>	<b>198,383</b>	<b>388,257</b>	<b>150,000</b>	<b>168,000</b>	<b>201,600</b>
<b>TOTAL COSTS for training per apprentice</b>	<b>285,207</b>	<b>298,483</b>	<b>583,690</b>	<b>196,305</b>	<b>216,620</b>	<b>252,651</b>
<b>Training benefits per apprentice or trainee (INR)</b>	100,403	316,270	<b>311,250</b>	488,253	683,554	1,076,597
Savings on recruitment costs				20,000	20,000	20,000
<b>Total benefit per apprentice or trainee</b>	<b>100,403</b>	<b>316,270</b>	<b>416,673</b>	<b>508,253</b>	<b>703,554</b>	<b>1,096,597</b>
<b>Net benefit per apprentice or trainee (cost-benefit)</b>	<b>-184,803</b>	<b>17,787</b>	<b>-167,017</b>	311,948	486,933	843,946
<b>TOTAL recovery flow</b>				144,941	631,864	1,475,810
<b>ROI Benefit/Cost Ratio</b>			<b>0.7</b>	<b>1.2</b>	<b>1.6</b>	<b>2.2</b>

Bühler further expects that SIVET apprentices can apply their broader competencies from year 4 and start filling the existing skills gaps of team members and team leaders, which will not only significantly increase their wage premium but the overall productivity of the worker. While empirical evidence however needs to be established, it is expected that SIVET apprentices exceed productivity and skills levels of an experienced technician in the mid- and long run, as their problem solving capacity and multi-skilled competencies leads to them taking on more responsibilities.

### Summary

The ROI reveals for both categories of apprentices, GOI ATS and SIVET, that training investments can be recovered quite quickly, even during the training period of 1 year in the case of ATS and after in the first year after the apprenticeship in the case of SIVET. The current scenario indicates that even though it might make business sense to hire apprentices and retain them, Bühler decides against it with the argument that most ATS apprentices lack academic and workplace related competencies, which are required to grow into full-fledged employees within Bühler. Another aspect is the quota set by the government to ensure an annual intake of 20 apprentices under ATS, which is beyond the Human Resource requirements at entry level by the firm. By not retaining them and providing them more specific training on the shop-floor, the emphasis of training and the benefits are therefore significantly different for ATS and SIVET or CSR apprentices. While both latter categories can

clearly benefit from the investments made on them to progress internally, ATS apprentices are less able to leverage their additional training to increase their chances either for job security or for interesting job prospects as skilled workers in other enterprises.

The investment focus of Bühler for SIVET and CSR apprentices, which goes hand in hand with the existing expansion plans in R&D and customization of products and services, re-affirms the commitment of the enterprise to expand the apprentice and training system, which is however more in line with the SIVET and CSR type of structured apprenticeship. The question therefore remains, how the Government can support Bühler in accessing academically strong and well-qualified apprentices and set incentives so that the company retains ATS apprentices and ensures training and growth opportunities similar to SIVET career pathways for many more ATS apprentices.

## 5.2. Case Classic Moulds and Dies (CMD), Chennai

Classic Moulds and Dies (CMD) started in 1993 and has since become one of the leading six specialized precision engineering enterprise in India, supplying customized, highly specialized tools, dies and fixtures to a diversity of clients from the Auto Mobile, Aerospace, Electrical Industries and Consumer Durable Goods Market. Though the business environment has been very competitive, the enterprise has shown steady annual growth of 15% despite the economic slow down, and balances its clientele to reduce the risks of depending too much on one specific market segment. Introduction of state of the art production facilities over the years, an ERP systems and international certification have increased the client network across the world. CMD exports to USA, UK, Japan, Spain, France and other countries since 1996, which however amounts to only a marginal share of 5% of the current turnover of INR 8 Crore (1.3 million USD) per annum.

The enterprise presently employs 90 staff on a regular basis, who are considered the greatest asset of CMD. CMD has a flat structure with a small management and a group of team leaders and supervisors managing production of 30 skilled operators and 20 semi-skilled staff, 6 trainees with diploma and 4 apprentices. The share of women in the enterprise is low with only 3 women employed in the administration. The company has an average attrition rate of 35%, which is particularly high in the semi-skilled operator category. Retaining employees during the first 3-4 years is challenging, however from year four onwards, when employees are fully experienced machine operators, CMD's attrition is very small.

### *Addressing Skills Shortages through Training and HR Development*

CMD puts emphasis on excellence in production and invests into continuous training and skills up gradation of each employee to ensure quick adaptation and flexibility. Skills shortages are prominent for the semi-skilled and skilled operator segment, as versatile welders, fitters, turners, and electrical mechanics are required, who however, need to be further trained to independently execute the highly customized and small-scale production. The company also experiences skills shortages at a higher technical level like design and development, machining and CNC based production. To meet the skills gaps at the advanced level, the company usually builds in-house capacities and regularly sends qualified employees for technical and managerial training to AIMA (Ambattur Industrial Estate Manufacturers' Association in Chennai), the local association, which provides customized support services to SMEs within the Ambattur Cluster in Chennai.

CMD has also been facing challenges in the recruitment of apprentices. The company is keen on hiring ITI certificate holders as apprentices and retaining them long term to build an in-house capacity with the right job-specific multiple skills sets that are required. Discussions reveal that SMEs within

the cluster face challenges of retention and recruitment of apprentices, as MNCs and large Indian enterprises are competing with more attractive starting salaries, often trainee salaries and other benefits (free food and transport), which SMEs cannot provide (although they provide stipends at least double if not three times the amount of the stipulated wage). Though many of the apprentices seem to end up with menial jobs and do not get trained in these companies, and often have a contract for a short period of one year, apprentices and ITI certificate holders seem to prefer to join these enterprises. To meet the skills gaps at entry levels, CMD has started raising awareness about internal career opportunities and offers job security after the apprenticeship, when they go for campus recruitments.

For the year 2013/14, CMD has hired 4 apprentices (ATS with ITI certificates) and 6 trainees (with engineering diploma) as trainees on payroll. The apprentices undergo the 1-year ATS apprenticeship in assembly, while trainees deepen their practical knowledge and workplace experience on the job. 80% of the apprenticeship is practical on separate workbenches and on the job. They also attend compulsory theoretical classroom courses in their former ITI for 1 day a week. These weekly classes provide theoretical knowledge and opportunities to share their working experiences. There is a close collaboration between the enterprise and the ITI, through which attendance, content of training and progress of the apprentices are monitored. During their training on-the-job, apprentices are usually mentored by team leaders.

### ***Career Pathways for Apprentices***

The enterprise provides internal career progression and opportunities for employees to take on additional responsibilities and leadership functions. Minimum entry-level qualification is an ITI certificate, and these candidates start as ATS apprentices. Usually, a certified ATS apprentice works for 3 years as a semi-skilled worker, and from year 4 onwards as a skilled operator, who, with initiative and interest in further education, can progress to supervisor, team leader and manager. The enterprise takes pride in referring to cases, where apprentices with ITI certificate have, within 7 years and with adequate training support, become assistant managers and team leaders. Discussions reveal that as an SME, the enterprises faces challenges of retention of semi-skilled workers who have been with the enterprise for 2-3 years and earn less in comparison to salaries offered in larger enterprises for the same work experience. While salaries are on par with other industries from 4 years onwards, the wage difference at a lower level leads to the undesired attrition. Therefore, retaining the semi skilled workers and apprentices has become the emphasis of the enterprise. With the recent efforts of communicating job security after passing the ATS exams and good career prospects, CMD has been able to retain 80% of the apprentices and trainees during the last years.

### ***Returns from Investments***

The typical apprentice earns about 5000-6000 INR per month for one year, while a semi-skilled worker with around 3 years of working experience in CMD earns app. 18,000 INR per month. The company, as shown in the table below, spends an average 135,100 INR for each apprentice per annum. While during the first 6 months, the contribution of the apprentices is minimal with 20-30% of the productivity of an average skilled employee within CMD, the apprentice's contribution of a skilled worker increases to 40-50% during the second half of the year. During the second 6 months, the enterprise gets a clear net benefit from apprentices who contribute 27,126 INR and therefore, is able to recover more the entire investments made into the apprentice during the apprenticeship period itself. In case of dropouts (20%) during the apprenticeship period, there are additional costs that occur from the investments into these apprentices who leave the enterprise, so that the net benefit amounts to app. 106 INR, which means that there is only a marginal net benefit after these costs are taken into account. In case the apprentice remains in the enterprise during the 2<sup>nd</sup> year, and joins as a regular employee, as can be seen, additional recruitment and training costs amounting to 27,000 INR can be saved and consequently returns increase significantly, where, during the second year. This would mean that for each Rupee invested into the apprentice, the enterprise actually is able to generate 1.5

INR after the training period is over. This is a critical point that needs to be addressed as such attrition rates add significant costs to the company.

**Table 11: ROI: CMD's Returns in Investments from Apprenticeship**

<b>ATS Apprenticeship (1 year)</b>	<b>0-6 months</b>	<b>6-12 months</b>	<b>TOTAL App. Period</b>	<b>Year 2 on pay roll</b>
<b>Assumptions</b>				
Number of apprentice or trainees who drop-out without completing in particular function			20%	35%
Batch size	4	4		
GOI Apprentice salary (CTC INR p.a.)	36,000	36,000	<b>72,000</b>	<b>108,000</b>
Salary of Fully Experienced Worker (CTC INR p.a.), skilled after 3 years.	108,000	108,000	<b>216,000</b>	<b>237,600</b>
Charge out rate for skilled worker	199	199	199	219
no of hrs worked by apprentices	1,164	1,164	2,328	1,692
Trainee productivity (% of skilled worker)	25%	45%	35%	60%
<b>COSTS</b>				
<b>Supervision costs (per apprentice or trainee)</b>	<b>8,100</b>	<b>4,320</b>	<b>12,420</b>	<b>7,128</b>
% of Training Manager or Supervisor time spent	8%	4%	6%	3%
Training Manager's Salary (CTC INR p.a.) 108000	8,100	4,320	12,420	7,128
<b>Additional training costs per apprentice or trainee (INR)</b>	<b>63,000</b>	<b>64,000</b>	<b>127,000</b>	<b>108,000</b>
<b>TOTAL COSTS for training per apprentice</b>	<b>71,100</b>	<b>64,000</b>	<b>135,100</b>	<b>115,128</b>
<b>Training benefits per apprentice or trainee (INR)</b>	57,938	104,288	162,226	222,338
				27,000
<b>Total benefit per apprentice</b>	<b>57,938</b>	<b>104,288</b>	<b>162,226</b>	<b>249,338</b>
<b>Net benefit per apprentice (benefit-cost) for Enterprise</b>	(13,162)	40,288	27,126	134,210
<b>Net benefit incl. drop out rate of apprentice (and after app. training)</b>			106	134,210
<b>Benefit/Cost Ratio inclusive drop out rate during training:</b>			1.0	1.5

### Summary

The ROI reveals that training investments are more than recovered during the training period of 1 year in the case of CMD and more importantly, if the ATS apprentices are retained and remain on payroll for longer. Since CMD has an investment focus, while hiring apprentices, and aims at retaining and building capacities in-house with the aim of reducing attrition and to avoid expensive external recruitments at higher levels, expansion of apprenticeships, as planned completely makes sense. The enterprise's stronger involvement in recruitment and their proactive steps to go to ITI campuses and raise awareness about training and working opportunities has shown to be effective. Another important development seems to be that apprentices join through existing informal networks and references. While proactive steps of the company to approach campuses and students directly have led to higher recruitment, the finding of well-motivated and qualified students who are willing to join CMD and remain for longer than 3 years remains a challenge. The enterprise hopes that Government can support CMD in identifying and accessing academically strong and well-qualified apprentices and promote and raise the awareness about the benefits of apprenticeships, particularly in SMEs, in both secondary schools and ITIs.

### 5.3. Case EFD INDUCTION

EFD Induction, an over 60-year old Multinational Company, originally from Germany and headquartered in Norway, specializes in induction-based industrial heating solutions and has its manufacturing plants, workshops and service centres also in India. EFD provides products and services to many of the world's leading manufacturing and service companies across 75 countries. The company's success is attributed to the strong focus on innovation, high levels of customization and flexible adaptation, which has over the years, positioned EFD as one of the global leaders in the heat induction field.

The subsidiary in Bangalore is an independent legal entity, which has, over the years, established a solid client base in India, mainly in the Automotive and Steel industry and is well known for innovative and high quality products and services. With an overall turnover of INR 80 Crore (app. 13 Mio UDS), 60% of the business comes from domestic markets, while 40% is exported. Given the high emphasis on continuous product and service improvement to remain competitive within an increasingly aggressive market place, the company progressively invests into training and retaining of a highly skilled and versatile workforce. With an average of 6% attrition rate, mainly in the middle management, attrition amongst regular wage employees is much lower than the industry average.

With a workforce strength of almost 300 employees, of which 200 are regular employees and 100 are either apprentices or contract workers, EFD has a flat organizational structure: a small management team (12 people), 30 managers/team leaders (usually diploma holders and engineers with 10 years experience in EFD), 200 team members, 15 Trainees with diploma in Engineering and 9 Apprentices. Minimal qualifications to join EFD as an apprentice are an ITI certificate as an electrical or machine mechanic, fitter or CNC technician.

#### ***Addressing Skills Shortages through Training and HR Development***

EFD faces skills shortages at the entry and team leader level, where attrition with over 6% is the highest. One of the main challenges is the recruitment of qualified ITI certificate holders who join as apprentices, as they mostly lack the academic and communication skills and work place exposure, which are required to work independently and execute highly customized production. Other reasons might include the long commuting distances to EFD and low levels of stipends besides lack of awareness about the company. EFD, despite paying apprentices significantly higher stipends than legally required, faces challenges to get the candidates with the relevant academic and working competencies to be able to retain them after the apprenticeship. Usually, after attaining the ATS certificate, they remain in the company as contract workers for a few months and only a minority remains as semi-skilled workers, while the rest moves on.

Recruitments at entry levels are usually made in nearby campuses for both, prospective apprentices (ATS) and candidates with Diploma (Polytechnics). Latter are hired as regular wage employees and undergo a 1-year induction training to become a team member later. The candidates usually undergo a rigorous screening process, which includes a written test, interview and practical exam to be selected. In a pilot project, EFD has recently tied up with the ongoing project "Swiss-Indian Vocational Education and Training Initiative VET" (SIVET) and offers a professional career plan with Swiss certification to 9 talented ITI certificate holders who join as apprentices under the ATS scheme but get specialized and multi-skilled during a dual track apprenticeship (80% practical and 20% theoretical), which is intensely mentored for a duration of 2 years: after joining as an ATS Apprentice for the first year after which they are hired as trainee staff during the second year. These apprentices enter the shop floor less often but work in separate working premises with a dedicated instructor and on multiple projects to attain a multi-skilled qualification, which results in a Swiss acknowledged

certificate besides the ATS certificate and an assured career in EFD. In contrast, apprentices under ATS and Diploma holders train for employability skills mostly on the job on the shop floor and have 1 day classroom based training, where they join, in the case of apprentices, SIVET apprentices for theoretical training provided by well qualified ITI instructors (especially trained under the SIVET project).

EFD hires apprentices and trainees at entry levels for the following three main reasons. First, EFD is investing into the future—they know that the industry is growing but that there are impending shortages of young, skilled and adaptable workers. Secondly, there are cost savings to the firm in employing apprentices, as they are paid a percentage of a team member, while they are in training. And third, the firm is required by the Apprentices Act to give 10 apprentices the opportunity to be trained each year. As the SIVET project progresses, EFD plans to further expand the SIVET training and hopes to be able to recruit the right ITI certificate holders on a larger scale for this more intense and structured apprenticeship.

### *Career Pathways for Apprentices*

The career pathways are transparent and an HR Policy is in place, which includes annual performance appraisals, encourages and allows continuous skills development of the workforce, supported by internal and externally funded trainings as per individual requirements to be able to progress professionally within the company. With regard to apprentices, there are three ways how EFD recruits, retains and offers career opportunities to apprentices and diploma holders (Table 112):

**Table 12: Overview of Training /Apprenticeship provision in EFD**

	<b>Type of Entry</b>	<b>Type of Training</b>	<b>Certification</b>	<b>Career perspective</b>
<b>Type 1: ITI + Apprenticeship</b>	1 Year ATS @ Stipend level (significantly higher than stipulated)	Focus on shop floor and work experience (5 days practical, 1 day class room)	ATS	Rarely retained. Some months as contract workers, then move on.
<b>Type 2: ITI + Apprenticeship + special selection for SIVET (1 year after ATS)</b>	1 Year ATS + 1 year SIVET (Payroll) @ Stipend level (significantly higher than stipulated)	Focus on multi-skilling, dedicated training platforms and instructors (5 days practical, 1 day class room)	ATS and Swiss certificate	Clear focus on internal career pathway, high retention and signing of Bond
<b>Type 3: Diploma, Polytechnics</b>	1 Year traineeship but on payroll with entry level salary	Focus on production related skills on the shop floor (5 days practical, 1 day classroom)	No additional certificate.	Next step as team members, very high retention

The retention of 1-year apprentices under ATS is usually low, and only few apprentices, after attaining their ATS certificate are retained as regular employees. Reasons mentioned are low academic skills and workplace performance, as candidates do not have the technical and academic competencies that are required to execute work on the machines independently and according to the requirements of the firm. There are however cases, where ATS certificate holders show promise and get absorbed, so they turn into regular employees who continue their training for another year on-the-job before getting positions as semi-skilled workers or team members. SIVET apprentices, after being hired under ATS with a higher salary than other ATS apprentices, are on payroll from the second year onwards. While the pilot with SIVET apprentices has yet to come to an end, EFD clearly emphasizes on retention of SIVET apprentices and plans to promote them above team leader level after gaining the required experience and additional training.

### Returns from Investments

Given the different scenarios outlined here, which also provide different employment perspectives, it is important to assess the various forms of returns of Investments of training/apprenticeships. The typical ATS apprentice earns about 3750 INR per month for one year, while a SIVET apprentice joins with at 5000 INR per months. In contrast, a skilled worker with around 3 years of working experience in EFD earns app. 30'000 INR per month. The company, as shown in the table below, spends an average 88,250 INR for each ATS apprentice per annum. While during the first 6 months, the contribution of the ATS apprentices is minimal with 10% of the productivity of an average skilled employee within EFD, the apprentice's contribution of a skilled worker increases to 30% during the second half of the year. During the second 6 months, the enterprise gets a clear benefit from apprentices' contribution and therefore, is able to recover the investments made into the ATS apprentice during the apprenticeship period itself. It even generates out of each INR invested, an additional 16% (see table 12).

**Table 13: EFD Returns in Investments from ATS Apprenticeship**

<b>ATS Apprentice (1 year)</b>	<b>1-6 months</b>	<b>6-12 months</b>	<b>TOTAL App. Period</b>
<b>Assumptions</b>			
Number of apprentice who drop-out without completing in particular function			<b>NIL</b>
ATS Apprentice salary (CTC INR p.a.)	22,500	22,500	<b>45,000</b>
Salary of Fully Experienced Worker (CTC INR p.a.)	360,000	360,000	<b>600,000</b>
Charge out rate for of fully experienced worker/hr	289	289	
No of hrs worked per year apprentice	1332	1332	<b>2664</b>
ATS Apprentice productivity (% of skilled workers)	10%	30%	<b>35%</b>
<b>COSTS</b>			
Supervision costs (per apprentice or trainee)	<b>18,000</b>	<b>27,000</b>	<b>45,000</b>
Additional training costs per apprentice (INR)	<b>49,000</b>	<b>39,250</b>	<b>88,250</b>
<b>TOTAL COSTS for training per apprentice</b>	<b>67,000</b>	<b>66,250</b>	<b>133,250</b>
<b>Total benefit per apprentice</b>	<b>38,558</b>	<b>115,674</b>	<b>154,232</b>
<b>Net benefit per apprentice (benefit-cost)</b>	<b>(28,442)</b>	<b>49,424</b>	<b>20,982</b>
<b>Benefit/Cost Ratio</b>			<b>1.16</b>

In the case of SIVET apprentices, EFD keeps by design the focus on investing into high levels of technical and soft skills, which are only partially acquired on the shop floor but mostly in separate working premises and with more human resources supporting the training process. Consequently, recovery of investments is slower and starts only during the third year, when SIVET apprentices join the shop floor. Assuming a 100% retention, the firm is also able to save 60,000 INR in the third year, so that with over 70% productivity and apprentice is able to generate for each invested Rupee 1.5 additional Rupees. It can further be expected that SIVET apprentices can apply their broader competencies from year 3 and start filling the existing skills gaps of team members and team leaders, which will not only significantly increase their wage premium but the overall productivity of the worker. This empirical evidence however needs to be established.

**Table 14: EFD Returns in Investments from SIVET**

<b>SIVET Apprentice (1 year ATS, 1 year Trainee)</b>	<b>Year 1</b>	<b>Year 2</b>	<b>TOTAL App. Period</b>	<b>Year 3 on payroll</b>
<b>Assumptions</b>				
Number of apprentice who drop-out without completing in particular function	0	0		0
SIVET Apprentice salary (CTC INR p.a.)/person: 1st year under ATS 2nd year apprentice on payroll, 3rd and 4th year as staff	60,000	105,000		120,750
Salary of Fully Experienced Worker (CTC INR p.a.)	360,000	396,000		435,600
Charge out rate for of fully experienced worker/hr	289	294		323
No of hrs worked per annum apprentice	2,664	2,394		2,394
SIVET Apprentice productivity (% of skilled workers)	20%	40%		70%
<b>COSTS</b>				
<b>Supervision costs (per apprentice or trainee)</b>	<b>28,333</b>	<b>23,833</b>	<b>52,167</b>	<b>18,000</b>
<b>Additional training costs per apprentice (INR)</b>	<b>157,778</b>	<b>202,222</b>	<b>360,000</b>	<b>120,750</b>
<b>TOTAL COSTS PER APPRENTICE</b>	<b>186,111</b>	<b>226,056</b>	<b>412,167</b>	<b>138,750</b>
<b>Training benefits per SIVET apprentice (INR)</b>	<b>63,858</b>	<b>129,674</b>	<b>193,532</b>	<b>499,246</b>
<b>Recruitment/induction Savings if retained</b>				<b>60,000</b>
<b>Total benefit per apprentice</b>	<b>77,116</b>	<b>140,725</b>	<b>217,841</b>	<b>601,792</b>
<b>Net benefit per apprentice (benefit-cost)</b>	<b>(108,995)</b>	<b>(85,330)</b>	<b>(194,326)</b>	<b>463,042</b>
<b>Cost Recovery</b>				<b>268,717</b>
<b>Benefits/ Cost Ratio</b>				<b>1.5</b>

### **Summary**

The ROI reveals for both categories of Apprentices, ATS and SIVET, that training investments can be recovered quite quickly, even during the training period of 1 year in the case of ATS and after 3 years in the case of SIVET. The current scenario indicates that even though it makes business sense to hire apprentices and retain them, EFD decides against this decision in most of the cases, with the argument that the ATS apprentices lack academic and workplace related competencies which are required by EFD. The benefits for apprentices are therefore significantly different for ATS and SIVET apprentices. While latter can clearly benefit from the investments made on them and the opportunities provided by EFD to progress internally, ATS apprentices neither have job security nor prospects to be hired as skilled workers by other enterprises.

Since EFD has an investment focus, while hiring SIVET apprentices, and aims at retaining and building capacities in-house to avoid expensive external recruitments at higher levels, one should explore other ways to optimize apprenticeships, particularly for the ATS group. The question therefore remains, how the Government can support EFD in accessing academically strong and well-qualified apprentices and set incentives so that EFD provides more long-term training and job opportunities like a SIVET career pathway for many more ATS apprentices.

## **5.4. Case Foodworld, Bangalore**

Foodworld is a chain of supermarket stores, offering shopping opportunities to customers in supermarkets, gourmet stores and an increasing number of minimarts. Foodworld started in 1996 as a division of Spencer & Co, a part of the Singapore based RPG Group, a highly diversified conglomerate, and registered in August 1999 as a separate company. Foodworld has the regional office based in Bangalore and operates a total of 73 stores, with 41 stores in Bangalore and the remaining ones in Hyderabad, Coimbatore & Chennai.



As early players in the growing retail market targeting the urban middle class, Foodworld's leadership has over time been challenged by a fast growing competition from new entrants, local brands and hypermarkets. Another challenge poses increasing real estate prices, which affect the overall profitability of stores in well-visited and popular areas. Currently ranked as the 8 largest food retailer in India, the company is in the process of consolidating the operations and focuses on increasing sales and service quality as the main objective. A new strategy is to set up stores in remote residential areas to service higher income client segments living in gated communities or apartment complexes.

Currently, Foodworld has 800 people on payroll, of which 650 have regular employment. Regular wage employees execute all the core functions, while security, delivery and cleaning are usually contracted out. The employee profile is very young with the majority of employees being between 18-30 years old. Very high attrition rates are characteristic for Indian retail, which is also a challenge experienced by Foodworld (60-70%). While at senior executive/management level, attrition is low (5%), it is particularly the lower level sales executive group (Customer Service Executives) that shows highest attrition; and it requires continuous recruitment and training investments from the company.

### ***Addressing Skills Shortages through Training and Career Pathways***

With retention of trained sales executives as a priority, Foodworld has started taking various steps to address this challenge. To meet skills shortages, the enterprise recruits freshers and highlights career opportunities within the enterprise. It was mentioned that most store managers started as sales executives. Foodworld entered into an MOU with several training providers and the DGTE to more effectively reach out to freshers with a school-leaving certificate after 10th standard, who are seeking training opportunities and employment. The management also encourages students (PUC and college or University students) to work on a part time basis and, after graduation, offers them employment opportunities as supervisors or assistant store managers. It was also mentioned that lack of maturity of school leavers and lack of work orientation are responsible for this situation, while students working part time seem more focused and stable.

### ***Recruitment and retention of Apprentices***

Currently, Foodworld in Bangalore has 21 apprentices, half of them women. The apprentices are usually recruited on campus through interviews and assessed for reading skills, basic numerical and most importantly for integrity. The enterprise faces challenges to get candidates with strong communication skills and high levels of integrity. Second round interviews are usually undertaken only for recruitment of supervisors or store managers. Jointly with the Department for training and employment, Foodworld initiated a 6 months structured apprenticeship programme, which has been initiated 2 years ago. The 6-months programme usually starts with a 1-month initiation programme in the classroom in the regional headquarters to get familiarized with pricing, products and the culture of the firm. There, apprentices receive product handouts and other training materials to memories. This inception period continues with 5-months apprenticeship on the shop floor. The apprentices are usually spread in groups of two across the city. The distance to home is usually taken into account when placing them. There are dedicated mentors associated with the apprentices from the beginning; apprentices are part of the daily planning meetings, where targets are set and where they can contribute. However, overall, there is no clear structured training process on the shop floor.

The enterprise faces the challenges of retention even during this short training period. This, despite the fact that the enterprise usually pays apprentices with 4,500 INR/month; more than double the obligatory stipend amount. Dropouts might have to do with the fact that currently market wage rates are significantly higher than minimum wages and amount to 6,000-7,000 INR per month for trained

sales executives. Further, lack of awareness and the low social status of the profession result might be responsible that apprentices choose sales executive as a second if not third option and drop out as soon as they get admission in colleges or other more attractive professions.

### **Returns from Investments**

The typical apprentice earns about 4,500 INR per month during the 6-months training period, while a sales executive earns between 6,000-7,000 INR per month. The company, as shown in the table below, spends on an average 64,800 INR for each apprentice per training. The returns from investments (ROI) are positive or rather cost neutral during the training period itself, provided that apprentices stay. It is expected that an apprentice will work at 60% productivity of an experienced sales executive during this period, and attends classroom induction training for 1 month before being trained in a store. The enterprise would be able to recover the costs for an apprentice quickly after the training period, assuming that the apprentice remains in Foodworld and will be absorbed as a regular employee. However, drop out rates for apprentices are very high, which needs to be taken into account, when calculating ROI. With more than 50% of the apprentices dropping out already during the apprenticeship period, and with an even higher attrition rate after finishing the apprenticeship, the enterprise is expected to make a loss of 7,613 INR per apprentice during the training period. Retention during, and even more importantly after the apprenticeship is therefore critical for the recovery of these additional expenses. Should Foodworld be able to retain the apprentices each INR invested could triple the benefit generated within the first year of employment itself. However, ROI one year after training increases significantly and for each INR invested, the enterprise generates 1,8 INR.

**Table 15: Foodworld Apprenticeship for 6 months in retail sale**

<b>ATS Trainee 6 months</b>	<b>6 Months apprenticeship</b>	<b>Year 1 on payroll</b>
Assumptions		
Number of apprentice or trainees who drop-out	50%	50%
Batch size per store	2	
GOI Apprentice salary (CTC INR/6 months), afterwards on payroll	27,000	64,800
Salary of Fully Experienced Worker (CTC /annum)	48,514	111,582
Charge out rate for skilled worker	110	121
No of hrs worked by skilled worker/6 months	1,186	1,822
Trainee productivity (% of skilled workers)	60%	80%
<b>COSTS</b>		
Supervision costs (per apprentice or trainee)	10,800	
Additional training costs per apprentice or trainee (INR)	42,000	64,800
<b>TOTAL COSTS for training per apprentice</b>	<b>52,800</b>	<b>64,800</b>
<b>Training benefits per apprentice or trainee (INR)</b>		
Apprentice or trainee contribution	<b>84,603</b>	<b>187,000</b>
Recruitment costs saved due to retention		<b>10,000</b>
<b>Total benefit per apprentice</b>	<b>71,587</b>	<b>197,000</b>
<b>Net benefit per apprentice or trainee (cost-benefit)</b>	<b>18,787</b>	<b>132,200</b>
<b>Net benefit including drop out costs of apprentices</b>	<b>(7,613)</b>	<b>99,800</b>
<b>Cost Recovery after 1 year of work</b>		<b>92,187</b>
<b>Benefit Cost Ration incl. drop out</b>	<b>0.9</b>	<b>1.8</b>

## **Summary**

The ROI reveals for the apprenticeship offered in Foodworld in Bangalore, that training investments could be recovered even during the training period. Since Foodworld needs to make human resource development as a priority area to be able to further expand, Foodworld should further focus on how to effectively recruit, train and retain apprentices and bring down the attrition in order to avoid expensive external recruitments at higher levels. Focus on expansion of apprenticeships for freshers, as planned, completely makes sense. Given the difficulty to recruit apprentices, the enterprise might explore ways to intensify collaboration with other training providers and the government in the vicinity to increase the status, awareness and attractiveness of apprenticeships so that more students will come forward and apply for apprenticeships. Possibilities could be career guidance and job fairs or organizing awareness campaigns in schools and ITIs to increase the image of apprenticeships. Another possibility could be that a group of enterprises supports the government in setting up, in a public private partnership, an online portal with apprentice vacancies, which also provides career guidance and pro-actively approaches and encourages students in schools and through social media networks to join apprenticeships as a viable and attractive career opportunity.

## **5.5. Case Lemon Tree Leisure Valley in Gurgaon**

The Lemon Tree Hotel Company was founded in September 2002 and currently owns and operates 24 hotels across India. Lemon Tree is one of India's fastest growing chains in upscale business and leisure hotels in India. The winner of several social, environmental and best hotel awards caters to a diversified customer segment. With a strong focus on high service quality and human resource development, the company was able to attract and retain a highly motivated and professional staff base over the years.<sup>60</sup>

Lemon Tree has a strong vision on sustainability and social responsible business and follows a 'triple bottom line' (Planet, People and Profit) through its sustainability initiatives. One of the guiding principles of Lemon Tree Hotels is that the company exists first and foremost for the well being of its employees, the community it operates in and society at large. The Group undertakes various initiatives to achieve these objectives, ranging from directly supporting and purchasing tribal crafts and products from poor and remote communities in Madhya Pradesh to their major intervention, which is disability inclusion. As an equal opportunity employer, Lemon Tree Hotels ensure accessibility for people with disability and regularly hires differently abled people, particularly from BPL backgrounds (100% speech and hearing impaired) since 2007. Currently, over 6% of all employees in Lemon Tree (130 people) are differently abled, while the group targets 10% and increases this number to 250 people by end 2013-14. The group has received several awards for their efforts of disability inclusion.

The current staff strength across India is 3000 employees. In the case of the independently managed and run Lemon Tree Hotel Premier, Leisure Valley in Gurgaon, there are 110 employees, of which 95 are regularly employed. It has a flat organizational structure: a small management team, incl. heads of departments, which account for 30 people, while 60 people are skilled employees, apprentices/trainees and 15 helpers and cleaners.

### ***Addressing Skills Shortages through Training and HR Development***

The Lemon Tree Leisure Valley in Gurgaon faces shortages at entry level and at the semi-skilled, lower executive level. To meet the skills gaps at all levels and to ensure that staff is professional and motivated, the Group has developed a longtime partnerships with an external training cum recruitment

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<sup>60</sup> For details, see <http://www.l檬ontreehotels.com/about-us.aspx>

agency, Headstart, which identifies training needs and delivers employee development accordingly. The enterprise takes advantage of the hotel's network structure, and can, therefore, optimize the training resources.

The enterprise prefers to recruit freshers and builds their capacities, while working in the enterprise. Therefore, recruitments are made at entry levels in nearby schools and campuses for both, prospective apprentices (ATS) and trainees (diploma in hotel related streams). The Leisure Valley hotel faces significant difficulties reaching out to students, and would like to recruit more candidates, who would be interested in getting into an apprenticeship, even though freshers (8<sup>th</sup>-10<sup>th</sup> Standard) are offered a stipend of 4,500 per month. The representatives hope that the Government strengthens career guidance in secondary schools and intensifies the promotional efforts, which would lead to closer linkages between enterprises and schools or ITIs. Currently, there are a total of 30 apprentices from different trades hired by 4 Lemontree hotels in Gurgaon. The Lemontree Leisure Valley hotel currently has 4 apprentices: 2 cooks, 1 house keeping and 1 clerk. They would have hired an apprentice for carpentry, electricians and stewards, if they had been available. The enterprise looks at various options to recruit freshers and currently explores other government training schemes under the Indian Ministry of Human Resource Development, which encourage enterprises to provide vocational training to 8<sup>th</sup>/10<sup>th</sup> pass students from backward communities and poor economic background. It is planned that after their certification, students will be absorbed on the payroll as trainees for 1-2 more years, before they start as associates.

ATS Apprentices directly report to the heads of the technical departments who oversee the overall training process and implement the rotation of the apprentices. Once a week, apprentices have theoretical classes, which are jointly coordinated with the Apprenticeship Department of the Government. These classes follow the GOI curriculum as per the Apprentices Act. The training usually begins with an intensive classroom based training before they start training on the job. Dependent on the trades, they rotate within the department and therefore have different mentors with whom they work on specific assignments. A library within a dedicated classroom provides an important resource to complement practical knowledge gained from demonstration and intensive mentoring during application. The company feels that in most cases, students are ill prepared to join workplaces and do not have the required soft and communication skills for the jobs. Consequently, Lemon Tree puts a major emphasis on developing soft skills, loyalty and communication skills besides ensuring a high level of technical skills. From the beginning, apprentices are included in the very regular team meetings and planning and therefore, receive regular feedback from their mentors and heads of the department, which is reported to the management.

### ***Career Pathways for Apprentices***

The enterprise puts a lot of efforts on developing and retaining a professional workforce. Each hotel has its own HR and training professionals, who regularly interact with respective heads of departments and individual employees on how existing processes and operations can be improved, and how their development perspectives and interest can be further expanded. The HR policy is strongly linked to assessment, performance systems and enable transparent career opportunities within the enterprise. The HR Department has a pipeline resource base for leadership, based on which promotions and training requirements for talent are being discussed. In comparison with industry standards where attrition rate is between 35-45%, the attrition rate of 5% at managerial level and 15% at the lower-middle level is on the lower side.

The Lemontree group prefers hiring young people and training them according to their requirements as a part of their expansion plans. They provide employees with internal career progression and opportunities and encourage them to take on additional responsibilities and leadership functions. Dependent on the trade, ATS apprentices train for 2-3 years, pass their exams and get absorbed as

associates by the hotel itself where they underwent the apprenticeship. The same job of an associate is offered to a diploma holder or trained and certified professional (e.g. cook, electrician etc.), after a training of 1 year in a specific trade. For all trades, this step is usually accompanied by an immediate wage increase of 55% (7000 INR/month). Initiative and interest in further training allows associates to further progress quickly to higher levels. The enterprise takes pride in referring to numerous cases, where apprentices and young diploma holders progressed to managerial levels who are by now as young as in their early 30ies. Similarly, till date, all apprentices have been retained across all departments.

### **Returns from investments**

In Lemon Tree Leisure Valley hotel, apprentices in all trades earn about 4,500 INR per month for 3 years in the case of cooks and clerks and for 18 months in the case of housekeeping. An experienced employee is paid above market rates and earns in the case of a cook app. 168'000 INR, in the case of a clerk 151,000 INR and in housekeeping 134,000 INR per annum. The company, as shown in the table below, spends an average of 504,200 INR for each cook and 402,100 INR for clerk apprentice, while expenditure for the shorter training period amounts to 292,700 INR for housekeeping respectively. While during the first 12 months, the benefit generated by the apprentices is minimal with 20% of the productivity of an average skilled employee in the case of cooks and clerks and 30% in the case of housekeeping respectively, the apprentice's contribution increases to 40% of a skilled employee during the second year and 60% in the third year in the case of cooks and clerks. In the case of housekeeping, the apprentice contributes 60% for the last 6 months of the apprenticeship. <sup>61</sup>

The Lemon Tree Hotel Premier, Leisure Valley in Gurgaon recovers training investments within all three trades during the apprenticeship period. In the case of housekeeping, where the training period has the duration of only 18 months, apprentices start generating a net benefit already during the first year (17,692 INR) and the training expenses are recovered within the training period. The overall net benefit is 123,483 INR, which means that for each INR invested, the enterprise generates 1.4 INR during the training period.

**Table 16: ROI for Housekeeping**

<b>Housekeeping (18 months apprentices)</b>	<b>Year 1</b>	<b>Year 2, 6 months</b>	<b>TOTAL Apprenticeship</b>
<b>Assumptions</b>			
Number of apprentice who drop-out	0	0	
Apprentice salary (CTC INR p.a.)/person	54,000	54,000	108,000
Salary of Fully Experienced Worker (CTC INR p.a.)	168,000	184,800	352,800
Charge out rate for of fully experienced worker/hr	256	382	
No of hrs worked per annum	2,674	1,337	4,011
Apprentice productivity (% of skilled workers)	30%	60%	
<b>COSTS</b>			
<b>Supervision costs (per apprentice or trainee)</b>	<b>81,000</b>	<b>29,700</b>	<b>110,700</b>
<b>Additional training costs per apprentice (INR)</b>	<b>107,000</b>	<b>75,000</b>	<b>182,000</b>
<b>TOTAL COSTS PER APPRENTICE</b>	<b>188,000</b>	<b>104,700</b>	<b>292,700</b>
<b>Total benefit per apprentice</b>	<b>205,692</b>	<b>210,491</b>	<b>416.183</b>
<b>Net benefit per apprentice (benefit-cost)</b>	<b>17,692</b>	<b>105,791</b>	<b>123,483</b>
<b>Benefits/ Cost Ratio</b>			<b>1.4</b>

<sup>61</sup> It needs to be mentioned that in the case of hotels, it is even more difficult to measure productivity than in manufacturing. It is therefore an approximation, based on which the enterprise assesses output and performance of a particular department and related to that of an individual employee.

In the case of the 3-year long apprenticeship for cooks, the enterprise starts recovering expenses during the 2<sup>nd</sup> year and generates a net benefit for the entire training period amounting to 376,667 INR, or gets a return for each Rupee invested of 1.7 INR.

**Table 17: ROI for Cooks**

Cook Apprentice (3 years apprentices)	Year 1	Year 2	Year 3	TOTAL Apprenticeship
<b>Assumptions</b>				
Number of apprentice who drop-out	0	0	0	
Apprentice salary (CTC INR p.a.)/person	54,000	54,000	54,000	162,000
Salary of Fully Experienced Worker (CTC INR p.a.)	168,000	184,800	203,280	556,080
Charge out rate for of fully experienced worker/hr	256	262	289	
No of hrs worked per annum	2,674	2,674	2,674	8,022
Apprentice productivity (% of skilled workers)	20%	40%	60%	
<b>COSTS</b>				
Supervision costs (per apprentice or trainee)	54,000	44,550	34,650	98,550
Additional training costs per apprentice (INR)	127,000	122,000	122,000	371,000
<b>TOTAL COSTS PER APPRENTICE</b>	<b>181,000</b>	<b>166,550</b>	<b>156,650</b>	<b>504,200</b>
Total benefit per apprentice	137,128	280,654	463,079	880,861
Net benefit per apprentice all (benefit-cost)	(43,872)	114,104	306,429	376,661
Benefits/ Cost Ratio				1.7

Similarly, in the case of clerks, they start generating positive returns after year 2 and recover the entire training expense within the training period with a net return amounting to 408,761 INR or generating 1.9 INR for each Rupee invested.

**Table 18: ROI for Clerks**

Clerk Apprentice (3 years apprentices)	Year 1	Year 2	Year 3	TOTAL Apprenticeship
<b>Assumptions</b>				
Number of apprentice who drop-out	0	0	0	
Apprentice salary (CTC INR p.a.)/person	54,000	54,000	54,000	162,000
Salary of Fully Experienced Worker (CTC INR p.a.)	151,200	166,320	182,952	500,472
Charge out rate for of fully experienced worker/hr	256	262	289	
No of hrs worked per annum, apprentice	2,674	2,674	2,674	8,022
Apprentice productivity (% of skilled workers)	20%	40%	60%	
<b>COSTS</b>				
Supervision costs (per apprentice or trainee)	72,000	49,500	39,600	121,500
Additional training costs per apprentice (INR)	107,000	102,000	102,000	209,000
<b>TOTAL COSTS PER APPRENTICE</b>	<b>179,000</b>	<b>151,500</b>	<b>141,600</b>	<b>472,100</b>
Total benefit per apprentice	137,128	280,654	463,079	880,861
Net benefit per apprentice(benefit-cost)	(41,872)	129,154	321,479	408,761
Benefits/ Cost Ratio				1.9

With 100% retention during and after the training, when all apprentices start as skilled associates with an entry salary of 7,000 INR, the investments have certainly let to very positive outcomes for the

enterprise, and with a significant and continuous wage premium increase in the following years of an average 20% every 18 months for apprentices as well.

### **Summary**

The ROI reveals for all the apprenticeship trades offered in Lemon Tree Leisure Valley Hotel in Gurgaon, that training investments could be recovered even during the training period. Since the Lemon Tree group has an investment focus and emphasizes the importance of human resources as critical part of their expansion plans, avoiding expensive external recruitments at higher levels and focus on expansion of apprenticeships for freshers, as planned, completely makes sense. The enterprise might explore ways to intensify collaboration with other companies and the government in the vicinity to increase the status, awareness and attractiveness of apprenticeships so that more students will come forward and apply for long-term apprenticeships. Possibilities could be career guidance and job fairs or organizing awareness campaigns in schools and ITIs. Another possibility could be that a group of enterprises supports the government in setting up, in a public private partnership, an online portal with apprentice vacancies, which also provides career guidance and pro-actively approaches and encourages students in schools and through social media networks to join apprenticeships as a viable and attractive career opportunity.

## **6. Application of ROI to Larger Surveys: What to Keep in Mind**

### **6.1. Preparation and Sampling**

While preparing a survey, it is critical to keep in mind that ROIs differ significantly between trades, industries, and regions. Given the diversity of trades and to save costs, many countries opt for a limited selection of trades when undertaking surveys to start with; it should be noted that most studies highlight that, while it is possible to draw general conclusions at national level, it is difficult to capture all variations within each trade due to often small sample sizes taken for each trade.<sup>62</sup>

*Surveys are expensive and time consuming! So, while preparing for the survey, the Government, jointly with the social partners should clearly define the scope, size and number of trades to be included in the survey.* It is also important to decide on who should benefit from such a survey. Trade specific reporting, provided the sample size is big enough, can be of interest to industry associations too. The choice of trades might also be decided based on industries, which employ the largest proportion of workers. Another criteria could be the fastest growing trades with the highest employment creation potential. These will then be the criteria based on which the study will be undertaken and where representativeness can be monitored.

To start with, it is advisable to use existing enrolment data of apprentices, which are regularly collected at state and national level by the DGTE, when enterprises register their apprentices. During the sample selection process, it might be difficult to identify employers who hire apprentices in trades with a relatively small workforce. Further to ensure an adequate representation, it might be advised to approach a higher number of SMEs. As it is the case in any survey, the results are based on averages across all employers and may not necessarily reflect the costs and benefits of apprenticeship training on an employer-by-employer basis.

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<sup>62</sup> CFA (2009)

Although the costs associated with apprenticeship training are generally quantifiable, the benefits are more difficult to measure and often based on more subjective data. The questionnaire attached is designed to capture qualitative measures of the benefits derived from apprenticeship training; however, it should be noted that these are based on employers' subjective assessments.

## 6.2 . Optimising Response Rates

International experience suggests that the return rate of filled out questionnaires will not be very high and will be significantly lower in the case of SMEs. Learning from the field-testing, it is expected that completing the survey questionnaire can be a challenge, not only because of the time that is required to complete the survey (one to one and a half hours) but also due to the level of detail of the information requested. As a result, extensive follow-up with enterprises is necessary in order to clarify and verify the accuracy of the information provided to optimize response rates. A mixed-mode survey approach should be used whereby employers might receive a mailed or e-mailed copy of the survey questionnaire.

It is suggested that enterprises are also given the option to complete part or all of the survey by phone. If time and budget allows, in-person interviews might also be conducted with selected enterprises (Annexure). Usually it is required to talk to the senior manager, HR in charge and in selected cases to the finance department.

## 6.3 Validation of Data in sector specific Round Tables

It is advisable, as it was done in Canada,<sup>63</sup> to facilitate a series of roundtables across the country with employers from different industries and trades to determine and validate the cost-benefit data and assess whether any significant costs and benefits had been missed out in the questionnaire. During these round tables, it is worthwhile to present benefit/cost analyses and verify charge out rates and productivity related data in more detail. This ensures that cost benefit data are accurately measured within a particular trade.

## 7. CONCLUSIONS

This study allows Employer organizations, Trade unions, the Government and other apprenticeship stakeholders to gain a more accurate and evidence based understanding of the benefits and costs of apprenticeship training, while using benefit cost analyses or the ROI method. Such information is valuable in dispelling myths that investing in apprentices reaps little financial and other benefit.

While there is a monetary advantage in hiring apprentices, there are also qualitative advantages, which are critical, as shown in the cases of Canada, Germany and Switzerland, where the majority of employers believe that "homegrown" journeypersons are more productive and are as employees "a better fit with the organization".<sup>64</sup> The five Indian case studies reflect a similar picture, which led enterprises to integrate apprentices and build a talent pipeline as part of human resources development into their business strategies. Most of the cases mentioned in this document have increasingly put

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<sup>63</sup> CFA (2009) and Hogarth, T. et al. (2012).

<sup>64</sup> CFA (2009)



efforts within the firm to attract apprentices and talent to be trained as apprentices. While the cases cannot be compared with each other, the table shows the overview of ROIs for each of the cases.

**Table 19: Overview of cases studies**

Company	Trade	No of apprentices	No app.	Net Benefit INR
<b>CASE 1:</b> <b>Bühler India, Bangalore</b> Food processing equipment Medium Sized Company	Technicians, mechanics	Fulltime 1 year ATS apprenticeship after ITI ATS Certification	23	<b>30,454 INR</b>
		Fulltime 2-year Swiss-Indo apprenticeship (SIVET) after ITI ATS + Swiss certification under SIVET	15	<b>-167,017 INR (full recovery after 1 year after training)</b>
<b>CASE 2:</b> <b>Classic Moulds &amp; Dies, Chennai, SCORE Member</b> Automotive parts Small Sized Company	Assembly, tool mechanic	ATS 1 year after ITI	4	<b>106 INR</b>
<b>CASE 3:</b> <b>EFD INDUCTION India, Bangalore</b> 1 tier supplier automotives Medium Sized Company	<b>Technicians , mechanics</b>	Fulltime 1 year ATS apprenticeship after ITI	5	<b>20,982 INR</b>
		Fulltime 2-year Swiss-Indo apprenticeship (SIVET) after ITI ATS + Swiss certification under SIVET	9	<b>-194,326 INR (full recovery after 1 year)</b>
<b>CASE 4:</b> <b>Foodworld, Bangalore</b> Retail, Medium-Large Sized Company	Sales executives	Fulltime apprentices ATS, freshers 6 months	19	<b>-7613 INR (full recovery within 1<sup>st</sup> year)</b>
<b>CASE 5:</b> <b>Lemon Tree Hotel, Gurgaon, Delhi</b> Hotel Medium Sized Company	Cooks Clerks	Fulltime apprentices ATS, freshers, long-term apprenticeship		
		Housekeeping (18 months)	2	<b>123,483 INR</b>
		Cooks (3 years)	2	<b>376,661 INR</b>
		Clerks (3 years)	1	<b>408,761 INR</b>

These are only a few case studies, based on which the ROI method has been pilot tested. Therefore these results are only indicative for employers' training costs and their rationale for apprenticeship training and therefore; they do NOT seek to be representative. This is particularly relevant for a country of the size and diversity like India, where surveys need to be of certain size so that general conclusions can be made. A follow up survey is therefore suggested based on which more conclusive interpretations can be made.

While these are encouraging examples in selected enterprises, it is however central to strategies on a priority basis through which policy interventions and incentives such practices can become norm and do not remain exceptions. Enterprises need to be sensitized about the business case of apprenticeships and how their skills gap challenges and future fears to loose competitiveness can be met, if they start grooming people within the enterprise. Such an approach is cheaper in the mid run and much better for the enterprise culture in the long run. With an increased number of well-trained apprentices available, the industry overall will benefit if enterprises start securing their growth by hiring and training and retaining apprentices.

Employer's organizations and their affiliated member organizations, Trade unions and the Government play an important role in the promotion and social marketing of apprenticeships, and ROI can be used as a convincing argument to engage more enterprises in quality apprenticeships. The management buy in is critical. ROI can also be used to decide on policy directions how to incentivize apprenticeships, which are more training and investment focused and therefore enhance the employability and wage premium of apprentices. Similarly, closer collaboration between Trade unions, Employers' organizations and the Government can strengthen career advice and counseling,

promote apprenticeships through job fairs and awareness campaigns to increase the status of apprenticeship and awareness about future perspectives amongst students.<sup>65</sup>

ROI surveys can contribute to the ongoing apprenticeship reforms as a tool that allows evidence based discussion amongst stakeholders how to optimize apprentices, effectiveness and outcomes and how to make the labour markets more youth friendly and sustainable. It is however important to use ROI together with other monitoring and tracking mechanisms, which ensure that apprenticeships lead to increased employability and wages of apprentices. There is evidence that if the apprentice is assured - through officially recognized certification - of an outcome that will bring increased earnings, employment and career possibilities he/she is more likely to accept a lower wage for the duration of the apprenticeship. This in turn helps employers to achieve a sustainable balance between apprenticeship costs and benefits. The status of apprenticeship will rise and attract well-qualified applicants.

One of the challenges to promote formal apprenticeships will be to overcome data shortages and support Governments and Social Partners in developing and strengthening institutions, which enable data collection that could establish the ROI argument. Empirical evidence can then support the argument that apprenticeships and training boost productivity and therefore ensure the sustainability of the enterprise.

*Employer Organizations:* can start the debate and get enrolled into regulation and protection of apprenticeships, showing that long term structured and investment-oriented apprenticeships have a mid-and long-term positive impact on productivity, retention and quality of apprentices. Qualitative aspects are important besides monetary benefits to employers. Even if apprentices are leaving the company, the transferability of their skills should be kept in mind, which ensures that other enterprises from the sector / industry can benefit. There is significant international evidence that poaching related arguments to not hire are short sighted. For Employers' organizations it is important to aim at the elevation of the overall skills and workplace related competencies of the workforce. Collective action by Employers to define the occupational skills content of apprenticeship and to influence the knowledge elements creates value both for employer and apprentice.

*Trade unions:* play a vital role in helping to ensure that students seeking training and employment opportunities see apprenticeships as a useful and lucrative route for employability. They also need to get stronger involved to ensure that apprentices' rights are safeguarded. This also includes achieving this balance by negotiating apprentice pay levels below those of fully-skilled workers, while at the same time insisting on high quality training with substantial elements of transferable skills and knowledge. They can start negotiating with employers about more pro-active hiring of apprentices, while using the ROI as a social marketing tool.

*Government:* Can use ROI as social marketing tool, build proactive connections with a larger community. The Government's role should be that of a facilitator and regulator, ensuring that social partners act in the interests of the general good, while organized employers are the crucial actors with respect to the survival of strong enterprise based training.<sup>66</sup> Governments also benefit from apprenticeship systems in many ways. If employers train and retain, it means that they share the cost of skills development and employment generation.

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<sup>65</sup> See for instance initiatives to promote apprenticeships in Mann A. et al (2012); National Education Practice Leaders (2012).

<sup>66</sup> Steedman, H. (2012)

International experience shows that, once legal safeguards are in place, employer engagement and constructive dialogue with worker representatives is the most fundamental condition for a successful apprenticeship system. It was found that when the social partners manage apprenticeship within a legislative framework that is democratically determined, benefits to young people are considerable and most effective in addressing youth unemployment.<sup>67</sup> Ideally, employer representatives should, jointly with worker organizations, drive the future of apprenticeships, while the Government should facilitate and oversee the process and ensure that quality and working conditions are maintained.

The ongoing Apprenticeship reforms and the relatively small size of the current system provide an opportunity to redesign the apprenticeship system and turn it into a modern and responsive system. These systemic changes also provide an opportunity to strengthen the involvement of social partners and relevant stakeholders, which is fundamental for any apprenticeship to be strong and responsive not only to industry needs but the employment needs of apprentices to enter the labour force confidently and shape the future generation as well trained and skilled employees.

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<sup>67</sup> Ibid.

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## 9. Annexure

### A1: Overview of semi-structured interviews and report structure

1. Description of enterprise
  - Background information about the enterprise and the current market positioning.
  - Description of existing organizational structure, labour force and respective qualifications
  - Description of skills gaps and shortages
2. HR policies and training provision
  - Addressing vacancies and skills gaps (average time to fill a position)
  - Recruitment practices (skilled/unskilled workers)
  - Recruitment of trainees/Apprentices?
  - Apprenticeship/Training type and trainees (informal or apprentices)
  - Reasons for hiring Apprentices
  - Contracts, assess compliance under Apprentices Act
  - Annual spending on Training and Apprenticeships
3. Delivery of Training and Apprenticeships
  - Modality (in-house, external, mix, school and work based training)
  - Trained staff availability
  - Certification links
4. ROI for Enterprises: to assess
  - Cost benefit per type of apprentice
    - i. ITI +1 year Apprenticeship ATS
    - ii. Long-term ATS Apprenticeships
    - iii. Other forms of Structured Apprenticeships offered within enterprise
  - Reduced induction costs as higher retention
  - Reduced recruitment costs to fill known vacancies
  - Higher productivity
5. ROI for Apprentices
  - Employability and retention within enterprise
  - Can one identify a wage premium
6. Brief Summary

### A2: Questionnaire

#### Questionnaire to Assess Returns from Investments in Apprenticeships

**ID Number:**

**Company name:**

**Contact name:**

**Telephone number:**

**Email:**

Note: Thank you for participating in this survey/case study. Your support to this study contributes to an ongoing

discussion on how Apprenticeship delivery can contribute more effectively to the ongoing efforts to expand and increase employability skills of the Indian workforce. If one trains it is also important to assess and monitor the training efforts and the effectiveness. Returns from investments into Apprenticeships and other forms of Training (ROI) has been a method used in many countries to establish the empirical evidence that investments into training and apprenticeships actually means business and makes business sense. Providing ROI information on Apprenticeships not only sheds a better light on the fact that apprenticeships as such can contribute to a win-win situation for apprentices as well as employers. It is also important that you provide us with your insight and real life experiences/challenges, when you hire apprentices and provide a feedback to the current apprenticeship system, and where changes might be required, so that you would be able to hire the appropriate candidates as per the needs of the enterprise. These questions are confidential and very enterprise specific information will be treated confidentially. The filling up of the questionnaire will require app. 1 hr and requires some specific data which might need to be filled up by the HR/Management team.

Thank you well in advance for your participation.

## I: Enterprise Characteristics

### 1. Size, type of firm

- Type and business description:
- No of employees:      **TOTAL:**      Regular:      Contract:

### 2. Please describe the current Situation:

- Business environment:
- Enterprise's position in the market etc:
- Company turnover:
- Current challenges faced by enterprise:

### 3. Occupational Structure of Enterprise (specify):

	Men	Women	Total	Average Attrition Rate
Management				
Professional/Skilled				
Line manager				
Supervisor				
Skilled Worker/operator				
Apprentice Fulltime (after 10 <sup>th</sup> Std.)				
Apprentice short term				
Other Apprenticeships provided, please specify				
Trainee after Polytechnic/Diploma				
Unskilled Worker (no formal qualification) and trained ion the workplace				

\* Please note that we are calling Apprentices as the fulltime and short-term apprentices formally registered under the Apprentices Act 1961 or formally engaged in other fulltime, structured apprenticeship, which results in a (nationally/internationally recognized certification). Trainees are new entrants who join the enterprise and undergo an on the job training without any certification at the end of the training period.

## II. HR/Policy, recruitment practices



4. How do you usually ensure that your workforce is skilled and competent, so that your company can respond to the market requirements?

	Always	Sometimes	Never
HR policy and train workforce according to individual training needs			
Provide Regular In-house training: meetings on monthly basis, motivational			
Finance external specialized trainers/company). (if for whom?)			
Finance external training courses (if for whom?)			
Other: please specify			

5. Where do you experience most serious skills gaps and shortages? (5 very serious, 1 no problem)

Management	
Production	
Supervisor	
Skilled, experienced shop floor employee/operator	
Shop floor employee/operator with limited experience	
Apprentice	x
Trainees with Polytechnic Diploma	
Unskilled Worker with workplace training/Helper	
Other functions, specify	

6. How do you fill your skills gaps in the enterprise? Please rank: 1 lowest priority, 6 highest priority)

- Externally recruit qualified people \_\_\_\_\_
- HR identifies potential and encourages them to participate in train workers on the job \_\_\_\_\_
- Recruit formal Apprentices so that in the long run, they provide the skilled workforce required \_\_\_\_\_
- Informal-on the job training of unskilled workers \_\_\_\_\_
- Have challenges filling my skills gaps \_\_\_\_\_
- Else:

7. On what basis do you recruit external qualified people? (multiple answers possible)

Apprentices:

- Certificate ITI \_\_\_\_\_
- Certificate ATS \_\_\_\_\_
- Diploma \_\_\_\_\_
- School leaving certificate \_\_\_\_\_
- No certificate, references \_\_\_\_\_
- Interview \_\_\_\_\_
- Practical demonstrations \_\_\_\_\_
- Assessments \_\_\_\_\_
- Else, please specify \_\_\_\_\_

8. Do you hire apprentices? (YES/NO) –

- If No, please go to -> Question 20

9. Did you recently have difficulties hiring apprentices? (1 answer only)

- Never, I always got apprentices \_\_\_\_\_
- Yes, I have always problems finding good candidates than earlier \_\_\_\_\_
- Yes, I have had some problems finding good candidates \_\_\_\_\_
- I gave up and have found other solutions (which are....) \_\_\_\_\_

10. For which trades/subjects do you provide apprenticeships? Traineeships?

- The following questions refer to the subjects and areas in which you offer apprenticeships.
- We have provided fields below for up to 4 apprenticeship subjects. If you provide more than 4 we would be grateful if you could input up to 4 in the following questions and list the remaining in the box provided below.

Subjects/Type of Apprenticeship	Nos	Duration	Highest level of educational background	% of apprentices staying with enterprise till they graduate	% of people staying with your company for 1 year after graduating	% of people are recruited & stay for more than 3 years after graduating

Gets same opportunities like graduate of hotel management or experienced workers.

11. How many on the job trainees (no ITI certificate, only 10 standard or even below) do you have?

\_\_\_\_\_

12. When do you hire trainees and when apprentices? Please explain.

\_\_\_\_\_

13. Why do you hire Apprentices? (Rank 10 being most important, 1 being least important, one number only one time)

Reasons	Rank 1-10
Value for money (cost- benefit is attractive)	
We can train them in the way of doing things how we need as these skills are not in the market	
We want to retain the best apprentices	
We want to avoid recruiting wrong staff	
We save recruitment costs	
We want to secure skills within the profession	
Need for young adaptable workforce	
The best way to learn	
Training staff and other staff are more motivated and organised	
Government requirements	

14. Have your apprentices signed a contract that complies with the Apprentices Act 1961?

- a. Yes \_\_\_\_\_

- b. If no: are they undergoing an informal apprenticeship/traineeships?, what type of contract do they have? \_\_\_\_\_

### III. Delivery of Apprenticeships

15. Training Resources: Kindly indicate for each of the apprentice/trainee category, what resources are available or how your enterprise delivers training.

Type of Training and Apprenticeship	Dedicated infrastructure	training	Trained and dedicated Staff/Instructors	We usually have external trainers providing training

Please specify \_\_\_\_\_

16. How do you structure Apprenticeships/Traineeships? Please indicate in percentage %

Subject	On the shop floor/OJT	Class-room	Separated training area
Fulltime App. Programme after 10 <sup>th</sup> standard pass under ATS			
Fulltime internal Apprenticeship not really linked to ATS			
Trainee/Diploma (Polytechnic/Engineering)			
Unskilled +OJT			

17. What methods do you usually apply during the practical training/training on the job/shopfloor?

Subject	GOI ATS (ITI)	Fulltime App. Programme (after 10 <sup>th</sup> standard pass)	Other Apprenticeship programme in-house	OJT for unskilled workers
Job-Sheets/workbooks				
Coordinated course work with practical / OJT				
Printed material				
Practice of production /jobs				
Project based assessments				
Shadowing/scaffolding of practices by buddies				
Mentoring				
Else				

18. Is your apprenticeship and traineeship training delivery linked to national certification?

Yes, always - \_\_\_\_\_

No

Sometimes; Please specify

19. What are the particular challenges in managing apprentices/unskilled workers undergoing OJT? Multiple answers possible.

Challenges	Apprentices	Unskilled workers undergoing OJT
Skills not adequate		
Work attitude, motivation		
Interest in learning		
Communication issues		
Reliability		
Academic skills not adequate		
Not independent		
No problem	<b>x</b>	
Else....		

As freshers with mentors, no issues, no attrition.

20. On an average, how long have apprentices, trainees and unskilled workers with OTJ stayed in your enterprise after completing the training?

- Apprentices: all not issues y
- Trainees with OJT: \_\_\_\_\_ years
- Unskilled workers with OJT: \_\_\_\_\_ years

21. Apprentices and trainees remaining in the enterprise after training, what jobs are they usually undertaking after 3 years? And what is the wage premium related to these jobs?

Type of Apprentices	Position after 3 years in enterprise	Wage premium (increase from starting salary after finishing training)
Apprentices ATS:		
Fulltime/long-term Apprentices:		
Apprentices ATS: Other Apprentices trained in-house:		
Unskilled workers with OJT		

22. Has your approach to apprenticeship training changed in recent years?

- Yes and if so how'? \_\_\_\_\_
- No

#### IV. ROI for Enterprises

These questions should be filled out independently for different types of Apprentices who undergo structured apprenticeship leading to recognized certification. You need to separate the Apprentices and fill up separate tables for each type of Apprentices. Tables deal with 1 apprentice, therefore, costs need to be divided by the number of Apprentices and calculated as per head expenditure.

APPRENTICES TYPE 1	(6 M )	Year 1	Year 2	Year 3	Year 4	Total
<b>Assumptions</b>						
Number of apprentice who drop-out without completing in particular function						
I Apprentice salary (CTC INR p.a.)						
Academy Apprentice salary (CTC INR p.a.)						
Salary of Fully Experienced Worker (CTC INR p.a.)						
**Final Charge Out Rate per hour for experienced worker (see below)						
No of hours productively worked per annum						
Apprentice productivity (% of skilled workers)						
<b>COSTS</b>						
<b>Supervision costs (per apprentice or trainee)</b>						
% of Training Manager's time spent training: no change over time for an apprentice trainee?						
% of Line Manager's time spent training						
% of Supervisor's time spent training						
Training Manager's Salary (CTC INR p.a.)						
Line Manager's Salary (CTC INR p.a.)						
Supervisor's Salary (CTC INR p.a.)						
<b>Additional training costs per apprentice/trainee (INR)</b>						
Costs of recruiting the apprentice or trainee						
Course fees, material costs						
Supervision/Instructor costs						
Costs for machines not fully utilized						
Apprentice or trainee salaries						
Additional contributions to Apprentices (uniform etc.)						
Administrative costs						
<b>TOTAL COSTS for training per apprentice</b>						
<b>Additional Costs incurred before joining enterprise</b>						
<b>Training benefits per apprentice or trainee (INR)</b>						
Apprentice's production contribution						
Savings on recruitment/induction costs for experienced employee						
Other Income (e.g. Government contribution)						
<b>Total benefit per apprentice (Benefit-Cost)</b>						

\*\*Defining Final Charge Out Rate for experienced employee/worker: Rate to be filled into table above (\*\*)

	y1	y2	y3
<b>Step 1: Define Labour Charge Out Rate for experienced Worker</b>			
<b>TOTAL Gross Annual working hrs (no days*hrs/day)</b>			
Minus No of leave x daily hrs			
Minus No of casual/sick leave x daily hrs			
Minus No of public holidays x daily hrs			
<b>No of working hours/annum</b>			
<b>TOTAL No of productive hours per annum (taking into account non-productive time)</b>			
Gross Salary Costs (CTC) for experienced worker/annum			
<b>Labour Charge out rate (CTC/Productive hrs)</b>			
<b>Step 2: Define Final Charge-Out Rate for experienced Worker</b>	<b>y1</b>	<b>y2</b>	<b>y3</b>
Labour Charge-out rate/hr			
Charge-out rate to cover your overheads (business expenses) incl. Profit margin/hr			
<b>Final charge-out rate/hr</b>			

## V. Reasons for not hiring Apprentices

You do not employ apprentices: Why not?

Reasons	Do not agree at all	Do not agree	Don't know	Agree	Agree completely
Not required/relevant in my business					
Benefit of Apprentices too small					
Prefer to recruit fully trained and certified people					
We prefer to train on the job/in-house					
We do not require skilled labor					
No apprentices available as per specific requirements					
No in-house training facilities in place					
Too expensive					
Too time consuming					
Too difficult to manage and plan, not enough work as too specialized					
We do not fulfill legal requirements of Apprentices Act.					
Not applicable under Apprentices Act. 1961					
Apprentices will anyway leave after they have been trained (poaching)					

### **A3: List of People contacted**

#### **Government of India**

Mr. Dinesh, Nijjevan: Director (SDI), DGTE, GOI, New Delhi

Mr. Satish Rang, Assistant Director: Policy Section Apprenticeship, GOI, DGTE, New Delhi

Mr. Rajendra Kumar, ITI and Ass. Advisor Apprenticeship, Gurgaon

Mr. Sandeep Kalyan, ITI and As. Advisor Apprenticeship, Faridabad

Mr. Sujit Kumar, ITI/ATS Advisor, Bangalore

#### **Companies**

Mr. G. Alawath, Assistant Manager Human Resources, Lemontree Premier Leisure Valley, Gurgaon

Mr. Ch. Kumar, CEO Skillsonics, Bangalore

Mr. K.C. Onkara Gowda, GM-Head of Manufacturing, Bühler India Pvt. Ltd., Attibele, Bangalore

Mrs. Poornima, HR Officer Classic Moulds and Dies, Chennai

Mr. J.P. Pradeep, Principal Consultant, Skillsonics, Bangalore

Mr. O. Peter, Recruitment Manager, Foodworld/Health and Glow, Bangalore

Mr. R.A. Ravindra, Ass. Manager- Tech. Training, Bühler India Pvt. Ltd., Attibele, Bangalore

Mr. K. Suresh. GM Accounts and Administration EFD-Induction Pvt Ltd., Attibele, Bangalore

Mr. G. Srinivasan, GM Group Finance and Accounts, CMD, Chennai

Mr. A.V. Venkatesh Kumar, Head of HR and Admin, Bühler India Pvt. Ltd., Attibele, Bangalore