Skill India

“Scope of Expansion of Vocational Training Partnership between India & Germany”

Economic and intercultural opportunities

for knowledge & workforce transfer

Figure 1: Skill India - labour.gov.in

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Skill India

“Scope of Expansion of Vocational Training Partnership between India & Germany”

Economic and intercultural opportunities

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By

Yvonne Julia Metzger

markets and more

Methfesselstraße 75

20255 Hamburg

PUBLISHED BY THE

CONSULATE GENERAL OF INDIA

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"India is witnessing the long pending overhaul in its skill ecosystem after ages. Harnessing and honing skills for our youth today will build the New India of our dreams tomorrow. Empowerment of youth from different sections of society can be driven by ensuring skilling, up-skilling and re-skilling at every stage in their lives.

Rajiv Pratap Rudy, Union Minister of State (I/C) for Skill Development & Entrepreneurship, Government of India.

DISCLAIMER

This study was conducted by the author on behalf of the Consulate General of India, Hamburg in an independent manner. The views expressed herein are those of the author and do not necessarily represent the views of the Consulate General of India, Hamburg or the Government of India.

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LIST OF SYMBOLS & ABBREVIATIONS

ACMA Automotive Component Manufacturers Association of India
AICTE All India Council for Technical Education
AITT All India Trade Test
AICTE All India Council for Technical Education
ATS Apprenticeship Training Scheme
BIBB Bundesinstitut für Berufsbildung
BVC BOSCH Vocational Training Centre, Bangalore
ATS Apprenticeship Training Scheme
BBiG Vocational Education and Training Act
BiBB Federal Institute for Vocational Education and Training
BMZ Federal Ministry for Economic Cooperation and Development
BVC Bosch Vocational Centre
CII Confederation of Indian Industry
CSTARI Central Staff Training and Research Institute
CTS Craftsman Training Scheme
DAAD Deutscher Akademischer Austauschdienst
FEPs India - Foreign Education Providers Bills India
FICCI Federation of Indian Chambers of Commerce and Industry
GDP Gross domestic product
GEC Infosys Global Education Centre
GIZ Gesellschaft für Internationale Zusammenarbeit
GTZ German Technical Cooperation
IHK Industrie- und Handelskammer (Chamber of Commerce)
ITC Industrial Training Center
GOI Government of India

GOVET	German Office for International Cooperation in Vocational Education and Training
IGTC	Indo-German Training Center
ITI	Industrial Training Institute
MSDE	Ministry of Skill Development and Entrepreneurship
MKI-DS	Mubarak Kohl Initiative-Dual System
MOLE	Ministry of Labour and Employment
MoU	Memorandum of Understanding
NCERT	National Council for Education Research and Training
NSDC	National Skill Development Corporation
NTTE	Nettur Technical Training Foundation
NCVT	National Council of Vocational Training
NTPC	National Thermal Power Corporation
NVTI	National Vocational Training Institute for Women
NVTS	National Vocational Training System
SC	Scheduled Castes
SIMO	Skill India Mission Operation
ST	Scheduled Tribes
PPP	Public Private Partnership
VET	Vocational Education and Training

FOREWORD BY THE CONSUL GENERAL

India is the 3rd largest economy in Asia and based on economic research it will become the 3rd largest economy in the world in 2022. The trade volume between Germany and India has risen to € 17.4 billion in 2016, while Germany belongs to the Top 10 investing countries in India. The transfer of knowledge and goods between India and Germany dates back to the 15th century. Both countries have always been important economic partners for each other. Over the years, the development of similar socio-economic global visions has gained attention, especially since the 1980s and 1990s, when India's development was characterized by increasing industrial power. Numerous Indo-German MoUs, programmes and initiatives in all sectors are an obvious sign for a very high level of attention in both countries regarding a common future. The "Make in India" campaign has been actively promoted by Prime Minister Shri Narenda Modi. The leading requirements within the main business fields of, for example, medical devices, pharmaceuticals, IT, renewable energy, transport, smart cities, construction, automobiles and textiles, are concentrated on a skilled workforce, as well as on an education system with high quality standards and potential for further growth.

German and Indian governments, global institutions as well as German investing companies, Indian domestic enterprises and local affiliates have taken on responsibilities and initiatives in the field of vocational education. Further innovation in educational development is one of the key factors for the future of economic business opportunities that are both practical and socially responsible. Both India and Germany depend on distinguished education economies due to their significant level of common trade and global industries, and especially the emerging Indian market.

Against the backdrop of these developments, it is my pleasure to present this report on Skill India "Scope of Expansion of Vocational Training Partnership between India & Germany" - Economic and intercultural opportunities for knowledge & workforce transfer, authored by Yvonne Julia Metzger, CEO of the Indo-German company "markets and more" in Hamburg. The study is a result of collaboration between "markets and more" and the Consulate General of India, Hamburg. The intention is to provide insights into the educational scene in India with a strong focus on future opportunities and recommendations for Government, German companies, as well as governmental and non-governmental institutions and policy makers from both sides.

I would like to thank the author for her efforts towards this fruitful collaboration and look forward to continued partnership. The publication of this report was made possible under the Market Expansion Activities initiatives of the Ministry of External Affairs.

Madan Lal Raigar
Consul General
January 2018

PREFACE BY THE AUTHOR

In 2017, India's economy is still the fastest growing economy in the world. Global players, mid-size and small companies, as well as growing start-up companies, are profiting from a new wave of liberalization due to the politics of Prime Minister Narenda Modi. Nevertheless, obstacles mainly in the fields of infrastructure, education and international barriers need to be tackled. Companies both in India and Germany presently face a need for a well-educated and intelligent workforce. A highly-trained, motivated and creative workforce is a key factor for economic growth. Therefore, the Government of India (GOI) has initiated various initiatives within the last few years: "Skill India", is an initiative for educating and skilling young and adult workers in order to fulfil the gap between the supply side of the labour markets and the existing level of education; "Make in India Mittelstand MIIM", is an initiative with the aim to transform India into a global design and manufacturing hub through partnership programmes and German companies investing, which started successfully in 2014. India needs to provide fruitful ground and access to a functional education system on the subcontinent. This brochure aims to add a little stone to the path for a strong Indo-German relationship – socially and economically, and with a focus on the field of education economics.

Why does the subject of Skill India have such a tremendous meaning to all of us? To emphasize, I would like to refer to Jean Drèze and Nobel prize laureate Amartya Sen (2014), who have pointed out the following reasons: 1. Development and social improvement, 2. Economic options and chances for employment, 3. Give a political voice to the civil society, including the poorest, 4. Solve society problems and improve societal inequality, 5. Human rights with a glance to awareness of health through education, 6. Claim of rights through education, 7. Empowering women (achieving lower fertility rates and childhood mortality through education), 8. Weakening of class differences, 9. Supporting creativity. These holistic answers should be included in our thoughts and further procedures and steps.

India needs to tackle a dual challenge regarding highly-trained, quality labour and high non-employment rates. Thus, the skill development issue is a continuous project for all players: the GOI, institutions, companies and the workforce itself. The country is changing rapidly and consistent efforts are being made towards the expansion of vocational training partnerships between India and Germany. Initially, visions of a holistic life-long learning society were factors in the transformation of the Indian education ecosystem. Socio-economic activities and governmental initiatives aimed to create large employment opportunities. However, it is an enormous task to provide access all over the

country due to the huge size of the subcontinent and one of the world's biggest populations. On the other hand, relatively high analphabetic rates and a high proportion of workers in the agricultural sector remain a major area of concern.

A positive experience from the past few years shows that India is developing steadily and fast with an increasing modern view on society and the economy. Subject to the condition that continuous efforts will be made with a focus on education infrastructure and a strong and tolerant international framework for networking, India will be able to fill the gap between industry requirements and the level of skills in its workforce. India can accomplish its missions only if economic and intercultural opportunities are implemented – we should start to intensify the Indo-German knowledge and workforce transfer more flexibly and dynamically.

I would like to take this opportunity to thank Mr. Madan Lal Raigar, Consul General of the Consulate General India in Hamburg, and Mr. Parminder Singh Bandechha, Commercial Officer, for offering me the great opportunity to add my ideas, vision and practical advice to the subject of Indo-German collaboration on the education system in India and to address companies in Germany and India, as well as policy and decision makers in both countries. Moreover, I would like to thank Mr. Johannes Strittmatter, Project Director of GIZ in India for his valuable information, experience and knowledge transfer covering 60 years of successful Indo-German cooperation and beyond. I am looking forward to continue the common path of further development and implementation on Skill India with full engagement and to contribute in the long-term to reinforcing the bilateral relations.

Yvonne Julia Metzger

January 2018

EXECUTIVE SUMMARY

The guiding idea of the brochure is to strengthen the economic relationship between India and Germany, based on progress in the development of vocational training in India, in order to support Government and German companies on the one hand, and the Indian workforce on the other hand. This analysis aims to create a Win-Win-Situation for both India and Germany in terms of education, economic investment and further immersion of the Indo-German bilateral relations. The findings demonstrate several measures and recommendations, as well as illustrating visions of future development of vocational training in India. From a visionary perspective, the study suggests fundamental changes in terms of new-thinking by German companies, and mainly in Indian politics, economy and society.

As a mental framework for the moment, keywords like the change of demographic progress, eruptive changes and demands in socio-economic aspects (e.g. skills shortage, globalization, internationalization, changes of working times and places), as well as digitalization and further progress towards a societal migration within the German working environment are considered. They need to be kept in the back of one´s mind while reading. The vision is to provide some support for German companies in India, as well as for Indian companies in the field of education, in order to enforce a sustainable and long-term social and economic growth on site in India and off site in German companies. Moreover, this brochure gives new ideas and options for political acting.

The challenge of this brochure is to offer new information to the public as well as to the private sectors at the same time. The brochure aims to find answers to the following questions: Is it possible to implement the German dual VET system in India? If yes, how far can measures be implemented? If no, which other measures can be taken by the Government of India, or its institutions and companies? How can India learn from Germany? How can German companies investing in India as well as Indian companies profit from and get access to the Indian workforce? Who can guide and give advice? How far can both countries benefit from each other? What are the requirements that need to be fulfilled to intensify the exchange and transfer regarding vocational training? What can be done together by governments, institutions and enterprises to create mutual benefits?

The target group in Germany consists of so called “Mittelstand” companies, as well as huge global players. Some of them have already established locations in India successfully, some of them are busy making investment decisions in India, while others are not completely aware that India offers some of the most interesting economic and investment chances in the future on a global level. The target group in India are companies and institutions that can provide credible business and service partners for German companies. Furthermore, the governments of India and Germany are addresses in this study.

The objective of this study is to give an overview of the current situation of the Indian Vocational Education System (VET), to analyse the Indian workforce potential and to reflect about initiatives and measures taken. Not least, constructive criticism as well as creative ideas linked to smart recommendations complete this study. With Skill India – there are many opportunities on this fascinating sub-continent that already encourage the Indo-German relationship – and there remains much to learn in order to sustain a prosperous long future for the nation of India.

Finally, this study comes to the conclusion that there is wide scope for expansive collaboration on Vocational Training Partnerships between India and Germany. Mainly infrastructural and networking innovations can ensure effectivity, both in economic as well as in socio-environmental terms. The long history of successful Indo-German collaboration and recent approaches for common initiatives provide strong pillars for mutual benefits in both countries.

1. Introduction

Without any doubt, India is one of the fastest growing economies in the world. Several scientific sources are convinced that India is even the fastest growing nation worldwide. According to the IMF (International Monetary Fund), in 2015, economic growth in India was for the first time since 2009 even higher than in China. Society, economy, landscape and politics underlie fundamental changes – all of them contribute substantially to the fast growing and unique diversity of India.

Education plays a major role in a fast-growing nation. A highly qualified and motivated workforce is indispensable for economic growth in a nation like India. Governmental achievements within the last few years have contributed to the continuous development of the educational system. Nevertheless, important changes and further improvements remain on the to do list. One of them is the subject of vocational training. In addition, according to the Department for Foreign Affairs, Germany is India's most important trade partner within the European Union. Germany is traditionally an export nation, and in 2017, the German export rate to India rose to 19%. Several German companies have already understood the importance of India as a trading partner and growing magnet of the world economy. As such, the demand for qualified workforce in both countries is huge. In India, 250 million people are ready to join the job market. Therefore, the industry cluster in education has to expand on a large scale and credible Indian partners are available. As a conclusion, players representing these Indian requirements, who can interact with the German VET business model, could provide a major key for future economic growth in both countries.

Generally, opportunities for Indo-German collaboration in the field of vocational training should be seen in the context of Indian cultural behaviour and workforce motivation. The cultural structure in India with a very strong significance on the family is often treated like a framework for economic decisions. First, it is well-known that the family is one of the most important parts of Indian culture. Accordingly, in addition to the importance of social backgrounds in India, the brochure keeps in mind the value of the Indian family as a basic setting.

Both subjects are worth evaluating in detail because they provide strong pillars for successful development of German businesses in India and the Indian education system. Indian culture is strongly linked with Indian business, probably even more than in Germany. German companies need to understand that the success of doing business in India depends on cultural knowledge. Secondly, it is important to understand that part of the young Indian workforce aims at working in an industrial country abroad, while the other part is close to family and cultural structures and prefers to work in India. For German companies investing in India it is important to understand the differences in the type of workforce, as well as the options resulting from this motivation. Hence, a lack of workforce in

Germany can be filled by an Indian workforce that has been trained by the firm. Similarly, a lack of German professionals who want to work in India in the long-term can be filled by an Indian workforce. One of the objectives of the brochure is to make a substantial contribution regarding the intensification of Indo-German workforce-related skill development and to provide a glance at new chances that have not yet been properly established by Indo-German business cooperation. The hypothesis of this study is that a stronger development and implementation of the field of vocational training can lead both countries to more effective business patterns. Not least, German and Indian businesses will profit from this model. The study treads a path through an integrative, intercultural future model for Indo-German cooperation in VET.

The analysis aims to build a bridge between German companies and the Indian workforce, as well as supplement requirements regarding the social sense, costs, future demand and intelligent investment. Investigation of meaning, needs and requirements with Indian institutions, as well as with leading German companies, will give additional answers to the stated questions. German companies can use this brochure as an information source and guideline for an easier way to find a good and qualified workforce in India with regard to selected sectors. Government and industry can pick up recommendations and ideas for process management.

Chapter 2 of the study explains the school system of both countries briefly. Principles of vocational training will be discussed, as well as apprenticeship training modules. The first insights to obstacles and opportunities for investment are provided.

Chapter 3 deals with the definition of the workforce situation in India and the question of how far can the German dual VET model be implemented. Moreover, with focus on the above-mentioned essential knowledge about working together with Indian employees, this chapter includes a SWOT-Analysis of the Indian workforce and outlines the economic and intercultural potential of the Indian workforce. Indian young people and the Indian workforce in general have very special characteristics which differenciate them in a number of ways from typical German principles of operation. This fact is very useful because German companies especially will be able to understand better what kind of strengths, weaknesses, opportunities and threats they can expect from Indian employees. Hence, they can learn more about their advantages for doing business in India.

Chapter 4 aims to give answers to the following questions: What is the recent development of vocational training in India? What kind of structures do Indian training centres have? Not least, this chapter gives several Best-Practice-Examples about German companies and associations who have successfully invested in India and who profit from VET centres in India.

Chapter 5 evaluates in detail further recommendations and measures for government, institutions and companies. It provides answers to the following guiding questions (in addition to the questions

mentioned in the Executive Summary): Who can contribute in what extent to improve the VET system in India? What arguments can be found for making the acting players think of the next effective steps towards a well-run system of vocational training in India, especially with a view to the German dual VET model? What are the next practical steps that can be done by German companies interested in investing in India or in intensifying existing training centres in India? How can a general consciousness for the importance of vocational training be created? Finally, Chapter 5 provides a conclusion for how the existing bridge between India and Germany can be expanded in the future.

This brochure does not aim to highlight and sum up the large number of successes in different political fields and sectors that India has undertaken in the past, nor does it aim to highlight the phenomenal progress that India has made in economic terms, and neither does it want to repeat all the positive (and highly appreciated) steps that India has made within the last few years with its development towards being one of the most important players, not only in Asia, but also on a global level. These facts are already highlighted in existing studies, press releases and websites (Chapter 7).

In contrast to other studies, this paper challenges: a) to give a very recent insight into the situation in 2017 of VET in India, b) to illustrate new ideas for measures that can be taken by the government, institutions and enterprises, c) to initiate a vision for the present and the future and, d) to be a helpful guideline and provide fundamental practical steps, useful contact addresses and references for further research and information (Chapter 6).

The objective is to provide a true pool of ideas and, moreover, give food for new thoughts by brainstorming to set in motion some mind-set changes in all the acting players in order to achieve a better network and communication within the educational system in India. In addition, the great opportunity of future demand and socio-economic vision of Indo-German business collaboration will be highlighted. A common vision and image of India will underline the idea and development of economic and intercultural opportunities for knowledge & workforce transfer between India and Germany.

As India is embossed by Mahatma Gandhi and his peaceful way towards a just and equal society, one of his quotes “Be the change that you wish to see in the world”[1] may be reflected in business behaviour to guarantee the holistic demand for a long-term fruitful education system with benefits for all acting players, including the civil society as a major part.

[1] https://www.goodreads.com/quotes/24499-be-the-change-that-you-wish-to-see-in-the, retrieved 31st October 2017.

2. Indian and German vocational education system

2.1 Structure of Germany's dual system of vocational education and training (VET)

In Germany, children start their early education in the kindergarden with age of 3 years on average. Normally, children stay in the kindergarden until they are 5 years old, with some of them, depending on their date of birth, until they are 6 years old. The next step within the educational system is the elementary school with four classes. This part is also called the primary field of education. In the last year of elementary school, teachers and parents decide whether to send the children to Secondary General School (Hauptschule), Intermediate Secondary School (Realschule) or grammar school (Comprehensive School or secondary school, Gymnasium) from classes 5 to 10 and 5 to 12 (grammar school), respectively. Most of the children going to grammar school pass their final exam (Abitur) in class 12. Some of them, as well as most of the students having attended Secondary General School and Intermediate Secondary School, leave grammar school after the 10th class and start a vocational training (Betriebliche Ausbildung, dual system, In-company-training and part-time vocational schooling) or take three more years at Special upper Secondary Schools (Fachoberschulen, Fachgymnasium, Specialised Grammar School classes 11 to 12, Grammar School Classes A-level). Standards are written down in the German Vocational Education and Training Act (Berufsbildungsgesetz, BBiG). Finally, the young people who have not decided on a vocational training start to study at a University of Applied Studies (Fachhochschule) or a University (Universität). At a German university, people first finish their Bachelor´s (3 years, 6 semesters). After having the Bachelor´s degree, they can decide to proceed to a Master´s degree (2 years, 4 semesters).[2] Finally, some graduates choose to undertake a doctorate.

As a major principle of the German dual VET model, vocational training combines theory and practical work. For each vocational training course, training regulations can be found, that might vary in some parts depending on the Federal States. The duality implements that the trainees spend almost 1-2 days of their time in school and 3-4 days in the company. Sometimes, trainees have blocked scheduling at school for around 8 weeks and fulltime in the company afterwards. The content and general tasks include general education, as well as theoretical expert knowledge. The final exam is called the journeyman's examination and is organized by the German Chambers of Commerce (IHKs) or the chambers of handicraft. On a national level, all trainees have the same final exams, and thus the results are comparable.

[2] Before 2010 (Bologna), people had to choose at German Universities to do a Diploma or a Master of Arts, Master of Law or Master of Science, depending on the subject. Both the Diploma and Master of Arts are equivalent to the current Master`s degree. In comparison to the system before the educational reform with the Bachelor´s and Master´s, the current system is based on modules (duty and choice) that follow a uniform European quality system with so called ECTS (European Credit Transfer System) points.

The German system has some other types of schools, but within this brochure there is no deeper focus on them.[3] Next to the classical dual vocational training (duale Lehrlingsausbildung), an advanced vocational training (berufliche Weiterbildung) is offered. Germany has special vocational training centres (Berufsausbildungszentrum).

Within the last few years in Germany, discussions have taken place about the common meaning regarding the most effective choices for future employment. Discussions include on the one hand a view that the academic way (final exam at grammar school followed by a university degree) offers the best opportunities for young people to get a good and secure job. On the other hand, especially against the background of the German shortage of a skilled workforce (Fachkräftemangel), a stronger focus on solid vocational training is requested by some political groups and experts. The discussion is laid out impressively in the German business magazine, Brand Eins in September 2017.[4] The core of the discussion is that the vocational system is not appreciated enough, and that society prefers a university degree. In India, the vocational system is similarly not appreciated enough, but for other reasons: a) lack of awareness of educational opportunities, and b) lack of standardization. As a medium of communication, open discussions are important in the development of VET, especially in India.

2.2 Overview of the Indian vocational training system

Indian children have to go to school at least for 8 years, according to the Right to Education Act (2009). The school system is still oriented in terms of the social origin of the children. As per data of the GOI and NSDC, already by 2007, the Indian higher education system has grown to be the largest in the world with 378 universities, 8064 colleges and a faculty strength of approx. 0.5 million, with an estimated enrolment of 14 million students."[5] According to DAAD, in 2016, 757 universities had approximately 11 million students. In addition, the country counts 38,000 colleges. The common and well-known scientific scheme for the education and training system in India is shown below for the sake of completeness:

[3] Detailed information can be found on the website of the BIBB (Bundesinstitut für Berufsbildung): www.bibb.de
[4] https://international.brandeins.de/special-reports, retrieved 31st October 2017.
[5] GOI, NSDC (n.d.), Vol.8.

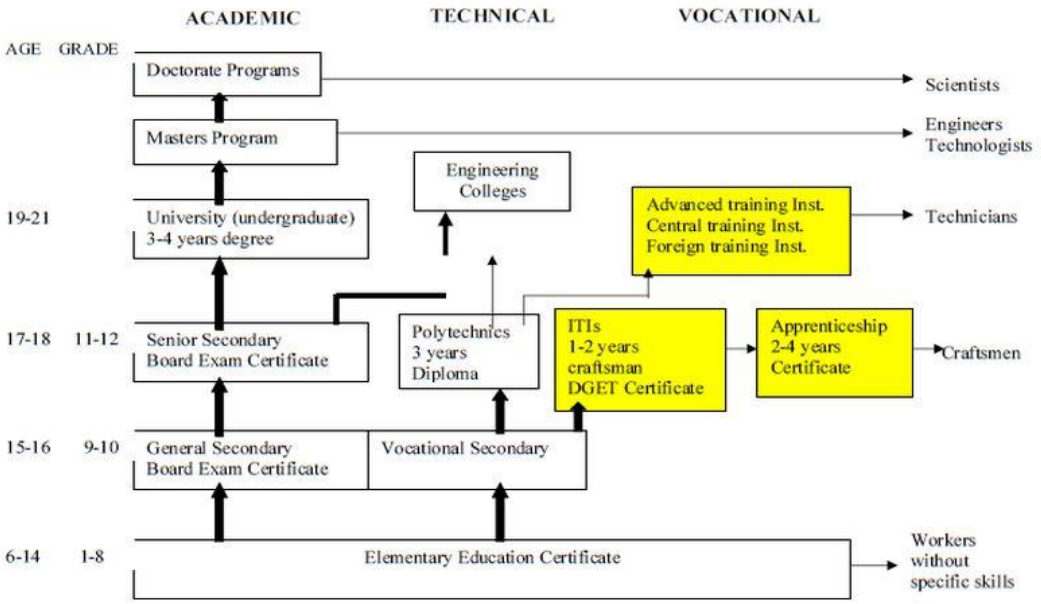

Figure 2: Skill development: education and training system in India.

Source: World Bank

Some vocational education policy frameworks like the Craftsman Training Scheme (CTS) and the Apprenticeship Training Scheme (ATS) exist.[6] Amongst others they are implemented in the ITIs, but they are not comparable with the German VET system schemes, although the ITIs have similar structures as the German vocational schools. The CTS is predominantly implemented externally, outside the companies, whereas the ATS plays a role as an internal training scheme for companies. The Apprenticeship Training Scheme (ATS) is implemented on a state level. Trainee apprenticeships have to fulfil the scheme requirements that were implemented with the Trade Apprentices Act in 1961. Companies are (compared to Germany) very free to design their internal VET modules. Therefore, individual standardization, in the sense of internal training schemes, can be found inside the companies. For example, in-house training systems and "train-the-trainer" systems work well as the companies have developed internal training schemes, which have content depending on two basic company related conditions: 1. Level of skill of the trainee, 2. (human) training resources inside the company. The following image shows clearly an example of a "train-the-trainer" initiative:

[6] As stated earlier, this brochure does not want to repeat existing documentation about several parts of the Indian VET system in detail. Thus, the interested reader can find more information about CTS and ATS here: CTS: http://dget.nic.in/content/innerpage/craftsmen-training-scheme-cts.php, http://vikaspedia.in/social-welfare/skill-development/schemes-for-skill-development/craftsmen-training-scheme, ATS: http://dget.nic.in/content/innerpage/apprenticeship-training-scheme-ats.php, retrieved 31rd October 2017

Figure 3: "Train-the-trainer" initiative of UWDMA

Source: uPVC Window and Door Manufacturers Association

In conclusion, standardization in the German sense of public harmonization of comparable curricula and final certificates cannot be found due to missing mechanisms and the direct connection between public formalities and the private sector. Therefore, a gap has emerged in the last few years - which forms an interesting starting point for the need to intensify communication between the public and private sectors. As companies have stated in empirical studies, the introduction of a common certificate in the public sector is needed. In Germany, the preparation of uniform documents belongs to the competence of the public sector. Thus, it is recommended not to change this hierarchical system either regarding the Indian solution for standardization of documents.

2.3 Implementation, opportunities and outlook

The effect of vocational training for companies is enormous, in Germany as well as in India. According to a survey of the Indo-German Chamber of Commerce, in 2015, the Indian market is one of the key markets for German companies, as the annual turnover of the top 30 is approximately € 15 billion. More than 400,000 jobs in India have been provided by German companies which is a strong reason for the GOI to decrease barriers and to shape a fruitful ground for further investments. Without any doubt, the historic cooperation between India and Germany is a key factor for economic success and mutual benefits. Nevertheless, a reduction in bureaucracy and easier access for German companies and institutions to the Indian market is required. Indeed, 58% of German companies in India mention bureaucracy as a major barrier. Thus, continuity in the regulatory progress by the GOI is a key factor with a direct impact on the investment behaviour of international prospects for India. Furthermore, economic opportunities between India and Germany can be expanded rapidly, especially in the field of VET. The process between decreasing obstacles, new investments and better conditions for

optimized knowledge transfer is simple, yet fundamental for the future of VET partnership in India.

Figure 4: Process of optimized ground for investment and VET Partnership

Source: Author's own analysis and diagram

Turning to Germany, the ratio of students and trainees of the total population is higher than in India. The following table illustrates clearly the gap in skilled workers in India: it shows the ratio of the population of the educational sectors (university and VET), with parameters compared between Germany and India in 2016. It reveals that the ratio of population in Germany studying at university is more than three times higher than in India. In contrast, the ratio of population in India in VET is nearly zero. Thus, the need for further implementation and expansion of the VET system is extremely high.

	Germany	% of population	India	% of population
Total population	82,670,000		1,324,000,000	
Ratio at university	2,803,916	3.4	11,000,000	0.8
Ratio at VET	1,321,197	1.6	36,000	0.0002

Table 1: Ratios at university and VET of German and Indian populations in 2016.

Source: Author's own analysis and diagram, based on data from the World Bank, DAAD, Statista and IMOVE

As per the data above, the GOI aims to increase the total number of trainees (36,000) to 500,000 in 2022. The investment sum is estimated at € 1 billion (Rs 1,000 crore). The Ministry of Skill Development and Entrepreneurship will pay approximately € 240 (Rs 18,000) per apprentice to the companies participating in the initiative.[7] This is a first positive step which uses parts of the German dual model.

3. Indian Workforce setting

3.1 Potential of Indian workforce – economic view

This chapter highlights three aspects: 1. Skill requirements, 2. Gaps in the skilled workforce, 3. Meaning of informal sector.

[7] http://www.imove-germany.de/cps/rde/xchg/imove_projekt_de/hs.xsl/indien.htm?news-type=&content-url=/cps/rde/xchg/imove_projekt_de/hs.xsl/28649.htm retrieved 22nd October 2017.

The Indian population was estimated as 1.32 billion people in 2016. According to a study by the National Skill Development Cooperation (2013-14), there will be an additional need for 560.46 million skilled workers by 2022. Mehrotra et al. (Bertelsmann Stiftung, 2014) have calculated that the "number of employees entering the workforce each year in India would be 2 million and the projected labour force in 2022 would be around 580 million". Other studies have evaluated that 500 million people need to be skilled in VET by 2020 (in 2016, only 4.5 million of the workforce could be trained!). The literacy rate in India in 2015 covers approx. 80% of the male population, but only 62% of the female population, though the trend is growing. Meanwhile, the unemployment rate during the last three years stands at around 3.5%. However, approx. 50% of the population are still working in agriculture, while approx. 20% are in industry and approx. 30% in the service sector (2013). Conversely, approx. 52% of the service sector contributes to BIP (industry 30%, agriculture 18%). Benchmarking studies such as cluster studies published by the NSDC are putting the spotlight on the human resource requirements. They refer to skill gaps in the period between 2017 and 2022, and the total figures in 2022. The results are summarized in the table below:

Human Resource Requirements for 2017-2022 and skill gaps		
Branch	**Employment in 2022 (millions)**	**Employment Growth in 2017-2022 (millions)**
Agriculture	n/a	n/a
Automotive (incl. components)	n/a	2.7
Banking & Financial Service Insurance	4.25	1.01
Beauty & Wellness	14.27	6.88
Building, Construction Industry and Real Estate	76.55	17.15
Construction Materials & Building Hardware (Cement)	1.4	n/a
Construction Materials & Building Hardware (Iron and Steel)	0.95	n/a
Domestic Help	17*	10.88
Education and Skill Development Services	n/a**	n/a
Electronics & IT Hardware Industry	8.94	2.70
Food Processing Sector	11.38	2.65
Food & Grocery	24.44	3.08
Furniture and Furnishing Industry	11.29	4.90
Jewellery Retail	3.14***	1.64***
Handlooms and Handicraft	17.79	3.86
Healthcare Services	2.28	2.7
IT & ITES	5.12	1.28
Leather & Leather Goods Industry	6.81	2.39
Media and Entertainment	1.3	0.65
Organized Retail Sector****	55.95	10.84
Pharmaceuticals	3.58	0.98

Private Security Services	11.83	3.02
Telecommunications	4.16	1.31
Textile & Clothing Industry	n/a	n/a
Tourism, Travel, Hospitality & Trade Sector	13.44	3.76
Transportation, Logistics, Warehousing & Packaging	28.40	5.41

* Tight estimation. Estimation for current workforce: 6.0 million.
** 6.7 (2013-14) current employment
*** Gems & Jewellery
**** incl. Food & Grocery, Health & Personal Care, Home Improvements, Leisure, Lifestyle, Auto Sales, Jewellery Retail, Food Services

Table 2: Human Resource Requirements for 2017-2022 and skill gaps

Source: Author`s own table, based on data of NSDC and ULKIERI

The table points out the enormous potential of education-related skill measures required in India. Subsequently, the analysis of gaps needs to be focused with a recommended strategy. According to studies of the Federation of Indian Chambers of Commerce and Industry (FICCI), the gap between industry requirements and the level of skills of workers is huge. Nearly all companies located in India face skill-related problems. Hence, the education offered is not aligned to the needs and requirements of the companies. Study results show that the education has a higher ratio in theoretical parts and lower ratios in practical and technology oriented curricula. However, in India as well as in Germany, the companies require more practical experience and complain about the lack of practical experience. Although public-private-partnerships with a focus on practical curricula in Germany are well established, often the matching skill level is missing. Thus, the gaps occur noticeably due to lacking contact points and communication between schools, industry and government. Chapter 5 pays attention to the cooperative strengths of the dual model in Germany and options for India to learn about. The serious shortage of a skilled workforce offers an innovative capability for Indo-German relations. Therefore, according to GOVET (2016), the dual VET needs to be strengthened and regulated in both countries (legal framework). A delegation of (not regulating) authority should be given to the stakeholders (chambers, employers, labour unions, government institutions). An open access to dual VET is a major point. In Germany, the system includes a so-called transition period for those students who have not finished their degrees yet. Due to high drop-out rates in India, the transition period needs to be enforced. Not least, the institutionalisation of the dual VET system is essential for further research, monitoring and development, according to economic pathways. Stronger relationships between schools and companies should be introduced in Germany, as well as in India, to create a stronger network and to prepare application-oriented knowledge more intensively. A processual

example to show further implications of practical skills is given below:

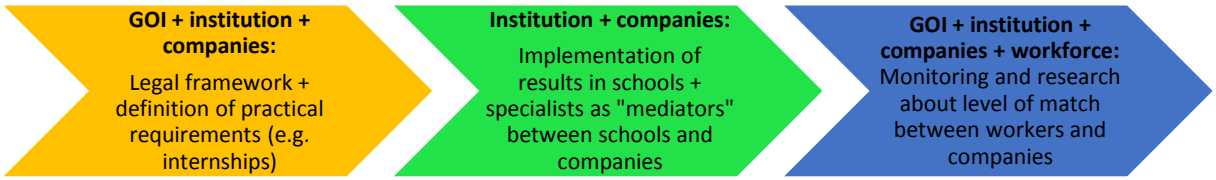

Figure 5: Process of further implications of practical skills as part of the dual VET system

Source: Author's own analysis and diagram

Despite some conflicting discussions, this study focusses shortly on the differentiation of the socio-economic structure in India because it is necessary to offer a holistic approach to the development of the Indian education ecosystem. According to the statistics of the World Bank in 2016, the Scheduled Castes and Scheduled Tribes make up to 1/3 of the total population. Although "the unincorporated sector in India contributes about 45% of the national income, which, by far, surpasses the corporate sector's contribution of around 15%, its contribution remains unacknowledged"[8] and at the same time most of the poor people work in the unincorporated sector, the need for VET structures within this sector is also interesting for the GOIs initiatives – and valuable for the private sector as the entrepreneurial skills are highly developed within the SCs in India. At the same time, the increase of India's middle class and the linkage between their ratio in the higher educated workforce and their ability to spend money can be seen as a key factor for rising consumption. The GOI is aware of the fact that both socio-economic complexes are important as the following quote underlines:

Figure 6: Prime Minister Modi at the inauguration of the development initiative in Varanasi, 22nd September 2017.

Source: www.narendramodi.in/category/quotes

[8] Vaidyanathan, Prof. R. (2014) India Uninc. P. 15.

3.2 Potential of Indian workforce – SWOT analysis

One idea of Skill India is to develop and implement the best education training to the national workforce. India has a very young population: in 2016, the average age was approximately 27 years old. According to the Fifth Annual Employment and Unemployment Survey (2015-16), the youth unemployment rate was calculated at 13% (18-29 years) compared to the official total unemployment rate of 5%. The enormous size of the young population is a strength and advantage for the supply side of the labour market due to the high availability of possible employees. Companies from both nations have the opportunity to fill their gap in terms of number of workers. Apart from hard skills on the educational level, the experience shows that the soft skills of the Indian workforce are an attractive focus for German companies operating in India. Some years ago, the fluctuation of skilled workers was very high in India and companies who had invested in their workers were suffering. Motivated workers have become a factor in growing awareness. The rate of fluctuation recently declined because companies were able to take advantage of special characteristics of Indian employees. For further improvement of economic stability and investments in India, especially for SMEs and new firms on the market, a better understanding of the characteristics of Indian employees is necessary. Therefore, as a special chapter of this brochure, selected soft strengths, weaknesses, opportunities and challenges of India's workforce characteristics are summarized in the following SWOT analysis.

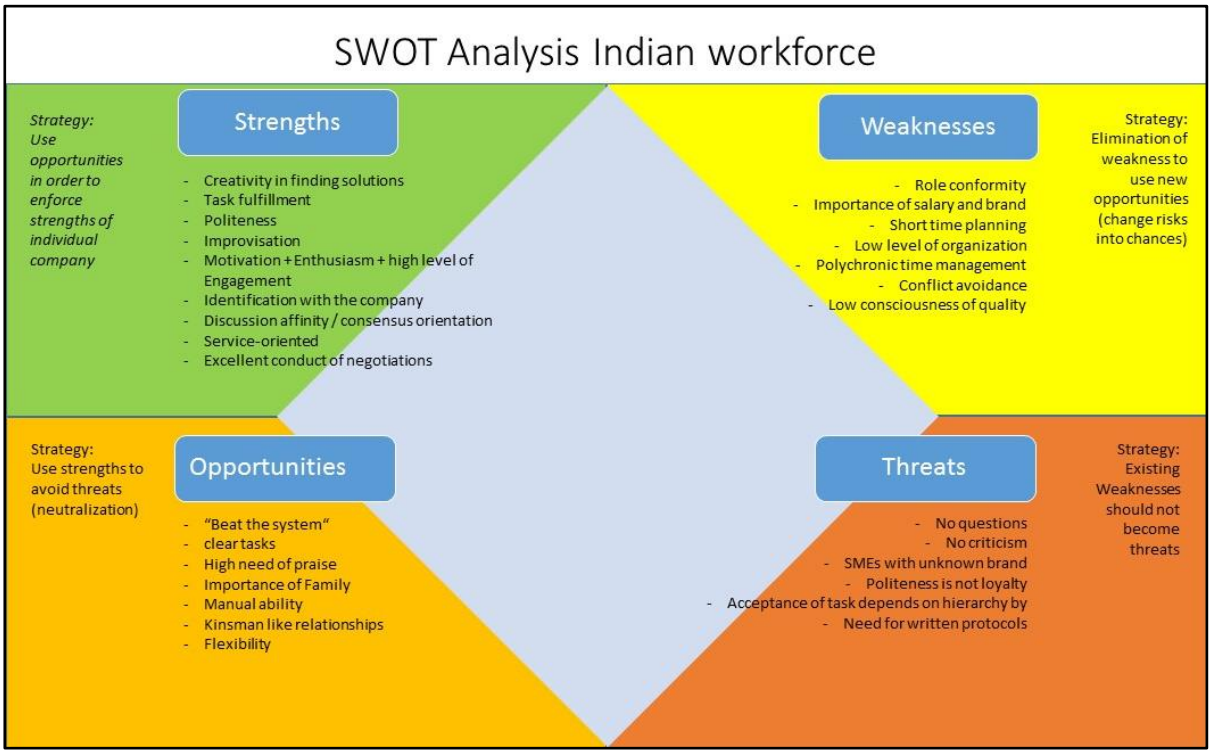

Figure 7: SWOT analysis of soft Skills of the Indian workforce

Source: Author's own analysis and diagram

In summary, the strengths and opportunities of Indian employees are focussed on engagement, service orientation and manual abilities. Despite statements in several studies about abilities lacking to solve comprehensive problems, Indian employees show high skills in basic solution finding ("beat the system"): problems occurring due to logistic and systemic infrastructure can be solved by Indian employees in daily business. Sometimes, it is time consuming, but be it a technical problem or a missing contact, in India people are very creative in finding technical, logistical or other necessary solutions by using their networks or manual abilities. The workforce is able to bypass rules and circumstances in order to find a suitable solution. Nevertheless, curricula have a limited focus on analytical competences. In particular, German companies who do not have a strong network in India yet can profit immensely from this strength. Moreover, Indians show excellent business skills (conduct of negotiations and highly diplomatic), politeness towards higher hierarchy (a belief in hierarchy), talents for improvisation, ability to act very quickly, high motivation to learn and to work, strong identification with employer company, spontaneity, very open for discussions (consensus-oriented), talents for multitasking, strong in customer contact and most of them are strongly orientated in official behaviour (stamps, business cards, process of business (as well as private) events, ceremonies, etc.). The importance of family includes having strong relationships between the company and family, especially in B-to-B business. In addition, some companies in India have experienced that the relationship between the company and employee is closely linked and that the role of the human resource department is fundamental for coordination between work and the family.

Weaknesses and threats that should be taken into consideration in India are major role conformity (especially to the function and tasks given), short-term planning, polychronic time management and strong conflict avoidance. A marked orientation towards popular company brands results in less loyalty for small companies with unknown brands (next to the salary this is one reason for high fluctuation rates). Working processes sometimes face a non-fulfilment of tasks due to missing communication by the Indian workforce: Indian employees do not necessarily ask questions actively in case of incomprehension or problems. They are not able to work with direct criticism and oral commitments (internal and external communication) are not binding (instead written minutes of meetings or notes are required).

In order to avoid weaknesses and threats, simple measurements like individual meetings, diplomacy, clear organization charts, binding timelines, short project phases and written protocols are helpful. A detailed further evaluation would go beyond the scope of this analysis. Nevertheless, awareness of and tolerance towards intercultural differences are a major part of the Indo-German workforce transfer of methodologies and, thus, need to be seen as a backdrop to developments and innovations in the VET system. To close the chapter, the factual potential of Indian motivation and enthusiasm as

stated above is underlined in the following graphic: Indian workers are most satisfied with their job. According to the study, they are confident and appreciate the intellectual challenge of work. The last point can be titled as “Thirst for knowledge” and will be evaluated in Chapter 5.

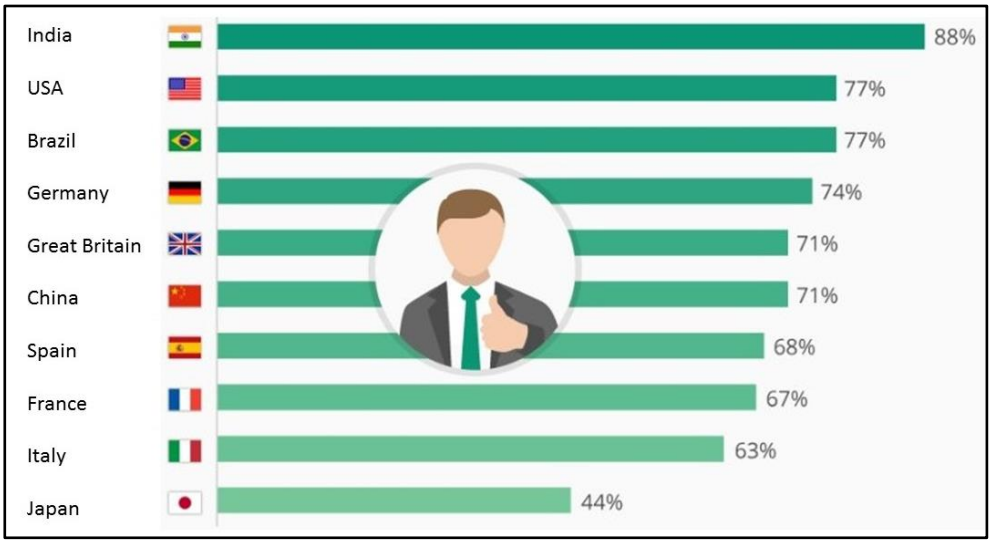

Figure 8: Proportion of workers with highest satisfaction in their jobs in selected countries (%)

Source: Manager Magazin, Statista, 2016.[9] Translated by author.

4. Cooperation between India and Germany in VET

4.1 Political and institutional framework with opportunities for industry

Chapters 2 and 3 were focused on the education system, as well as the workforce potential and characteristics as a factor of interest for German companies. In the following, the study highlights existing German and Indian approaches and fields of interaction, mainly in the institutional sector. The public framework in India is different from Germany and, thus, requires different approaches. However, the Indian solution might include parts of the German dual system because it has strong pillars with very effective channels compatible with the Indian socio-economic structure.

In advance, we address the organization and responsibility between the acting players. In a broad sense, the main addressees in the field of VET in India can be identified as following: 1. The GOI (and as a partner: Government of Germany), 2. Governmental and Non-Governmental Institutions, 3. Private sector in India (both German and Indian companies), 4. Employees and students, 5. Schools, education providers, further service providers. Mutual understanding between these addressees has

[9] http://www.manager-magazin.de/unternehmen/karriere/zufriedenste-arbeitnehmer-wo-die-frohen-schufter-wohnen-a-1095514.html retrieved 22nd October 2017.

the highest priority. A short extract of acting institutional players in the field of VET points out the diversity:

- Industrial Training Institutes (ITIs)
- Bertelsmann Stiftung in Bangalore
- BOSCH Vocational Training Centre (BVC), Infosys Global Education Centre (GEC) (private sector)
- Nettur Technical Training Foundation (NTTF), T. S. Srinivasan Centre for Vocational and Advanced Training by Sundaram Group (CVAT), Solar Energy Training Center by Schneider Electric India Foundation (SEIF) in cooperation with Sri Sri Rural Development Program (SSRDP) Trust[10] (private sector)
- Automotive Component Manufacturers Association of India (ACMA)
- Karnataka Skills Council
- Confederation of Indian Industry
- Federation of Indian Chamber of Commerce and Industry (FICCI)
- All India Council for Technical Education (AICTE), e.g. MoU with Microsoft
- NCERT National Council for Education Research and Training
- GIZ, iMOVE, Chambers of Commerce, Indo-German Chamber of Commerce, embassies, consulates
- National Council of Vocational Training (NCVT)
- National Thermal Power Corporation (NTPC)
- National Vocational Training Institute for Women (NVTI)

VET is a recipe for economic success in India (same scenario as in Germany). In more generic terms and depending on the input of the GOI, as well as the private sector, the skill level of the individual in India has a positive influence on the whole power of the nation of India and a fruitful ground for benefits can be created. In order to be able to take advantage of the VET system, investment should not be done solely by politics but the private sector needs to recognize its tasks at the same time.

In stating that the practical working experience (as part of the dual system) needs to be improved in India, one should not forget that basic knowledge such as English skills (India has more than 22 different languages and, thus, English is a must for (business) communication), with mathematics, geography, sociology and technical basics, should be an essential part of the VET in India. Curricula must be developed based on that thesis. While the responsibility regarding the theoretical part

[10] https://www.imove-germany.de/cps/rde/xchg/imove_projekt_de/hs.xsl/indien.htm?news-type=&content-url=/cps/rde/xchg/imove_projekt_de/hs.xsl/Indien-Trainingszentrum-fuer-Solarenergie-eroeffnet.htm, retrieved 12th September 2017.

(curricula, standardization, organization, other VET system-related issues) has to be taken by the GOI as stated in Chapter 2.2, the demand for more practical experience (technical knowledge, company-related requirements, working manner) cannot be fulfilled without investment by the industry. Participation of the supply side of the labour market in the development of curricula is necessary, but the final standard has to be done by the public sector (with support from governmental institutions like GIZ).

Excursus to German perspective about the political framework

In Germany, the education system is organized on a sovereign national level with several operational options on regional and local levels. The system is calibrated countrywide on the public level, as opposed to India, where we face a lack of calibration on the national level (see Chapter 2). In fact, it is difficult to compare the level of education of young people between the different 29 states in India. Thus, India needs to attain a calibrated VET. In 2013, the German government established GOVET as a coordination point in order to implement strategies for international collaboration in VET. GOVET is a central contact address for actors in Germany and foreign countries. Since 2011, GOVET has been working together with the Indian partner institute CSTARI (Central Staff Training and Research Institute) in Kolkata. CSTARI was founded in 1968 by the Indian Ministry for Labor with technical and financial support from the German government. The main tasks of CSTARI are the development of curricula and research on VET with support from GOVET (being a part of BIBB, a research and competence center with a focus on national development of VET and part of the BMBF). Since 2011, in total five curricula for different professional fields were modernized by CSTARI with support from BIBB/GOVET. Moreover, a common procedure for the development of curricula was defined. It should be a standardized process and include industry within the board. Moreover, GOVET supports the Indian partners by building up structures for professional research. Within workshops, special knowledge about organizational development and specific business fields were offered for various research subjects and ”Capacity Building” was carried out.

Not least, iMOVE (International Marketing of Vocational Education) was founded in 2001 as an initiative of the BMBF, in order to improve internationalization of institutes for education and further education, as well as to promote international business relations of German training providers. Today, iMOVE is a working department of the BIBB. German education providers support iMOVE with extensive service offers regarding the exploitation of international markets. Using the slogan "Training - Made in Germany" in India, it aims to establish a win-win-situation through mediation of German competence partners. In conclusion, GOVET and iMOVE are good bilateral examples for Indo-German collaboration and how India can learn and profit from the German public. framework for the dual education system.

Coming back to India, a stronger involvement of companies and institutions in the communication process with the GOI is highly recommended. One of the major institutions, acting as mediator between the public side and supply sector, is the GIZ. The communication model between the GOI, GIZ and companies illustrates the active role that GIZ performs as a mediator between official and industrial partners. In order to produce the highest possible outcomes of communication, GIZ acts between the different ambitions of government and industry.

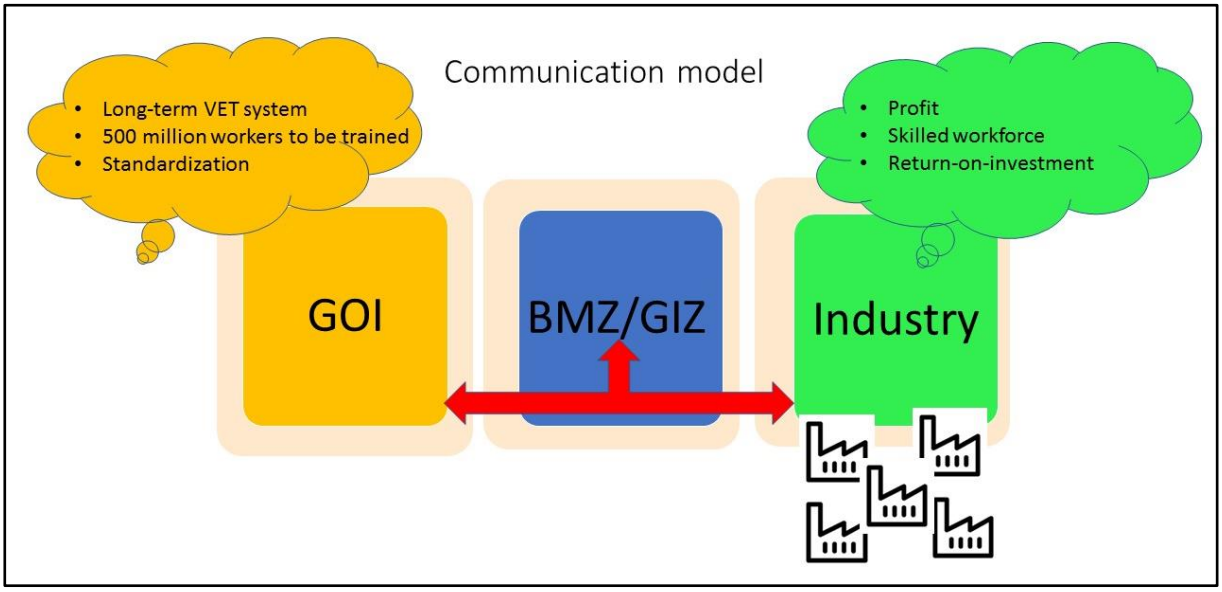

Figure 9: Communication model between GOI, BMZ/GIZ and companies

Source: Author's own analysis and diagram

The main focus lies on small clusters within the industry branches, because the possible outcome is higher (facing competitive aspects plus return on investment) as stated for example also by Mehrotra et al. (Bertelsmann Stiftung, 2014)[11]. Additionally, incentives for stakeholders can be given by the GOI through well-trained teachers because it saves costs on the supply side of the labour market (e.g. special machinery or equipment)[12]. Not least, well-trained and motivated trainees increase the return on investment for companies, as stated in Chapters 3.2 and 5.1, Figures 20 and 21.

In fact, the German economy loses around 50 billion Euro in turnover per year regarding skill shortages. Within the last few years, several initiatives were taken to develop the Indian VET system. Prime Minister Modi has established the question of education under the key word of "Skill Development". In 2014, the first "Indo-German Conference on Skill Development" took place in Delhi.[13] India is facing a hard-competitive economic situation - and global pressure (mainly in Asia) will increase in the future.

[11] Bertelsmann Stiftung (2014), p. 27.
[12] Konrad-Adenauer-Stiftung, FICCI (2015), p. 29.
[13] https://www.bibb.de/govet/de/52710.php, retrieved 4th November 2017.

Therefore, a fast and strategic improvement of the VET has to be one of the key areas in politics. At the same time, companies have to face that they need to invest on their own in order to pre-empt skill shortages and declining growth rates. A new consciousness of financial and practical investment needs to be set up. This is a huge difference to Germany, where the necessity for private investment is relatively clear (without evaluating existing discussions between the private sector and government in Germany in this study).

In order to operate successfully in the education system, several German companies in India have created individual in-house-training-centres. Most of these companies are global players like Siemens, BMW, Mercedes and Infosys. In addition, small and medium-sized companies have individual training centres. But due to a lack of a financial investment playground, in-house-training centres are more established by large companies. In Germany, SMEs are involved with the VET system much closer. There is a need also to provide better access to the VET system for SMEs in India. The GOI should pay the costs of initial VET measures to SMEs to support them, especially in the inaugural phase. The cluster approach is needed for SMEs.

For companies in India it is important to ensure a return on investment for their time and financial expenditure on vocational training measures. The idea is to build a bridge between education (skilling India) and outcome (return on investment on the supply side of the labour market). In fact, governmental involvement could be constructed as a temporary support for a defined period of time. Primarily, the public side can support the supply sector, for example during the first three to six months to build up an in-house-training center, using support from education providers or initiating network-relationship management clusters. Moreover, branch competition between firms in India can hinder and prevent firms from creating special industry clusters. Thus, financial support for industry clusters may increase the willingness to set up a cluster on the supply sector. This becomes even clearer with a view on the expenditure for network, administration and equipment at the beginning.

As in Germany, India has a central federal education system. The NCERT (National Council of Educational Research)[14] offers support and guidance. Via NUEPA (National University of Educational Planning and Administration)[15], which is subordinate to the Ministry of Education, a more intensive coordination is fulfilled. The University Grants Commission (UGC) shall ensure quality standards. Additionally, it is recommended to initiate a state-industry cluster on a regional level. These clusters need to be guided by the federal states themselves with an orientation towards national guidelines.

Within the last few years, several initiatives have been undertaken within the framework of the Indo-German collaboration.

[14] www.ncert.nic.in, retrieved 30th September 2017.
[15] www.nuepa.org, retrieved 30th September 2017.

For the last part of this chapter, 12 activities are surveyed in a chronological sequence (without any guarantee of completeness) to stress the work and progress of VET measures in India.

Between 2011 and 2014, several MoUs were signed between India and Germany in order to forge the progress on Indo-German partnerships in skill development. An overview including several best-practices can be found in a presentation by the FICCI Skill Development Forum: Forging India Germany Partnerships in Skill Development.[16] It includes examples of partnerships between several institutions and companies in India and Germany with scope on quality measures, as well as training centres and trainer education.

Indian VET according to German ideals was the subject of a conference on 8th October 2014 at the German Embassy in New-Delhi, "Indo-German Conference on Skill Development". The content and strengths of the German system and options for their partial implementation were discussed. Leading figures included the Indian Minister Sarbananda Sonowal (Ministry of Skill Development, Entrepreneurship, Youth Affairs and Sports) and the German Birgit Thomann (Head of Department of Internationalization of BIBB)[17].

On 9th and 10th October 2014, the 7th session of MOLE and the Indo-German working group for VET took place in New Delhi. As a result, the parties made a commitment to implement elements of the German dual system in India.[18]

In 2016, the 9th meeting of the Indo-German inter-Ministry working group for VET took place.

The foundation of the Ministry of Skill Development and Entrepreneurship in November 2014 was an important step and a signal given by the GOI in order to coordinate the skill development efforts on a national level. Previously, the Ministry of Labour and Employment was responsible for the fields of industrial training, apprenticeships and other skill development issues. The idea is to build a better bridge between the demands of the private sector and the available (skilled) workforce. The inclusion of the word “Entrepreneurship” stresses that India is more than ready for a new mind-set regarding the skill developments required towards producing individual-thinking working individuals.

In July 2015, a new campaign named “Skill India” was launched by the Prime Minister Modi, which aims to train over 400 million people in India in different skills by 2022. It includes various initiatives of the government like "National Skill Development Mission", "National Policy for Skill Development and Entrepreneurship, 2015", "Pradhan Mantri Kaushal Vikas Yojana (PMKVY)" and the "Skill Loan scheme"[19].

[16] https://www.imove-germany.de/cps/rde/xbcr/imove_projekt_de/d_2013_India-Germany-Partnerships-in-Skills-Development.pdf, September 2017.
[17] https://www.bibb.de/govet/de/20776.php, retrieved 30th September 2017.
[18] https://www.bibb.de/govet/de/20776.php, retrieved 30th September 2017.
[19] https://en.wikipedia.org/wiki/Skill_India, retrieved 3rd October 2017.

In August 2016, the “Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH” (GIZ) and the Indian Ministry of Skill Development and Entrepreneurship (MSDE) started a new collaborative project on vocational training.

In March 2017, Indian industry founded the "Alliance for Dual VET". As a result, this was to implement dual structures within the Indian VET. [20] An initiative was taken by the German Embassy under the Consul General Dr. Martin Ney, supported by the Bertelsmann Stiftung. It was notable that Dr. Ney pointed out that the industry has to take the main responsibility regarding the VET (as stated above). Global players should give orientation to SMEs. In other words, financial investment has to be made by global players, while SMEs can profit from best practices, but implementation on their own will be difficult due to financial support being lacking. On the other hand, SMEs can participate actively and optimize their own training capacities with new knowledge through high (practical) involvement.

In May 2017, an Indian television crew came to the city of Bonn to make a report for the popular Indian television series “Hunnarbaaz” about VET in Bonn and Rhein-Sieg-Kreis. They visited companies and interviewed some of the apprentices to give Indian trainees a better insight into the German dual system and to improve its image.[21]

In July 2017, the Government of Karnataka signed an MoU with Siemens Industry Software about the establishment of training centres. The centres of excellence are planned for the cities of Bengaluru, Kalaburagi, Dandeli und Mysuru.

Since July 2017, the Indian platform “National Skills Network" publishes a newsletter about the Indo-German collaboration on VET, including stories from iMOVE.

Moreover, several private institutions are supporting the skill development in India. Recently, in August 2017, the TÜV India Training Academy has expanded the support for participants of educational measures. The Academy of TUV India Pvt. Ltd. has also recognized that the future competence of those graduating requires many challenges beyond basic knowledge. Therefore, the institutions offer a broad range of modules.

4.2 Investments, challenges and strengths

“Skilling is building a better India.

If we have to move India towards development, then Skill Development should be our mission.”

Shri Narendra Modi

[20] http://www.imove-germany.de/cps/rde/xchg/imove_projekt_de/hs.xsl/alle_news.htm?news-type=&content-url=/cps/rde/xchg/imove_projekt_de/hs.xsl/Indien-Allianz-fuer-duale-Berufsbildung-gegruendet.htm, retrieved 23rd September 2017.

[21] https://www.imove-germany.de/cps/rde/xchg/imove_projekt_de/hs.xsl/alle_news.htm?news-type=&content-url=/cps/rde/xchg/imove_projekt_de/hs.xsl/Deutsches-duales-Ausbildungssystem-im-staatlichen-indischen-Fernsehen.htm, retrieved 23rd September 2017.

India knows that Skill Development is a key factor for the prosperous economic future of the country. Within the last few years, as the last chapter has documented, a fast and strong implementation of measures has taken place in India. Obvious examples are the foundation of new ministries, the development of professional websites with valuable content, reports and studies, as well as a huge marketing campaign initiated by Prime Minister Modi.

The investment in Skill India is tremendous: In 2017, the World Bank Board of Executive Directors approved $ 250 million for the Skill India Mission Operation (SIMO). In the first instance, short-term skill development programs (maximum 12 months) at the national and state levels will be supported. Target groups are workers between the ages of 15 to 59, as well as around 12 million young people between the ages of 15 to 29. Every year, the Ministry of Human Resource Development Department publishes an analysis about the expenditure on education. The following table indicates the sector-wise expenditure on education by the Education Department, incurred by both the centres and states.

Sector-wise Expenditure (Plan & Non Plan) on Education by Education Department (Revenue Account) with percentage- Centre and States/UTs 2014-15 (BE)

(Rs.in crore)

	Plan Expenditure	Plan %age share	Non-Plan Expenditure	Non-Plan %age Share	Total Expenditure	Total %age Share
1.	2.	3.	4.	5.	6.	7.
Elementary Education	84598.92	60.87	124390.27	46.83	208989.19	51.65
Secondary Education	26047.73	18.74	91522.39	34.46	117570.12	29.06
Adult Education	1155.55	0.83	300.57	0.11	1456.12	0.36
Language Development	356.55	0.26	1512.60	0.57	1869.15	0.46
University & Hr. Education	13459.06	9.68	37653.93	14.18	51112.99	12.63
Technical Education	10741.47	7.73	8370.12	3.15	19111.59	4.72
General Education	2630.03	1.89	1852.10	0.70	4482.13	1.11
Total Education	138989.32	100.00	265601.98	100.00	404591.29	100.00

Table 3: Sector-wise expenditure on education by the Education Department, incurred by both the centre and states.

Source: GOI, Ministry of Human Resource Development (n.d.)

It shows that more than 50% is invested in elementary education, while less than 5% investment is available for technical education. This ratio highlights that the supply side of the labour market has to invest even more in their relevant technical and practical education skills, with governmental investment increasing accordingly (currently only 4.72%). Nevertheless, investment in elementary and secondary education is mandatory, as we have seen in the introduction regarding the objectives of education as pointed out by Jean Drèze and Amartya Sen.

As stated above, the GOI is aware of several challenges facing the Indian VET that need a solution and further development. The skill gap analysis by the GOI shows that by the year 2022, 110 million skilled workers shall be required in the 24 key economic sectors. In the framework of the National Skill Development Policy (NSDP), measures have been taken since 2006. Nevertheless, a lot of issues remain and require further improvement. To summarize and give a better overview, these challenges need to be pointed out:

- High level of bureaucracy. A very useful study published in September 2017 recommends for the first time to reduce the number of ministries involved in education by placing them under one guiding ministry.[22] This kind of recommendation to the GOI could be a milestone as soon as it is turned into practice.
- Huge lack of trainers and teachers, as well as training facilities. Nearly all the companies that have been interviewed within the different published studies stated that there is a huge demand for newly qualified trainers and teachers in India, as documented in the graphic below by the GOI and NSDC:

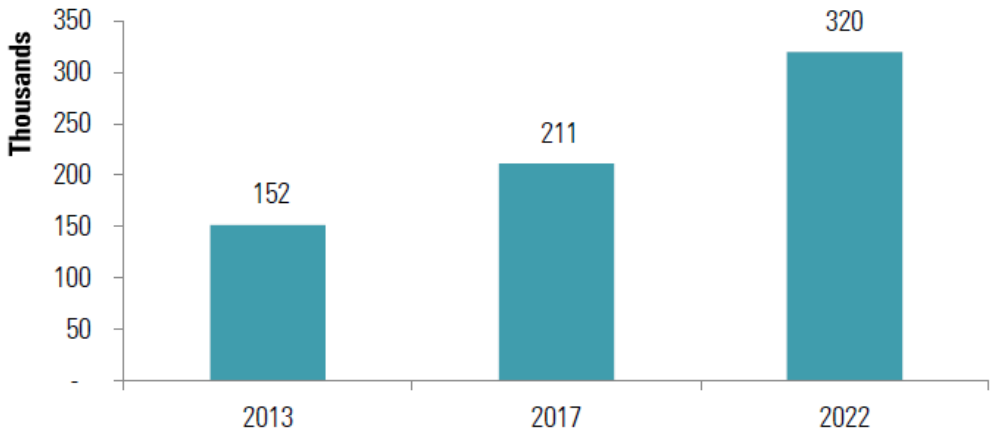

Figure 10: Workforce Requirement in Vocational Training (Teachers and Non-Teachers)

Source: Government of India, NSDC

[22] https://www.imove-germany.de/cps/rde/xchg/imove_projekt_de/hs.xsl/indien.htm?news-type=&content-url=/cps/rde/xchg/imove_projekt_de/hs.xsl/32029.htm, retrieved 30th September 2017.

- Lack of quality in teaching trainers and teachers (The Ministry of Labour and Employment (MOLE) aims to create 1500 ITIs and 5000 ITCs (= Vocational Training Improvement Project (VTIP) by 2020. Based on a shorter education period, the drop-out-rates should be reduced. However, due to many parties and ministries involved, and thus a high level of bureaucracy, the results are not sufficient.[23]
- High dropout rates at school, especially of girls. As per data of the Ministry of Human Resource Development, the average annual dropout rate in school education (2013-14) in India was 22.2% in primary and secondary schools. However, due to the increasing number of schools, the rates have already gone down in the last few years.
- Lack of financial support in the public sector and lack of understanding towards investment in the private sector.
- Missing common vision on both sides. While the GOI has launched national marketing campaigns to promote skilling, the interest for investment in VET on the industry side is still limited due to uncertain return-on-investment and intra-industry unions being lacking. This corresponds with a need for reforming the VET "which would be possible only by assuring private participation in the administration of the Indian VET system." [24]
- Lack of clear and stable communication structures between all acting players in VET.
- Limited high-quality schools[25] and accessibility to the broad mass of young people.
- Nevertheless, 50% of the Indian workforce is working in the agricultural sector (which contributes only 14 % to the BIP). Thus, re-training measures are required.
- Certificates can be received through payment[26] and cannot be compared on a national level, because some final exams are organized on the level of the Federal States (Limited standard curricula).
- Lack of knowledge in India about the dual system implication options and procedures.
- Need for adequate skill mix of theoretical and practical training due to mismatch.
- Need for intensification of offers for internships.

These challenges make clear that substantial reforms within the education system are necessary. Responsibilities should be divided clearly, and facing up to the fact that a lot of ministries and

[23] iMOVE (2011), p. 19ff.
[24] Bertelsmann Stiftung (2014), p. 27
[25] Most of the schools have only one teacher for more than 30 pupils. Additional points: bad condition of school buildings, no or polluted drinking water, long way to school due to not enough schools, especially in rural areas; furthermore, poor parents are not able to pay for school uniforms or school materials, as well as girls not being allowed to go to school because they have to help with the household, etc. These aspects cannot be evaluated within this brochure, but they are important factors that need to be improved within the next few years.
[26] DAAD, p. 19

governmental institutions have tasks that may lead to parallel working areas without sharing. A definition of aims within a yearly project plan is a must.

First, as statistics show the increasing economic relations and commodity flows between India and Germany, both countries have enormous potential to collaborate with mutual benefits. Regarding the export of goods to India, the major challenge for German companies is a suitable and long-term adoption of the products and services to Indian requirements. The imported goods need to be adapted to Indian society and special market requirements. The necessity for country-specific adoption is extremely high in India due to the huge market size with sensitive differences in demand and consumer behaviour.[27] In conclusion, the German dual education model is strong in Germany due to matches between supply and demand and cannot be transplanted to India 1-to-1. Instead, a sensitive and intelligent tuning of the German VET in India is necessary. Initial parts and systemic modules from the German education system can be implemented and used in India. Examples of these parts are systemic cycles and quality management frameworks on the one hand, and special mind-sets, basic adjustments and admission of the systemic standing orders on the other hand. German knowledge and especially experience of how to build up educational training centres, as well as the development and implementation of quality management systems, action plans and organization charts can be successfully transferred to acting governmental and non-governmental institutions in India. Not least, India and Germany can share their visions for lifelong learning and the willingness to invest in education. Indeed, there are tender signals in India regarding the vision of these mind-sets: For example, it can be found at FICCI and innovative Technology Centres who are aware that internationalization will support their economic growth and international level of representation. It would be highly appreciated to spread these views across the whole country. Ideally, it should be inaugurated by the GOI.

Secondly, with regard to the above outlined aspects of German dual VET model implementation to India, this study stresses the opportunities to a greater extent. As per statements and answers of Indo-German experts, India has a fundamental interest in learning from German success stories in VET. One way to achieve the objectives of Skill India initiatives seems to be in making the best possible use of existing intra and inter Indo-German relations and intercultural experts. The intensification of knowledge transfer on a bilateral level could be a key factor for further progress. The vision on Skilling India is geared towards the media within the country, but those, who are depending on access and information, can be addressed even more. A report pointed out that it “was felt that more awareness

[27] In her book “We are like that only. Understanding the logic of Consumer India”, Rama Bijapurka, one of India’s most important market researchers and consultants, has pointed out clearly the special structures and demands of Indian society today. When I met Rama Bijapurka in Kurla Complex in Mumbai in 2015, we had a very interesting discussion about the development of consumer behaviour, driven by the increasing consumerism on an emerging market like India.

should be created about vocational training to enhance its acceptability"[28]. Indeed, international education providers have experience in marketing campaigns, as well as in opening doors between several players. They can be a helpful guide for communication processes between the Government and the population (e.g. TV spots, radio, social media campaigns, flyers, information centres, etc.). Thus, levels of communication need to be intensified, taking into account also the level of the trainees and people that need to be skilled. Bottom-to-top communication and top-to-bottom information flow is important for mobilising students into vocational training. Not least, lower fees can lead to higher numbers of training participants.

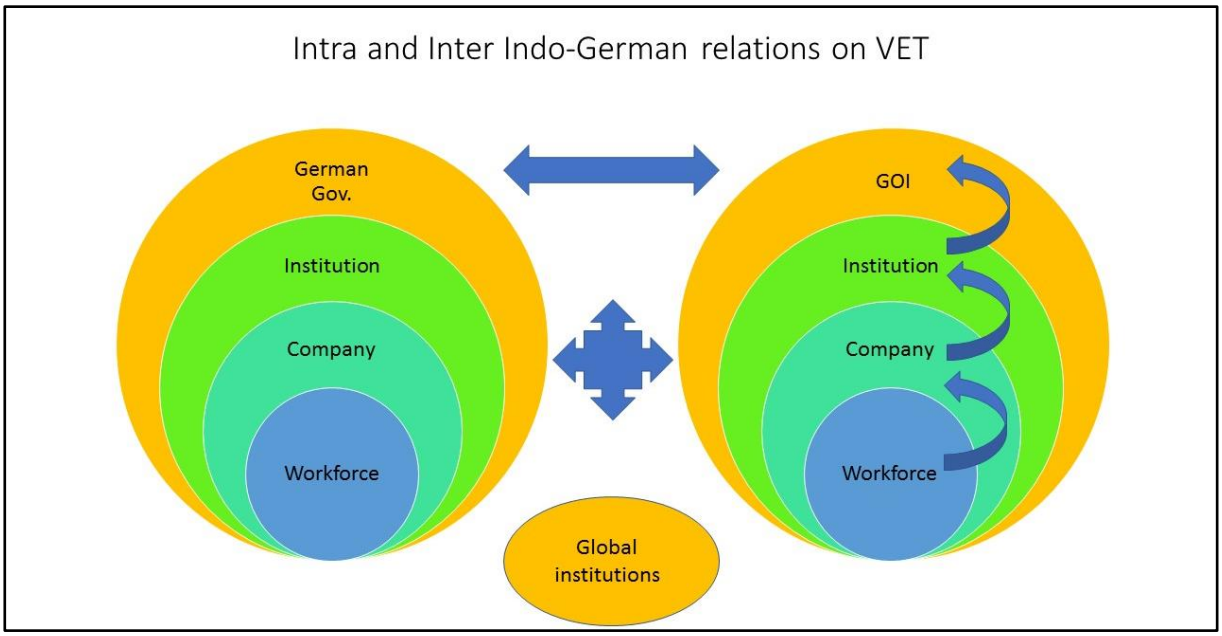

Figure 11: Intra and Inter Indo-German relations on VET

Source: Author's own analysis and diagram, based on GOVET (2016)

Thirdly, the reason behind the fact that Germany and India have to learn from each other is because the German VET system and existing structures have provided success and best-practice on a global level. On the other hand, the emerging social and market progress in India also produces success. Notwithstanding, the inherent characteristics of India lie in its remarkable economic development. Moreover, radical social changes, especially in the Indian middle-class, are key points of interest for an effective implementation of measures. At the same time, the need for skill development in the lower classes is enormous, mainly in rural areas with a large number making up the agricultural workforce.

[28] FICCI, Konrad-Adenauer-Stiftung (n.d.), p. 21

As Chapter 2 has shown, both lower and middle classes are characterised by so-called soft-skilled strengths, for example a high level of commitment and desire to learn. Indians are highly engaged and passionately proud of their country. These features mixed with German strategies and conservative knowledge about the vocational training system could be a guarantee for a long-term business relationship in general, and especially in the field of vocational training.

Not least, strengths that characterize the public side, institutional and supply sectors are important:

- Strong Indo-German strategic and historic relationship[29]
- Bilateral conventions and strong economic relationship
- Existing initiatives like “Make in India” (“Make in India Mittelstand” (MIIM)), “Digital India” and “Skill India”. In order to make them even more successful, promotion of Skill India together with MIIM in Germany via the German Embassy and German government can highlight the opportunities of investing in India and of filling skill gaps in German companies.

4.3 Best-practices of German companies and associations implementing Indian workforce

This chapter gives best-practices of German companies that have successfully connected themselves to the Indian workforce. Examples A-C show the expertise of German companies who have cooperated with the German non-governmental organisation Don Bosco Mondo, located in Bonn. Don Bosco Mondo enables disadvantaged children and adolescents in Africa, Asia and Latin America (in total 7,000 children and youth centres in more than 130 countries) to live independent lives, while providing comprehensive education and vocational training. In India, Don Bosco Mondo is working together with reliable partners of the Salesians, e.g. in Chennai. In strong collaboration, companies from Germany and Don Bosco provide young people with knowledge, skills and orientation.

The examples will give one of several answers to the question, what could be the next practical steps carried out by German companies interested in investing in India, or in intensifying existing training centres in India?

The success of the best-practices is an important argument to make to the Indian government, companies and institutions, who are considering making the next effective steps towards a well-run system of vocational training in India, especially with a view on the German model of vocational training[30]. These best-practices show clearly the value and advantages of vocational training centres for India, and German as well as Indian companies. Not least, the first necessary steps carried out by

[29] The document of the GIZ “Vocational Training. Tolerance is a Must! The Contribution of German Technical Cooperation to Vocational Training in India” gives an historical overview about the Indo-German collaboration in the field of VET since 1958.

the companies are not really complicated. In fact, solutions can be found very individually and according to the special requirements of each company.

4.3.1 Grohe AG

Assuming social responsibility – Grohe Dual Tech

In 2009, Don Bosco Mondo and Grohe AG founded the training centre *Grohe Jal Academy* in Mumbai-Kurla. 'Jal' is the Sanskrit word for water – and it means 'life' also for these young people. In 2014, the cooperation was extended and two new centres in Delhi and Manila (Philippines) were opened and called Grohe Dual. Up until now, this innovative cooperation has helped more than 800 young people to successfully complete their training and find a job.

The formula behind the success of Grohe Dual Tech is sustainable vocational education – a 'win' for everyone involved. The Salesians of Don Bosco guarantee a lasting and effective collaboration through their longstanding experience, state-recognized qualifications, local networks and existing infrastructure, while Grohe AG provides elaborate know-how, the equipment and funding for the training courses in the fields of water management, installation and wastewater treatment at these training centres. In return, the local labour market gains well-trained specialists for the installation and maintenance of their quality products. Thanks to this cooperation, Don Bosco Mondo can improve the life prospects of the girls and boys from the surrounding slums. The vocational training enables them to earn a decent income and escape poverty and hunger.

The two new Grohe Dual Tech training centres at Don Bosco are funded through the program develoPPP.de on behalf of Deutsche Investitions- und Entwicklungsgesellschaft (DEG). Thus, the German company can be sure of a long-term commitment. They incorporate even more elements of the German dual vocational training system, in which training is partly school-based and partly industry-based: a triple-win situation for companies, Don Bosco training centres and, above all, for the young people starting their careers.

Figure 12: Grohe Dual Tech: Visit by Michael Mager, Executive Director Personnel and Organization at Grohe AG

Source: Grohe AG

4.3.2 Zwick GmbH & Co. KG

Fighting poverty through technical education: Zwick Roell

In the heart of one of the largest impoverished neighbourhoods in Chennai, disadvantaged young people are given the chance for a better future. This is the home of the Don Bosco Tech Campus, a place where education is needed most. In 2016, an innovative training academy was created together with Zwick Roell AG on the premises of this vocational training centre run by the Salesians of Don Bosco. The global leader in the manufacture of testing systems rented a building on the campus, renovated it, and equipped it with the most modern materials testing machines, now known as the *Zwick Roell Academy.*

Two trainers train up to twelve adolescents each year to become Zwick testing machine operators, giving them the opportunity to lead self-determined lives that break the barriers of poverty. The Zwick Roell AG also uses the training facility for continued training activities, and as the first Zwick lab in India for customer demonstrations and training courses. Besides the development of the project, the

company also fully funds the operation of the training academy. Since 2016, Zwick Roell AG sends German employees to the academy for short-term competency-based corporate volunteering to support and coach the local training staff.

Take 17-year-old Kiran, for example. His parents died when he was a young boy. Relatives took him in. He was lucky enough to have the chance to go to school because the Salesians of Don Bosco are active in his impoverished neighbourhood. There he learned of the vocational training opportunity. He moved to Chennai just for this apprenticeship, but because his relatives have no money, Zwick Roell AG paid his school and training fees.

This cooperation generates a multiple-win, as the local market and the company's customers benefit from well-trained personnel; meanwhile Don Bosco TVET centres increase their expertise and capacity. And the biggest winners are the young people served by the Don Bosco institution in Basin Bridge, India. Through talent and skill cultivation, as well as technical training, these adolescents are given the opportunity to acquire a profession for self-determined lives – a real vision for their future.

Figure 13: Zwick Roell India. Working hall: The Zwick Roell Academy is equipped with the most modern materials testing machines.

Source: Don Bosco Mondo

Figure 15: Bon Bosco Tec Campus, Chennai, 2016

Source: Author

Figure 14: Bon Bosco Tec Campus, Chennai, 2016

Source: Author

4.3.3 Lorch Schweißtechnik GmbH

Brand ambassadors with prospects for the future

Lorch Schweißtechnik GmbH, one of the world's leading manufacturers of welding technology, established a school to fight the shortage of skilled welders in Pune – one of India's main car making centres. The challenge here is that many companies cannot afford to train staff themselves for reasons of cost and high staff turnover. And even many young people have no formal education and therefore have very few prospects of obtaining a training place or skilled work. The *Lorch-Don Bosco Welding Technology School of Excellence* has provided training for disadvantaged young people since 2014.

Through the partnership, Don Bosco provided a training and workshop building in Pune. Lorch Schweißtechnik GmbH supplied the school with 20 welding booths, modern welding equipment, tools and essential materials. Lorch also trained the teachers for the school and provides them with continuous professional development. Don Bosco organises courses and internships and assists the young people to find work. Again, the company profits from long-term commitment due to intelligent investment in the future of the workforce on site.

By providing training for young people from the poorest social groups, the company is offering them the prospect of a career. Lorch is also training their own brand ambassadors because the young people

will be able to use the technology that the company manufactures. Lorch Schweißtechnik established a development partnership with DEG through the develoPPP.de programme, launched by the German Federal Ministry for Economic Cooperation and Development (BMZ). DEG served as an intellectual sparring partner and advised Lorch Schweißtechnik and Don Bosco on budget planning and locational issues.

By October 2016, 160 young people completed the full training programme and a further 260 qualified as welders. The school offers 12-month diploma courses and six-month short training programmes leading to state-accredited certification. It also trains service engineers for welding machines and provides basic training in technology. Many of the participants are offered employment while they are still in training.

Figure 16: Lorch India Welding Products Pvt. Ltd.: Innovative cooperation programs addressing the skills shortage.

Source: GIZ, Tristan Vostry

4.3.4 uPVC Window and Door Manufacturers Association (UWDMA)

UWDMA initiates Skills Development and faces challenges and opportunities: Global window making technology and materials used are changing at a fast rate, largely focusing on quality engineering and energy efficiency. uPVC windows manufacturing in India is still craftsman based. Secondly, hiring from within industry is difficult as there are few people in the market with the desired particular skills. Thirdly, the young people generally do not want to dirty their hands on the shop floor, while those who are willing are not effectively skilled. Because the majority of the industries who enter this sector are Small and Medium Enterprises (SMEs) in nature, students /job aspirants leave quicker with a perceived aim to join larger, better established brands in manufacturing (as stated in Chapter XXX?); this results in higher attrition rates. Fourthly, there is a lack of industry endorsed-government recognized and certified practical courseware; job aspirants therefore perceive this as an "unrecognized industry/occupation". Another cross-cutting challenge is the lack of practical training,

because routine trades/courses available at the ITI/Polytechnics lack specialization in terms of theory and practice. In such situations, burgeoning skill gaps in the uPVC labour market would become a serious concern for industrialists, if such challenges are not tackled in a cooperative manner. uPVC window manufacturing is a new industry in the country and requires people with certain skills for its long-term sustainable growth, which cannot be achieved without the active role of the Government.

Therefore, UWDMA's has taken several initiatives so far:

A. Cooperate with existing Skilling Industry in the Government and Private sectors, gain benefits of available infrastructure/services and provide its own competitive technology advantages for the skilling industry.

B. Train ITI students in the correct practical methods for fabrication and installation.

C. Set standards in production and installation of UPVC windows and doors and provide a quality workforce for the industry.

D. Train existing members and new entrepreneurs in the right business practices.

E. Training programs conducted across India.

F. Quality Fabrication Guideline course module is already launched.

G. Tie up with IFT Rosenheim in Germany for window Producer Certification Program.

H. Partnering with the German Government supported–Indo German Vocational Education and Training Project (IGVET).

UWDMA proposes to further expand this initiative with a three-way approach:

1. Establishing lab/training infrastructure at Government ITI Bhiwadi
2. Curriculum development - "Windows and Glaziers Technology"
3. Promote National Apprenticeship Programme through industries (with UWDMA as the coordinating and monitoring agency/Third Party Agency)

As per data of UWDMA, in total 20 students from the governmental education program ITI joined the initiative for a period of 2 years.

4.3.5 German Engineering Federation (VDMA)

Cleaning sector skills for Indian Facility management

The project is a fruit of a joint initiative between two German organizations: Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH & German Engineering Federation (VDMA). VDMA is the association of German plant and machinery manufacturers and is the largest engineering industry

network in Europe with 39 specialist associations comprising more than 3,100 member companies. VDMA India has its head office in Kolkata and regional offices in Mumbai, New Delhi and Bangalore. The cleaning system division within VDMA initiated the concept of "Cleaning sector skills for Indian Facility Management". Several member companies of the VDMA Cleaning Systems division support the expansion and development of this training program from time to time. GIZ on the other hand, implements this project in the context of the develoPPP.de program on behalf of the German Federal Ministry of Economic cooperation and Development (BMZ).

The program and the curriculum developed in Germany and adapted in India are designed to complement theoretical education with practical training in cleaning sector – the first of its kind in India – backed by the vocational training institutes like Don Bosco (DB) and GMRFoundation (GMRF). GMRF founded in 1991 is the CSR wing of the GMR group and is involved in several social activities in the areas of education, healthcare, livelihoods and community development. The project trained around 2,000 young people from the marginalized sections of society and raised awareness about the rights of the workers and women's rights, especially in the cleaning sector as a whole. Since this initiative in 2012, several batches of young people have completed their training at three operational centres in India, and 90% of the students are employed in facility management companies. Salient points of the training program:

- A vocational training program designed to impart professional house-keeping skills to unskilled entry level staff.
- Tailor made curriculum with support from German cleaning technology experts.
- 5 key modules ranging from mechanized cleaning to manual aspects of cleaning and maintenance of different surfaces.
- Duration of 45 to 60 days.
- Effective team of trainers to execute and deliver the training.
- Wide support from facility management sector for transmission of industry relevant skills.
- In 2016, the project financing from GIZ & VDMA concluded. The project is now being run by GMRF & DB Tech.

Figure 17: VDMA: Participants from the institutes during the VDMA Cleaning Systems Projects.

Source: VDMA India Services Private Limited

4.3.6 VETnet

As part of DUALpro (The VET service brand of the Indo-German Chamber of Commerce), the project VETnet has come a long way - after establishing a VET Council and specialized working groups in 2014, intensive discussions started and brought industry representatives together. In cooperation with some of these companies, IGCC conducted a pilot course in metal working in early 2015 together with the school partner Don Bosco Private Industrial Training Institute in Pune and the following companies: Bharat Forge, Mubea, Schmersal, BPW and Schaeffler. The training showed positive results in terms of progress in the learning of the trainees and feedback from the participating companies. Based on this, the companies requested the IGCC to extend the course and develop a one-year training for industry mechanics. This training course started in November 2015. The course enables the apprentices to focus on practical skills and applications, get shop floor experience in their respective training companies and join the working world immediately after graduation with great prospects for their future. The Indo-German Chamber of Commerce, like chambers of commerce in Germany, consults companies not only on the design of VET programs but also on independent skill assessment. The apprentices of the VETnet course do not only receive an Indian Vocational Training certificate at the end of their apprenticeship, but also receive a certificate from the Chamber which gives them an attractive edge in the market.

The project is sponsored by the German Federal Ministry of Research and Education (BMBF) and is coordinated by the Association of German Chambers of Industry and Commerce (DIHK), and carried out by eleven participating German chambers abroad (AHKs) - one of them being the Indo-German Chamber of Commerce.

Every year, approx. 15 trainees participate in different parts of the VETnet project, and approx. 120 trainees have been trained in total.

5. Recommendations, conclusions and outlook

This chapter highlights reform recommendations for the improvement of the Indian VET system. This is done with a focus on three major fields: Recommendations 1. related to government, 2. related to government and institutions, 3. related to government and institutions and companies. Processes and policies are meant to create an environment of fruitful Indo-German cooperation in education development in India. In the following, the analysis highlights potential fields of interaction and provides more detailed answers to the questions of which parts of the German dual System can be implemented in India, how can India learn from Germany and how can new skills be included in the Indian system. The following graphic outlines an extract of recommendations which are meant to enhance the initiatives on Skilling India.

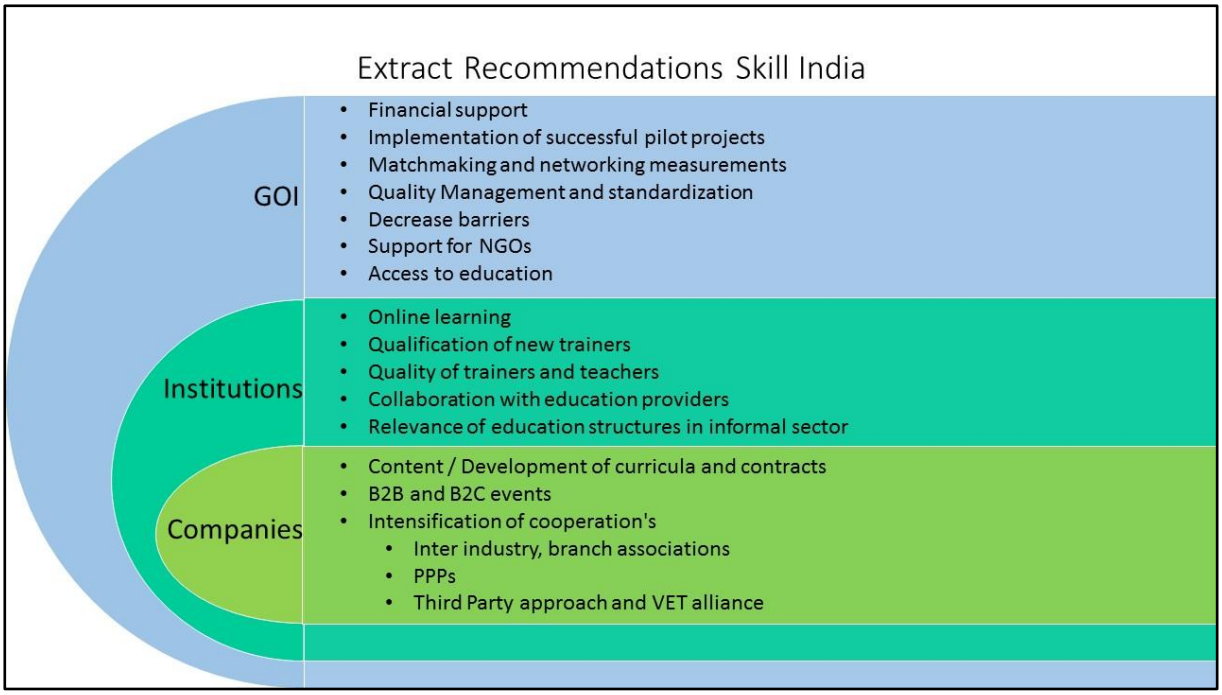

Figure 18: Extract of recommendations for Skilling India

Source: Author`s own analysis and diagram

Recommendations for the GOI (light blue colour) include the inner references (green colour) for institutions and companies (light green colour) and form the political framework. Germany and India need to transcend bilateral boundaries to achieve their targets (India requires better education system and long-term solutions for skilling 500 million people; Germany provides fruitful ground and long-term perspective for economic investment in India by companies). An open and transparent Indian government system will enable German companies to make secure investments. The results will reflect positively back on the GOI and the Indian socio-economic future. Below, the extracts are analysed and

discussed in order to provide practical steps for improving the Indian education ecosystem. The recommendations within this study are concentrated on the German VET structures that can be implemented in India. As stated in Chapter 4.2, parts of the German VET are not suitable for adoption in India due to country-specific requirements. In a broad sense, the measures include recommendations in categories like infrastructure, communication, system and process management and soft factors like awareness, understanding and vision.

5.1 Recommendations related to the Government

Improvements in the domestic market of education economics in India is a mammoth task. Nevertheless, the historical process has shown high dynamics. However, huge tasks need to be fulfilled. This chapter addresses the GOI as well as the German Government in order to deepen their bilateral collaboration with the VET system. Suggestions for improvement and substantial procedures refer to the obstacles and challenges which were pointed out in Chapter 4.1 and 4.2.

- The GOI should increase the **financial support** in education. Statistics of the World Bank show that governmental expenditure on education increased in the period from 2006 to 2011 (approx. 3.1% of GPP in 2006 to 3.8% of GDP in 2011; comparison: 4.3% of GDP in 1999), but decreased slightly in the last few years (3.7% of GDP in 2016). Germany`s expenditure in 2015 is noted as 5% of GDP (Statistisches Bundesamt). Whereas the "Times of India" and "Moneycontrol" complain state about decreasing expenditure in 2017, "Livemint" praises an increase of 9.9% in total Rupees from 2017 to 2018. In fact, the budget for 2018 is approx. € 10.62 billion (approx. Rs 79,685.95 crore). According to the statistical portal Statista, Germany, in comparison, had an expenditure of € 129.2 billion in 2016. At the end, the expenditure on education in India has to reach the right places: schools, education centres, training centres. Expenditure needs to be traced back - meaning that responsible persons in target institutions need to report transparently about concrete measures that have been implemented due to investments. It is not only a question of the quantity of money spent on education, but how much money reaches the beneficiaries.
- The GOI should implement some of the **successful pilot projects** into the national system. Pilot projects as mentioned in Chapter 4.3 should be duplicated as they are worthwhile for stakeholders and the workforce. Moreover, the GOI needs to spread these pilot studies among companies to support growth and copying. German as well as Indian companies can copy the structure of suitable pilot projects according to their own needs and requirements, either partly or fully. There is a need to learn from German companies having established training

centres in India like the global players BOSCH or Siemens because of their long-term experience. They have overcome several obstacles and have shown good examples of successful introduction of VET structures in India. As per data of a branch association in India, the management of the association would like to join their efforts together with state and central bodies, as well as executive local bodies and different decision makers. Again, the knowledge transfer is a milestone for further implementation and spread of education projects (based on best-practice). This claim for sharing information is initial for the following point.

- India is facing an information and communication gap between public and private sectors. Whereas we can find a balance of interests in Germany, the Indian public sector aims to establish a VET system for the next 50 to 100 years while, on the other hand, the private sector is (mostly) focused on its own profit interests. Both angles and attitudes are highly understandable, but the focus should be on a common interest in sharing both positions. The German colloquial phrase “to look beyond one's own nose” can be used to re-think this situation. As there are many different individual interests, the **matchmaking between the GOI and the companies** has to be enhanced. The German individual interests are strongly regulated by the public sector and at the same time the mechanisms of cooperation deliver good results. Decisions on regulative and quality methods should not be left to the private sector by the GOI, but the GOI needs to listen to the requirements and conceptions of the industry. Communication channels like **round tables** or a **yearly congress** on education making concrete steps is highly recommended – at the state and regional levels. However, existing events have not provided completely satisfying progress. Thus, tasks need to be shared between both acting players. Initial steps need to be carried out by the GOI, like the announcement of 23 “Round tables on the VET system”, one for each state and one for all the states together. Instead of market research surveys in the supply sector, an open communication about the missing practical abilities of young employees should be included within these plans for discussion and information transfer.

  In Germany, round tables sometimes exist as quite informal initiatives on a local level giving the chance for all interested parties like schools, trainers, VET coordinators from the companies and additional groups to participate and share ideas. The suggestion for an establishment of these informal meetings (like a “Jour Fixe”) can be done by the GOI. Further to addressing the local level directly, this step provides an answer to the previously mentioned economic significance of the informal/unincorporated sector in Chapter 4.1., due to a closure of the communication gap and interest at the local level. It is recommended to use the experience and knowledge of institutions like GIZ at that stage. GIZ may act as a mediator

between holistically-oriented state, profit-oriented companies and the social-oriented society. Best practice for these cooperation tables are so-called project cooperation units (PCUs) in India: they address not only ministries, stakeholders and institutions, but also civil society. The PCU offers an answer to the view on intercultural differences and the importance of Indian family structures (as the family decision reflects the level of skill of young people - see Chapters 2 and 3). In fact, they improve the **matchmaking between the GOI, companies and civil society.** Learning about the exceptions and fears of civil society is elementary for a broad acceptance of the Indian VET system. The linkage between education access and acceptance of education forms a basic pillar for maximum governance. On the other hand, highly traditional views need to be exposed through policies to the holistic nature of education. In other words, based on practical experience, parents need to be addressed and look beyond traditional structures so that both girls and boys attend school in order to get employed and improve their living standards.[31]

- Implementation of **homogenous quality standards and regulatory mechanisms,** including an introduction of formal assessment/evaluation criteria for Indian education providers. Are they certified? What can they offer? Which pre-requisites have to be fulfilled? Partly, the website of the NSDC provides already the first steps. Nevertheless, it is not completely clear if the individual Indian education provider has a certificate that assures a German (or Indian) company that the services are registered and approved by the GOI. Thus, German companies might hesitate to make use of the services. Moreover, project milestones which underlie systematic and steady control mechanisms have to be included in the governmental planning procedures. The German VET is "monitored and controlled by the respective chambers"[32]. Therefore, "training regulations in the country require adherence to a uniform national standard, which corresponds to the requirements of the relevant occupation."[33] International institutions already have experience in the set-up and implementation of regulatory structures. Adaption and duplication is highly recommended. For example, the GIZ has set up the Indo-German Programme for Vocational Education and Training (IGVET) together with the GOI. It includes guidance and cooperation between public entities and private sector organisations (the importance of a closer collaboration is evaluated in detail below). IGVET offers a documented replicable VET-model that will "allow up-scaling of gender-responsive,

[31] Additional information: A new service tool based on the initial idea of the GIZ will be available in 2018. The tool offers a simulation training that enables the public sector to step into the role of the private sector and reversed. Amongst others, the tool is financed by the World Bank and can be used by all interested companies and ministries. The objective is to enforce a better mutual understanding.
[32] FICCI, Konrad-Adenauer Stiftung (n.d.), p. 28.
[33] Konrad Adenauer Stiftung, FICCI (2015): Skill Development in India, p. 30.

cooperative VET measures in other regions and other sectors."[34] The programme started in 2016 with a duration until 2019. The budget is € 3 million.

- **Decrease barriers** of admission of education providers (and universities), plus a decrease of bureaucracy for German companies who want to build in-house-training centres, plus a decrease in obstacles for NGOs and small associations acting in India, such as children`s homes, as well as a decrease in market entry obstacles[35] due to high bureaucracy.
- **Support of successfully operating German NGOs**, for example Don Bosco Mondo. The NGO tries to shape the cooperation in a dual way – while the training shall take place at a Don Bosco Training VET Institute, practical training shall be given or supported by the company in the form of internships, apprenticeships and on-the-job training, depending on the company's capacity. Through the duality of the training, employability rises as graduates become not only competent in the theoretical knowledge, but acquire actual hands-on experience. The companies benefit from local training VET experience, which they enrich with their German, market-oriented, dual expertise. Some numbers verify the success of this NGO:
    - Don Bosco has more than 150 TVET Institutions and Polytechnic Colleges in India.
    - To give some example of the achievements of the team Corporate Cooperation: Until today, Grohe Dual Tech has trained about 800 sanitary specialists in Mumbai and 20 in Delhi.
    - 10 marginalized young people will graduate from the Zwick Roell Academy in Chennai in November 2017 as Zwick Roell Testing Machine Operators. In Pune, up to 70 welders are trained every year in ITI and MES courses, together with the company Lorch.
    - An improvement of transparent visa regulation for NGO staff will simplify their working efforts in India. At the same time, an overview of the turnover and investment in NGOs will simplify the work of the GOI and provide mutual transparency.
- Improvement of **access to education** for scheduled castes and scheduled tribes. The first initiatives and successes are shown in the Annual Report 2016/17 of the Ministry of Labour & Employment. At present, 24 National Career Service Centres for SCs & STs are established in India to provide better orientation and guidance for job seekers of SCs and STs. Moreover, approximately 18,000 people have attended a "Special Coaching Scheme" for better skills

[34] Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH (n.d.): Factsheet. Indo-German Programme for Vocational Education and Training (IGVET).
[35] The EU-Vietnam Free Trade Agreement (EUVNEFTA) is a good example of a very ambitious convention to reduce trade barriers.

(computer and hardware training). The Centres are good practices for further implementation in the country.

- Further establishment of helpdesks/**information centres** for employees and students (see 4.2) is highly necessary. In Germany, employees and students have several contact points where they can inform themselves about education and career opportunities. In India, such drop-in-centres do not yet exist in every town. Starting in the Tier I and Tier II cities and proceeding with the foundation of small centres in Tier III cities, as well as in the rural areas can minimize the information gap lacking between the public side, supply sector and workforce. German counterparts are, for example, public driven contact points like the BIBB and the chambers of commerce, as well as private consulting institutions and education centres.
- Networking measures
    - Intensification with existing cooperation structures in Germany, especially GIZ and iMOVE.
    - Creating a new offer of delegation journeys between Indian and German education providers in order to learn from each other.
- On a national level, it is highly recommended to increase the level of attractiveness of the **profession as a teacher** in India through giving benefits and providing recruitment measures. Several companies interviewed in other studies complained that there are not enough teachers in India. Some companies have their own teachers in the form of project leaders or training managers, but they can only teach in company (industry/branch)-related fields and lack teaching general education skills as listed in Chapter 3.3. The idea of recruitment should be strongly linked to the point mentioned below: a need for qualified new trainers.

5.2 Recommendations related to Government and Institutions

- India is one of the strongest players in the world regarding online economy and e-commerce. The rise of established **online learning** and mobile training unit options like the popular German Distance Learning University (Fernuniversität) Hagen in combination with VET could be a remarkable step. In India, it is estimated that there are more mobile phones than inhabitants. On average, there are nearly three phones to each inhabitant. Nevertheless, availability and internet access in urban and rural areas is a prerequisite for online learning. Thus, the expansion of the broadband local area network is a must (in fact it is one out of the nine pillars of the Digital India program). Two points are worth noting: 1. Delivery of governmental services, as well as educational training options have to become more

digitalized, especially because it saves the capacities of trainers and training institutes and offers a larger proportion of the workforce to qualify (at least in parts of the education stream) and 2. The mobilization of the workforce potential in the huge rural areas in India through mobile solutions is a need in order to skill the country. Online solutions cannot replace in-house-training and the required high-quality training institutes, but they can contribute to the scope of skill training needed.

- **Online out-of-the-box** solutions like the open-source system MOODLE[36] (Modular Object-Oriented Dynamic Learning Environment) can be used to improve the accessibility of trainees in rural areas to basic and continuative VET in India. In fact, there are already some companies in India who offer support for these items.
- Need for **qualification of new trainers**. The first initiatives have been taken by the GOI and NSDC, for example the establishment of the National Council of Teacher Education (NCTE). Its task is to prepare teachers for the school system and to improve the capacity of existing school teachers Some companies have stated in studies that they are not satisfied with the quality of teachers coming from the teacher training institutes (TTIs) (see next bullet point). Another example is the SIMO program. It supports approximately 15,000 trainers and 3,000 assessors. In Germany, high standards and special certificates have to be fulfilled before teachers can start to teach trainees. Teachers need to graduate in pedagogic as well as in study related subjects (Normally, a university degree is requested for fulfilling the profession of a teacher). In addition, mainly due to the shortage of skilled teachers, the system of the Federal States offers a special education method for subject teachers. Discussions about the acceptance of teachers coming from abroad (either European Union or other countries) are ongoing, mainly because teachers have to graduate in two subjects in Germany.
- Improvement of **education level** and level of experience of teachers:
    - Intensification of National mobility programmes for teachers and students to learn from other regions in the country and to get new experiences.
    - Intensification of international mobility programmes for teachers and students to learn from other countries and improve language skills
    - Development and implementation of teach-the-teacher workshops. Competitive environments among teachers can be treated as motivating and working tools (see Chapter 2.2).

[36] https://moodle.de/ and https://moodle.net/sites/index.php?country=IN retrieved 7th October 2017.

- Teacher-rotation-system: Teachers can learn from other education institutions in the country while rotating with their colleagues. The 10-point pathway for India's skill ecosystem includes the point "Skilling with global mobility". Globalization includes the exchange of experiences and increasing intercultural skills in order to create mutual economic benefits.
- An example for a successful implemented measure is the collaboration on the training education of master trainers in the field of machining and mechatronics between iMOVE and the German Guild of Craftsmen in Soest. In order with the Indian Ministry of Labour, iMOVE has authorized the Guild of Craftsmen to educate the trainers in India. High-qualified teachers are able to build a bridge between work-based and school-based learning, especially when they establish and use communication structures among each other and between companies and schools.[37]

- Together with institutions, the GOI should value existing learning structures in the **informal sector** as described by Professor Barbara Harris-White.[38] The example of the Indian city Arni shows that there are several education initiatives in the backyards of the city. Professional associations form education programmes include certificates that are oriented towards the practical criteria of professional experience. As stated in Chapter 3.1, the informal sector has a huge economic potential. Following the words of Vandana Mehrotra, "the interaction between the formal and informal sectors" is only possible "through financial inclusion"[39]. Thus, cooperation with institutions shaping financial frameworks is needed to improve the living standards in poor urban and rural areas, and in order to start a deep communication process between the people acting successfully in India's magnificent micro-economy.
- There is a need for recognition, appreciation and the further development of **"Thirst for formal education"**[40] in India on the one hand, and successful structures of education centres within the informal sector (not re-placing but improving and intensifying these structures) on the other hand, especially because 90% of employment relationships in India are informal!
- Foreign **education providers**. In Germany, collaboration with education providers is quite normal. Strong partnerships between the Chambers of Commerce, companies and education providers add value to the education opportunities of the population. The German idea of "Life-Long-Learning" and the extremely high demand of curriculum vitae (CVs), to clearly

[37] Bundesministerium für Bildung und Forschung (2013), retrieved 14th October 2017.
[38] brandEins. Wirtschaftsmagazin (2017), p. 135ff.
[39] The quote results from a speech by Vandana Mehrotra, Executive Vice President State Bank of India (Frankfurt) at the event "Formalizing India's Economy" at India Week Hamburg, 6th November 2017.
[40] brandEins. Wirtschaftsmagazin (2017), p. 135ff.

indicate further education and advanced training have offered interesting economic opportunities to private education providers. In addition, national education providers exist. Only the German Federal Employment Agency (Bundesagentur für Arbeit) offers a 200-page guideline[41] for further education, including its own online system. In fact, the growing education market in Germany has led to a jungle of providers on the internet and offline. Even the German website education server (Bildungsserver)[42] does not include all offers on the markets and neither provides a clear overview depending on each individual search. On the other hand, this process shows how deeply rooted the request and offer for education is in Germany. It could be an interesting option in the future to broaden the availability of education providers supporting the Indian education system, especially because India is one of the world masters in digitalization and e-commerce solutions. In 2008, only six foreign education providers were active in India due to high restrictions by the All India Council for Technical Education (AICTE)[43]. In 2013, the initiative Foreign Education Providers Bill (FEPs India) by the GOI should have provided better access for foreign education providers to India. The outcome, however, remains minimal. In 2016, the debate started again under Prime Minister Narenda Modi`s initiative for a "New education policy",[44] but although there is a basic positive attitude towards the entry of foreign education providers, obstacles for investing and building up a new education centre in India remain (as do market entry obstacles). Several websites of private institutions do not make it easy for German companies to find real reliable partners. On a Canadian website[45] and on an Indian website[46] a small list of providers can be found, but there is no guarantee of reliability by governmental verification as stated above. Moreover, within the "Skill India" campaign, the GOI offers a list of partners on their NSDC website.[47] Thus, a quality management system of verification should be provided by the GOI on a national or federal state level. Therefore, a guideline of standards must be developed (This is not only a problem in India. Even in Germany the quality of the providers differs extremely. Prospective clients can make a decision with the help of supplier quality rating systems (which could be a very interesting idea for an Indian start-up due to their already mentioned high skills in online services). Furthermore, recommendations by companies that are already active in India can help for the moment. A new development in India is the so-

[41] http://kursnet-finden.arbeitsagentur.de/kurs/file?fname=Redaktionshandbuch.pdf, retrieved 3rd October 2017
[42] http://www.bildungsserver.de/institutionen_de.html, retrieved 3rd October 2017
[43] https://wenr.wes.org/2008/11/wenr-november-2008-practical-information, retrieved 3rd October 2017
[44] https://thepienews.com/news/india-10-states-support-opening-up-to-foreign-he-providers/, retrieved 3rd October 2017
[45] http://tradecommissioner.gc.ca/india-inde/visit-info-visiteur/128930.aspx?lang=eng, retrieved 3rd October 2017
[46] http://www.fpsb.co.in/scripts/EPList.aspx, retrieved 3rd October 2017
[47] https://www.nsdcindia.org/New/training-partners-list, retrieved 3rd October 2017.

called Think Labs for education.[48] An example of collaboration between the GOI and a German education provider is a project for the modernisation of public leading facilities for vocational training staff in India. The GOI has authorized a company of the Bavarian bbw-Group (Berufliche Fortbildungszentren der Bayerischen Wirtschaft (bfz) gGmbH) for this project.

5.3 Recommendations related to the Government, Institutions and companies

- One of the promising elements of the German VET that can be implemented in India is the **professional interactions between the Government, companies and trainees** within the German VET system. Financial investments to the trainee and the VET system are shared by the Government and companies approximately by 50%, while at the same time the return on investment is 76%.

German Government	Company	Trainee
•Investment for dual education: € 5.9 billion. •Investment for 1,600 professional schools: € 3.2 billion.	• Investment for vocational training: € 5.6 billion. € •Average Investment per trainee per year: € 15,000 (46% for apprenticeship pay)	•Amortisation of investment of German Government and Company: 76% •Trainees who are working in their field of vocational training later: 43.8%

Figure 19: Subdivision of expenditure on VET in Germany

Source: Author's own analysis and diagram, based on GOVET (2016)

The overlap between the acting players results in a triple benefit in the long-term. Not only the return on investment by the government and company is promising, but also the future of the occupational career of the individual as shown in the graphic below.

[48] Example of a Think Lab: http://www.thinklabs.in/, retrieved 3rd October 2017

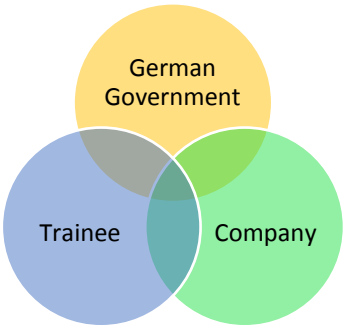

Figure 20: Professional interaction between German Government, Company and Trainee

Source: Author's own design

Secondly, in Germany, companies with apprenticeships can receive a certificate for their service. Interested trainees are able to find them easier and they can research exactly according to their requirements. This model can be implemented in India as well. Regarding the difficulties "for workers with minimal education to access formal skills training"[49], companies can define three different entry levels: low skilled, middle skilled and high skilled, depending on defined curricula. A similar model was developed by the Indo-German Training Center between vocational schools, private industry and chamber of commerce. The IGTC offers programs for skilling people with an age of 15+.[50]

- Access, change and update of **content.** Currently, companies complain that the workforce is educated too theoretically instead of acquiring practical experience and knowledge. In order to work with this information, companies need to specify what kind of practical experience they expect from the trainees. The GOI and federal states need to implement this knowledge in existing curricula or respectively should adapt curricula. Having in mind a vision of self-determined learning and creative thinking, trainees need freedom to decide what to learn, at what time and in which way – of course according to the needs of the companies. A curriculum that offers them the opportunity to choose and a curriculum that demands them to be creative and to take decisions on their own may prepare them much better to the workforce profile that the private sector needs. At this point it is not possible to define new curricula in detail, but lessons about creative thinking, entrepreneurial design and basic knowledge of trade and sales should be a must in a modern Indian education system (This should be implemented in Germany as well!). Nowadays, workshops on personality skills and lessons about Indo-German culture or about international business should be included in curricula.

[49] FICCI, Konrad-Adenauer-Stiftung (n.d.), p. 16
[50] http://mumbai.igtcindia.com/german-dual-education-system, retrieved 29th October 2017.

Saying this, it should be kept in mind that some of the young people in India are not counted as illiterates only because they are able to write their name. In fact, the gap has to be filled with a broad and all-encompassing education offer around the whole of India – with access to as many people as possible. The aim should be to strengthen social integration.

In addition, new professions have emerged not only in Germany, but also in India due to globalization and digitalization. Our world is VUCA (an acronym used to reflect the volatility, uncertainty, complexity and ambiguity in the world) – and therefore the education system needs to be responsive to the changing global social and economic framework. New and versatile skill requirements are increasing from new sectors such as the media, internet, mobile platforms and apps. The main characteristics for new skill demands include the ability for dealing with interactive, engaging, multi-media and multi-channel content. Not least, increasing service orientation and adequate computer skills are indispensable for the content of a future-oriented school education system. In conclusion, the institutionalization of a school of thought is admirable.

Internships as a measure for increasing practical skills of young people, according to the requirements of the companies, have undoubtedly an important role to play, as stated in Chapter 3.1, Figure 6. Similarly, online solutions for internship exchange can deliver good results. In Germany, DAAD and chambers of commerce, as well as several other public and private institutions, offer online access to internships.

- Intensification of Business-to-Organization networks (for example, branch associations), German as well as Indian associations, e.g. the Confederation of Indian Industry. In Chapter 4.2.4., the best practice of UWDMA pointed out successful network structures. Companies who are engaged in the process of improving curricula together with associations can provide skill gaps better. These kinds of innovative partnerships should become a strong pillar in the future for the VET system in India.
- Strengthening of the **network between governmental institutions and the private sector** with the aim to learn from each other and understand the different methods of working, e.g. in the form of a yearly meeting between several parties. The best recent example is the foundation of the National Skill Development Corporation (NSDC), which forms a basic platform for the industry, national institutions, NGOs and existing universities and schools. It includes the first "Skill Development Management System (SDMS), with 1400 training partners, 28,179 training

centres, 16,479 trainers, 20 job portals, 77 assessment agencies and 4,983 empanelled assessors."[51]

- The establishment of **Research Parks** in the field of vocational training provides analogues to existing Research Parks in the field of universities.
- Increasing availability of vocational training **exhibitions, trade fairs** and recruitment trade fairs[52] in several federal states and cities in India: "Strong vocational training in the region"/ "Strong vocational training in the city of Mumbai". These events provide options for companies to present themselves and get new candidates, as well as options for young people to apply at company booths. Companies can increase their offers for apprenticeships and internships[53] and promote themselves at these events. Not least, a trade fair including the education providers is strongly recommended so that they can get in touch with each other and hence diminish the possible investment-barriers mentioned above. IIts and IIMs already offer so-called "Campus Placements".
- Founding an **educational branch fund** in order to overcome the financial burden and to have liquid means either to build up a training centre or expand existing training institutions. Additionally, a fund set up by the government could take over the costs for apprenticeship programmes, school fees, etc.
- Classical **PPPs**[54].
- Intensification of **innovative thinking**, e.g. of the "World of Work", a neologism introduced by Professor Pilz[55]. The term postulates a comprehensive view on the framework of the social and institutional system of an individual and should enable a better transfer of the individual from school to work, based on these circumstances.
- Need for **"turn-key-projects"** due to lack of knowledge in India about dual system implication options and procedures. This idea can be implemented only on the international level because the demand and interest of Indian companies in the German experience is high concerning e.g. quality management systems, key points and advantages of the educational dual system, and

[51] http://www.skilldevelopment.gov.in/nationalskilldevelopmentcorporation.htmlv, retrieved 3rd October 2017.
[52] Example: Recruitment trade fairs in Northern Germany: http://www.hamburg.de/ausbildungsmesse/; - Recruitment trade fair in Hamburg: https://www.einstieg.com/messen/hamburg.html; Regional trade fair in Delitzsch: https://www.berufsorientierung-nordsachsen.de/ausbildung_gut_fuer_die_region_ausbildungsmesse_in_delitzsch.html
[53] The development of an Apprenticeship Training System and Internship Offer can be carried out within cluster networks or with support of institutions (Third Party Approach which will be evaluated below in detail).
[54] A historic initiative and good example for PPP was the Mubarak Kohl Initiative-Dual System (MKI-DS) between Germany and Egypt. The MKI-DS included a partial implementation of German standards on vocational training in Egypt under the former Chancellor Helmut Kohl and former President of Egypt Hosni Mubarak. The interesting point is that 85% of MKI-DS students were offered employment immediately after graduation.
[55] Pilz, Matthias. (ed.) (2016): India: Preparation for the World of Work: Education System and School to Work Transition.

inauguration of cost-effective and economic steps for increasing company intern expert knowledge.

- Intensification of network effects between the GOI, Indian companies, German companies in India, and Indian and German education providers. At least a website that contains an overview of all the acting institutions would be helpful.
- According to the official figures of the Ministry of Labour and Employment, the unemployment rate amongst the higher educated is 9%. German companies, on the other hand, are searching for a highly qualified workforce, as well as for apprentices in Germany in nearly all sectors of industry and service, due to a shortage of young population in an aging society. The intensification of agreements between German and Indian institutions and companies can offer training for an Indian workforce in Germany, as well as locally in India.
- Development of **cluster based training modules** and new modules on practical experiences can fill the gap of low employability levels as stated by the National Employability Report (2014). Successful on-the-job training postulates an adequate preparation. It would be interesting to identify the scope of enhanced cooperation between the GOI, institutions and companies with the help of a catalogue, including the support of the supply side.

German companies who want to invest in India or who want to build up their own training centre or who need a qualified workforce can choose between different operative ways. First of all, they need to know that they have to act more or less by themselves. As shown in Chapter 2, the Indian workforce contributes well to company results due to the high motivation and willingness to work in German companies. In the following sections, the reader will find an evaluation of the different operative ways:

- **Cooperation with branch associations**. To reach a high level of effectivity, cluster-based projects need to be initialized. If there is any association related to the branch of the company, it is highly recommended to check the opportunities for building a cluster. A cluster can be an association itself and consist of several companies from one sector. Together, marketing and promotion measures can be implemented, e.g. at an “Open day” of the companies to recruit new workforce. The cluster forms a speaking tube and lobby in VET. Examples (see Chapter 4.3.4 and 4.3.5) show how in-house-training centres can be built up. Extended cooperation which includes the implementation beyond the lines of the company is very important. Hence, the cooperation with companies from the supply industries of each sector requires additional competencies. A VET structure covering different sections needs governmental regulation and commitment from the supply side of the labour market at the same time.

- Getting in **contact with** one of the major **institutional players** on the Indian market, like GIZ, FICCI and AHK. Alternatively, education-oriented players as mentioned in Chapter 5.2 are possible partners for support and advice.
- Direct **approach with non-governmental institutions who support implementation of VET** in India based on the German model. One of the biggest institutions is Don Bosco Mondo, e.V. (see best-practice in Chapter 4). For German companies working abroad, besides investments in production or service units, a skilled workforce is the key to success. In a partnership of companies and close-by Don Bosco Institutes, Don Bosco Mondo trains young people according to the needs of the company. Appropriate institutions develop a tailor-made model together with the company that will satisfy not only the company`s needs, but also benefit the training VET Institutes and most importantly give young people better prospects for the future.
- Getting in **contact with competitors or companies of the same branch** in the same city or region in order to build intra-industry-clusters for implementing vocational training. One of the institutional partners for cluster-networks is the Indo-German Chamber of Commerce, which states: *"Especially the idea of a cluster approach emerged and the idea of trying out the dual principles in a holistic environment of selected industry clusters has found many supporters."*[56]
- If companies are already acting in India, it might be interesting to get in contact with one of the **education service providers** on the Indian market (see Chapter 5.2, p. 58).
- Set-up of **branch-related meetings** with governmental institutions or institutions acting at the federal state level. Lessons learned in Germany regarding the involvement of chambers can be implemented also in India. The guiding vision is to establish a conference on "Development of curricula" where companies participate *how* curricula can be developed (as stated above). The conference should have a non-profit purpose. It aims to create clarity in the common and flexible guidelines of curricula (national level), which can be interpreted individually (local level). On a local level, schools and companies are able to adapt their requirements and particular issues. In Germany, a classic curriculum comprises only 15 pages for approximately a 3.5-year education period. Thus, 15 pages (per sector, in total around 300 curricula) provide the comprehensive orientation for all schools and companies in Germany. The German Chambers of Commerce (IHKs) do not only advise companies on VET and offer training to in-company trainers, but they also support companies and apprentices regarding training contracts, and organize final exams. The training contract is clearly defined as a legal basis for

[56] http://indien.ahk.de/de/training/vocational-education-training/, retrieved 5th October 2017.

in-company training in Dual VET and includes the duration of training, probation time, vacation and content of training. Thus, the regulation is carried out by a third (independent) party and ensures the legal framework. In parallel, the federal government supports institutionalised VET research by the BIBB for further development of the dual VET standards GOVET (2016). A major point for successful development of curricula within branch-related meetings is shown in a simple infrastructural graphical system below.

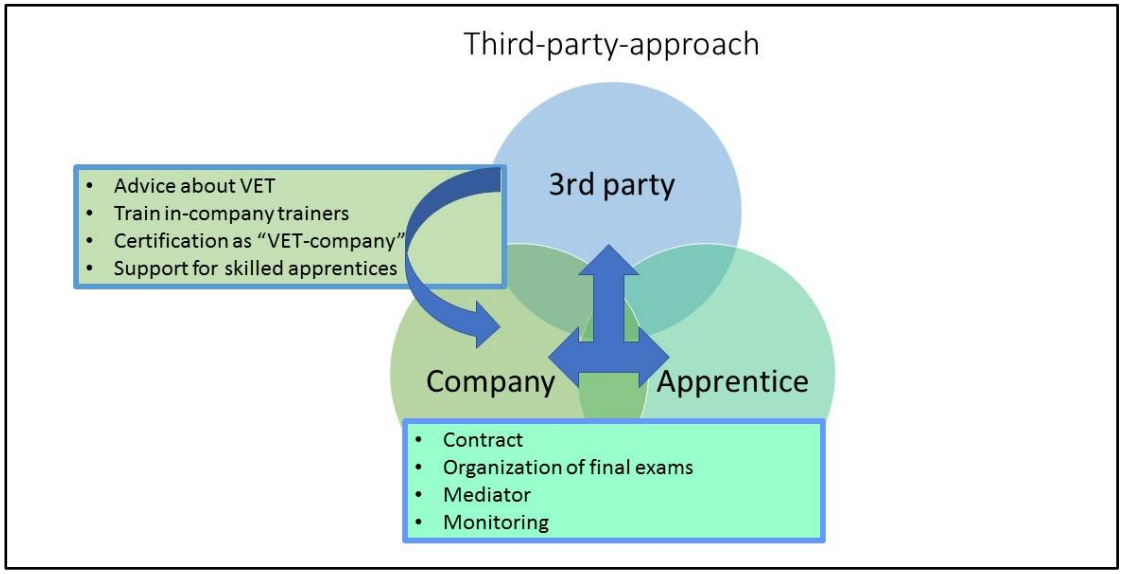

Figure 21: Third-party-approach: Support of Dual VET through 3rd party

Source: Author`s own analysis and diagram

Compared to India, there is no necessity to replace the German IHK with the kind of similar Indian IHK. For example, tasks of the third party can be fulfilled also by branch associations or confederations. The objective is highlighted in the title: The private sector (be it Mittelstand or larger companies) needs to realise the importance of the third party as a helpful player and mediator in addition to the acting player set of company and apprentice. The third-party-approach formulates a form of vocational training where the private sector organizes itself *in addition* to public structures. The idea enforces a re-thinking in the private sector that brings effectivity and better business in the long-term. It underlies the need for a contribution by the private sector. In fact, it includes strategic thinking of business interconnections and branches related to the B-to-B network. It also includes the apprentice as a major part because s/he is essential to the company's profits. Not least, the third-party-approach is highly international and collects the stream of globalization in India, because Indian and German, as well as companies from other nations can be part of it. Ideally, in the future, there will be different

inter-branch-networks/sector-based networks. In Chapter 4.3.4, the best practice of UWDMA has shown very positive results and a new sphere of collaboration in India.

- The above given recommendations of cooperative measures provide answers to the initial questions and as one conclusion, the **establishment of a "VET alliance",** with a clear division of responsibilities, could be an additional progressive step towards the improvement of VET in India. The graphic below highlights the process that covers all steps of curricula development (as an example):

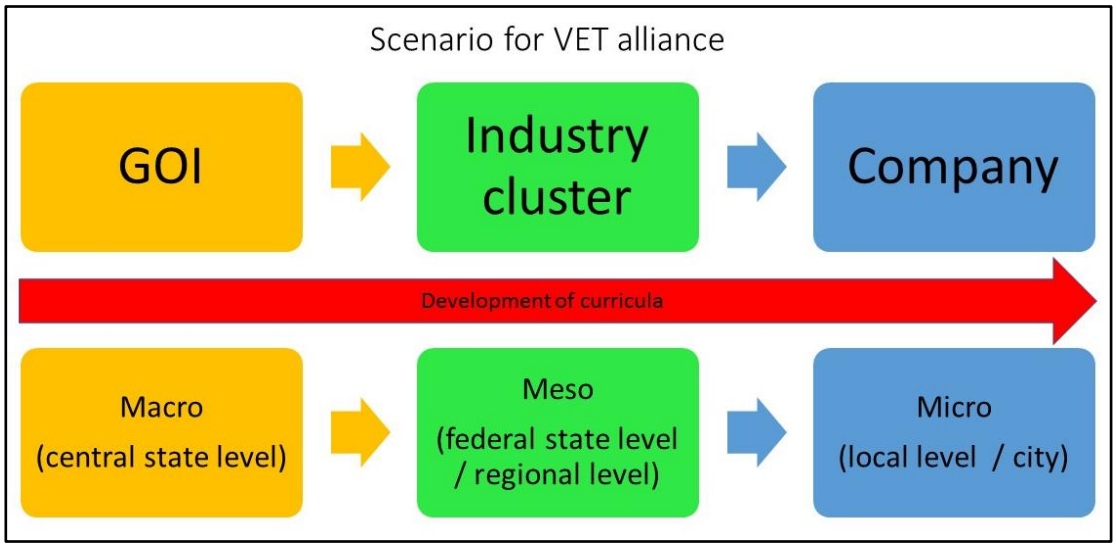

Figure 22: Scenario: Process of responsibilities in VET alliance for development of curricula

Source: Author`s own analysis and diagram, based on information by Johannes Strittmatter, GIZ

In conclusion and according to the German dual model of the VET system, the graphic highlights that the initial decisions and the general framework on standards of VET (including the development of curricula as a key part) are taken at the macro level. Step by step, the process is delegated to the next player at the meso and micro levels. The details for development of VET curricula can be organized on the meso level with input from the micro level, with a guiding framework on the macro level. The advantages of free decision making and a framework for individual requirements at the micro level remain. The scenario for a VET alliance would be a good example of a centralised but locally driven skill development initiative. Visionary, the alliance aims to reach a scenario where all players internalize a collective thinking in one union. As a modern and technological oriented nation, knowledge transfer might be extended through inviting scientific and research organizations to join the conferences on a meso level. The specifics of the intercultural level can be represented well by scientific and research organizations, especially due to highly professional, bilateral cooperation already existing in scientific areas. Not least, their solutions are long-lasting as well as the visions of the GOI. To build up an alliance from existing industry-research initiatives and cooperations (which are supported for example by the

German Fraunhofer Institute) can allow the Indo-German relations to achieve outstanding top level practical and intellectual knowledge and workforce transfer. Finally, the beneficial outcomes for all stakeholders is expressed in the following graphic:

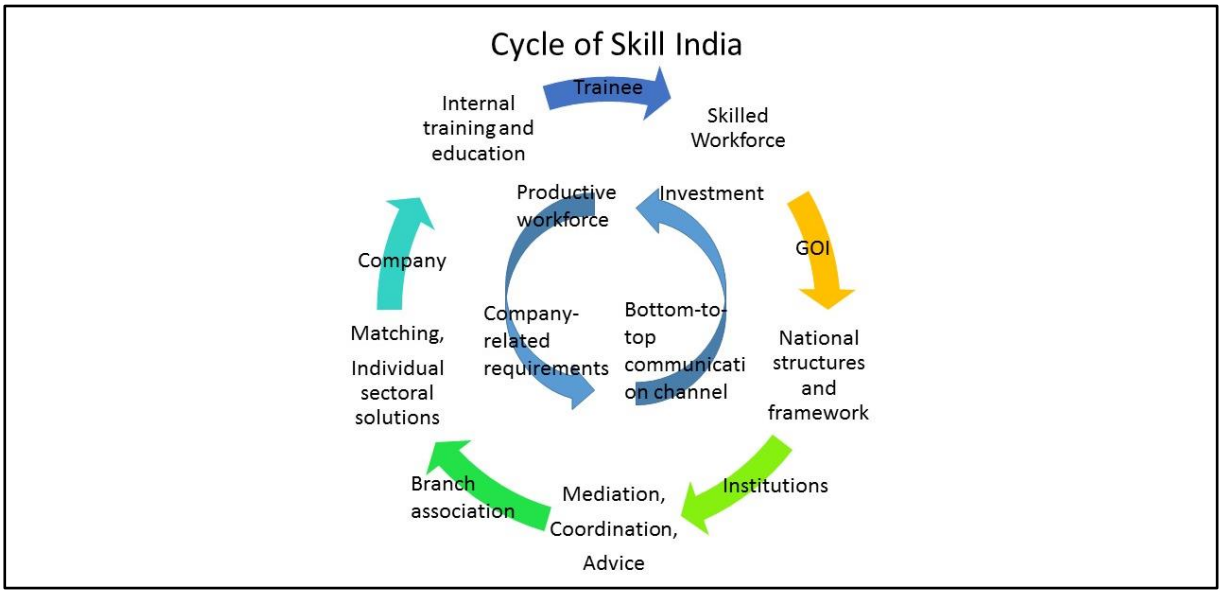

Figure 23: Cycle of Skill India

Source: Author's own analysis and diagram

Skill India starts in a common framework. The interest of the German Government and industry in this kind of alliance can only be on the maximum size due to the emerging Indian market. As a historic partner and seeing a globally competitive country, the interest for deepening the relationship with India, investing in holistic transfer and a common identification of long-term goals in the education system, Germany should have a win-win situation for the future with India.

The previous sections have showcased challenges and opportunities faced by stakeholders. This analysis has demonstrated that the scope of expansion of Vocational Training partnerships between Germany and India has obvious strengths and both countries can benefit from synergies, knowledge and workforce transfer. The vision of strong economies and a nation like India being the country with the highest economic growth and one of the strongest workforce settings in the world, is and should remain a high motivation factor for further collaboration. Not least, in India, it is necessary to discover and develop a vision of common thinking, social responsibility and consciousness regarding the importance of education. It is wishful and necessary for further progress to intensify collective thinking on the potential of vocational training within the Indian culture and economy. A general consciousness about the importance of vocational training has to become a strong pillar of the VET system.

As India's advancement is characterized by frugal potential, speed and innovation, it is high time to implement the given opportunities, ideas and concrete solutions for these challenges. The prosperity of the nation can be traced back to the education of the workforce. India is developing fast, but it needs to implement substantial reforms, as development is overtaking the system. At the same time, cultural factors require localized solutions. Measures need to be taken immediately and controlled systematically. A fulfilment of fundamental social needs and an adaption of traditional national mind-sets is urgently required. In India, governmental institutions, as well as the growing middle class and companies themselves, have already started re-thinking how to develop the country. It is no solution to educate only 1/3 of 1.3 billion people. Every single human being in India contributes to the national BIP, so everyone should be able to participate in the education system from a young age. A nation like India is not able to grow steadily without taking into consideration that males as well as females need to be part of the development. India should not only see the percentages of economic growth as it becomes the strongest player in Asia. India should also grow as a whole nation including the whole society, striving to reduce its GINI coefficient and increase the ratio of educated people on a national level. India will be one of the strongest players in the world in the long-term if society, education and economy go hand in hand and form a strong golden triangle.

As the GOI is seeking new solutions, Germany can provide a solid and competent partner for sharing ideas and solutions in the field of process and organization management. Germany has already learned that a complete adoption of the dual system is not meaningful, but rather it forms a basis for accompanying the Indian way in the future. Supervision, orientation and support given by Germany with a common Indo-German perspective and vision, regarding the subject of vocational training, will generate extraordinary benefits for both countries, allow major scope for expansion and create an individual Indian solution with Germany guidance. Germany as a trustful and traditional partner is looking forward to going hand in hand with India.

6. Useful contacts in German and India

Germany	India
Ministries	
Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (BMZ) Postadresse: Postfach 12 03 22 53045 Bonn Besuchsadresse 1: Dahlmannstraße 4 53113 Bonn Besuchsadresse 2: Stresemannstraße 94 10963 Berlin P: 0049 (0)30 185 35-0 F: 0049 (0)30 185 35-25 01 W: www.bmz.de Agentur für Wirtschaft & Entwicklung E: info@wirtschaft-entwicklung.de P: 0049 (0)30 726 256 80 W: www.wirtschaft-entwicklung.de	
Bundesministerium für Bildung und Forschung (BMBF) Kapelle-Ufer 1 D-10117 Berlin P: 0049 (0)30 18 57-0 or (0)228 99 57-0 F: 0049 (0)30 18 57-5503 or (0)228 99 57-3601 E: bmbf@bmbf.bund.de W: www.bmbf.de	Ministry of Skill Development and Entrepreneurship (MSDE) 2nd Floor, Annexe Building Shivaji Stadium Shaheed Bhagat Singh Marg, Connaught Place New Delhi - 110001 P: 0091 11-23450855 W: www.skilldevelopment.gov.in
	National Skill Development Corporation 301-306, 3rd Floor, West Wing, World Mark 1, Aerocity New Delhi - 110037

	P: 0091-11-47451600-10 F: 0091-11-46560417 W: www.nsdcindia.org
Chambers, Consulates and Institutions	
Bertelsmann Stiftung Carl-Bertelsmann-Str. 256 33311 Gütersloh Deutschland P: 0049 (0)5241 81-0 F: 0049 (0)5241 81-81999 W: www.bertelsmann-stiftung.de	
	Confederation of Indian Industry (CII) Supriya Banerjee, Neeta Pradan Das 249-F, Sector 18, Udyog Vihar Phase IV Gurgaon – 122015 W: www.cii.in
Bundesinstitut für Berufsbildung (BIBB) iMOVE: Training - Made in Germany Robert-Schuman-Platz 3 Mr. Ulrich Meinecke P: 0049 (0)228 107-1770 53175 Bonn W: www.bibb.de/govet/de/10050.php	iMOVE Office India c/o sequa Liaison Office India B-160, Sector 44, Noida - 201301 P: 0091 120 437 5572 M: 0091 991 051 3666 W: www.imove-germany.de
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH Friedrich-Ebert-Allee 36 + 40 53113 Bonn P: 0049 (0)228 44 60-0 F: 0049 (0)228 4460-17 66 Dag-Hammarskjöld-Weg 1-5 65760 Eschborn P: 0049 (0)6196 79-0 F: 0049 (0)6196 79-11 15	GIZ Office New Delhi B 5 / 1, Safdarjung Enclave, New Delhi, Delhi - 110029 P: 0091 11 4949 5353 E: giz-indien@giz.de, igvet@giz.de W: www.giz.de/en Country Director: Ulrike Reviere

E: info@giz.de W: www.giz.de	
Don Bosco Mondo e.V. Sträßchensweg 3 53113 Bonn P: 0049 (0)228 53965-37 F: 0049 (0)228 53965-65 E: corporate@don-bosco-mondo.de W: www.don-bosco-mondo.de	
Deutsch-Indische Handelskammer, Verbindungsbüro Deutschland Citadellstraße 12 40213 Düsseldorf Mr. Dirk Matter, CEO P: 0049 (0)211 – 360597 E: matter@indo-german.com W: http://indien.ahk.de	Indo-German Chamber of Commerce German House 2, Nyaya Marg Chanakyapuri New Delhi 110021 P: 0091 11 47168 888 / 801 F: 0091 11 26118 664 E: delhi@indo-german.com W: http://indien.ahk.de
Industrie- und Handelskammern Deutschland W: www.ihk.de	Federation of Indian Chambers of Commerce and Industry (FICCI) Labour, Employment & Skill Development Division B. P. Pant, Ashutosh Raina Federation House, Tansen Marg New Delhi – 110001 W: www.ficci.com
	The Associated Chambers of Commerce and Industry of India (ASSOCHAM) 1, Community Centre, Zamrudpur Kailash Colony New Delhi – 11004 8 W: www.assocham.org

	German Centre for Industry and Trade Delhi Pvt. Ltd. Building N° 9, Tower B, Level 12 DLF Cyber City Phase III Gurgaon – 122002 Haryana P: 0091 124 463-6000 Martin Fuchs, Managing Director E: martin.fuchs@gurgaon.germancentre.com W: www.gurgaon.germancentre.com
	PHD Chamber of Commerce and Industry Rashmi Aggarwal PHD House 4/2 Siri Institutional Area, August Kranti Marg New Delhi – 110016 W: www.phdcci.in
Embassy of India in Germany Tiergartenstraße 17 10785 Berlin P: 0049-30-257950 F: 0049 (0)30 26557000 E: com1.berlin@mea.gov.in W: www.indianembassy.de	German Embassy of the Federal Republic of Germany 6/50 G Shantipath, Chanakyapuri New Delhi – 110021 P: 0091 – 11 – 44 19 91 99 E: soz-1@newd.auswaertiges-amt.de W: www.new-delhi.diplo.de
Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. Annika Wust Hansastraße 27c 80686 München P: 0049 (0)89 1205-4717 F: 0049 (0) 89 1205-774717 W: www.fraunhofer.de	Fraunhofer Representative Office India Anandi Iyer 405/406 Prestige Meridian II Towers No. 30, M.G. Road 560 001 Bangalore P: 0091 80 40965008 F: 0091 80 40904724 W: www.fraunhofer.in

Indisches Generalkonsulat in Hamburg Graumannsweg 57 22087 Hamburg P: 0049 (0)40 33 80 36 or (0)40 32 47 44 or (0)40 33 05 57 F: 0049 (0)40-32 37 57 W: www.cgihamburg.de	German Consulate General in Mumbai 9th Floor, Hoechst House, 193 Backbay Reclamation, Nariman Point, Mumbai 400 021 P: 0091 22 2283 2422 F: 0091 22 2202 5493 W: www.india.diplo.de
	UWDMA C/o Fenesta Plot#52, Sec32, Institutional Area, Gurgaon-122003, Haryana E: info@uwdmaindia.org W: www.uwdmaindia.org
Cleaning Systems VDMA Dr. Peter Hug Federation Lyoner Str. 18 60528 Frankfurt P: 0049 (0)173 740 080 9 E: peter.hug@vdma.org W: www.vdma.de	German Engineering Federation (VDMA) Sandip Roy Senior Manager GC-36, Sector III. Salt Lake Kolkata -700106 P: 0091 33 406 023 64 E: sandip.roy@vdmaindia.org W: www.vdma.de

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About the author

Yvonne Julia Metzger, M.A.

As founder and CEO of markets and more (www.marketsandmore.de), Yvonne Julia Metzger, M.A., is specialized in international business and contact management with a particular focus on Indo-German and German-Dutch collaborations. As CEO of markets and more, she is successful for several companies as project, interim, marketing and sales manager, consultant and trainer. markets and more advises German, Dutch and Indian companies in the business fields of country-specific intercultural and economic questions, market development and management solutions.

With more than 10 years of international working experience, her projects include development and implementation of marketing strategies, as well as searching strategic partnerships. Networking management, innovative thinking, as well as strategic market research solutions and operative project management tasks are part of her daily work. Her references include SMEs and global players in Germany, Europe and India. Yvonne Julia Metzger has been to India several times, joined trade fairs and international conferences, and has been working as a project manager for a pharmaceutical company.

In addition, Yvonne Julia Metzger has been active as General Manager of BVMW India and official representative of Bundesverband für Mittelständische Wirtschaft e.V. (Germany`s largest association for SMEs) in the metropolitan region of Hamburg for several years.

She has built up and guided the medical department of sales and marketing at one of the leading laser fiber manufacturers in Germany. Previously, she organized more than 30 business events and German-Dutch B2B projects as project manager at the German-Dutch Chamber of Commerce in The Hague. Her fundamental experience in market research and customer relationship management complete her career profile.

In 2016, she founded the Indo-German Medical Forum (www.igmf.info). The initiative offers a professional platform for German and Indian companies to expand their experiences and knowledge in the most important and topical issues on medical, pharmaceutical and biotechnological questions. Experts involved have the aim to advance medical treatment and technology in both countries.

For her work with her company markets and more, Yvonne Julia Metzger, has received the AWARD “Successful entrepreneur 2016”.

Figure 24: Team India for WorldSkills Abu Dhabi 2017

Publisher:

Consulate General of India

Graumannsweg 57

22087 Hamburg

Germany

P: 0049 (0)40 338036 / 324744 / 330557

F: 0049 (0)40 323757

E: com.hamburg@mea.gov.in

W: www.cgihamburg.de

Youtube: congendiahamburg

Twitter: @indiainhamburg

Facebook: ConsulateGeneralofIndiaHamburgGermany

Image on top: Team India for WorldSkills Abu Dhabi 2017 attended the celebration of World Youth Skills Day on 15th July 2017. They were felicitated by Shri. Rajiv Pratap Rudy, Union Minister of State Skill Development and Entrepreneurship, Government of India. Source: http://www.worldskillsindia.co.in