



Reimagining
Vocational
Education in India

The
**Missing
Piece**







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FICCI Skill Development Leadership



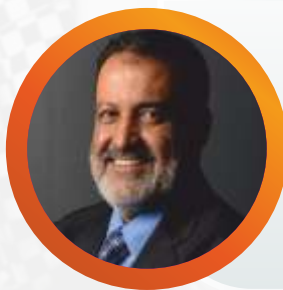
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Message from the Taskforce's Chair

India's economic growth has received appreciation and recognition globally. Over the last 3 decades, the transformation of the Indian economy has been quite remarkable and conspicuous. Being the youngest nation in the world, India has an edge over the rest of the world as regards the human capital. However, several challenges, if not addressed, may turn the much-touted demographic dividend into a demographic disaster. Our economic growth must ensure that enough livelihood opportunities are generated for the ever-increasing workforce. In this context, one of the areas where improvement is urgently required in India is vocational education. The future of vocational education could be an amalgamation of transformation action driven by Education 4.0, National Education Policy (NEP) 2020, opportunities created by pandemic, emerging student needs and new technologies.

This paper focuses on the significance of vocational education in the country to meet the demands of the skilled workforce required by industry, making it necessary to prepare the youth with 'New Age Skills'. Although the government has initiated many schemes and programs for skill training, the newly drafted National Education Policy (NEP) 2020 is disruptive and transformational, like a breath of fresh air and it has all the ingredients to chart a new course. It emphasizes that more Higher Educational Institutions (HEIs) shall be established and developed in underserved regions to ensure full access, equity, and inclusion. It also states that

by 2025, at least 50% of learners through the school and higher education system shall have exposure to vocational programs. NEP 2020, is a futuristic document aimed at revolutionizing the Indian education landscape, and focuses on many aspects of Education 4.0 and the future of education. This includes flexibility, customization, student experience and technology integration. This policy could help formally regulate and propel the future of vocational education in the right and sustainable direction.

This paper takes an initial step, adding value to the concept of Education 4.0, by calling out the need for transforming the current formal two-pillar education system viz K-12 and "H.Ed." into a three-pillar system by recommending the institutionalization of a middle pillar; the third pillar. This middle pillar, in essence, a bridge, is characterized by a formal Vocational Education piece which can be stand-alone and yet contiguous with K-12 and "H.Ed." in a seamless manner. Such a move will also help drive the fungibility of credits acquisition and accumulation, which the NEP refers to, making the concept of credits more realizable and actionable. The paper delves into some cases of good practices of countries that we consider are ahead of the curve in their vision and execution. It also shares some recommendations on implementable actions for alignment with the new vocational education landscape.

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Introduction

India is one of the fastest-growing economies globally and has the vision to become a \$40 trillion economy by 2047. It is one of the youngest nations with around 66% of the total population (more than 800 million) below the age of 35. Around 62.5% of India's working age population is aged between 15 and 59 years, ensuring that India will have a demographic advantage all the way to 2055¹. The Indian labour force is set to grow by over 8 million per annum over the coming decade, most of which will be driven by youth entering the labour market.

One of the major challenges for policymakers in the current workforce landscape is to create gainful employment and meaningful work opportunities for the ever-increasing educated youth. While this is one aspect of the demand-supply challenge, the other aspect, surprisingly contradictory is the vast number of educated but unemployed young people. When this rather strange dichotomy is nuanced, one will notice that a significant portion of unemployment is by choice. Close to 50% of undergraduate engineering capacity lies unutilised due to the want of students; albeit the reason being a low or inefficient ROI 'return on investment' of time and money. Additionally, growing unemployment amongst the educated youth poses a serious threat to the value of traditional education. Not to miss a special mention to young people who are Neither in Education, Employment or Training (NEET).

We think there is an opportunity to improve the return on investment (ROI) on vocational education courses by reducing the years of post-school skill-based education. This could be possibly be done through a 'third' sector inserted in the middle of School and Higher Education. This could unlock hidden potential and may address the challenges stated above, besides opening up new avenues that could re-frame and re-orient the entire education and skilling landscape.

Vocational education in India has grown alongside the industry needs, which is supposed to prepare trained manpower. Over the past decade, a lot of effort has been directed to short-term training, essentially described as 'minimum employable skills' which opens doors for entry level employment, rather than looking at vocational education as a whole. The National Education Policy (NEP) 2020 aims to "overcome the social status hierarchy associated with vocational education" by integrating it with mainstream education in a "phased manner." This has been proposed to be accomplished by the creation of a National Higher Education Qualification Framework (NHEQF), which will be coordinated with the National Skills Qualification Framework (NSQF) for ease of mobility between streams. This integration has been planned from the upper primary segment onwards, by offering short-term

internships with indigenous artists, craftspeople, and blue-collar professionals. The policy also perceives it as a way of 'emphasising the dignity of labour'.

Qualification Frameworks (QFs) are global policy tools, usually adopted by economies to reform vocational education systems. While the NSQF is an outcome-based level descriptor, which specifies what skill, knowledge or aptitude one must possess at a particular level in the vocational education space, NHEQF will perform the same function in the higher education space. Although Section 18.8 of NEP 2020 aims to "empower institutions," outcome-based Qualification Frameworks (QFs) in vocational education are infamous for undermining educational institutions. This is because outcomes or competencies can be acquired irrespective of the input factors, such as a particular educational institute, curriculum, or pedagogy. This essentially means that any skill or vocation can be provided with credit, whether it is acquired in a formal, informal, or non-formal setting. For years, the acceptability of education in India has been through Institutions in the formal settings which is why NSQF has thus far failed to reform Vocational Education and Training (VET) in India. However, this does not necessarily mean that another qualification framework, albeit in the higher education space, will fail too. NHEQF can thus be hailed as a constructive recommendation if the process of design and implementation considers certain critical nuances.

Although QFs do not have a widely positive success rate in most countries, it has been successful only in cases where educational institutions have led the way and all stakeholders have equally contributed to the building of the vocational education systems, such as in the case of the Scottish Credit and Qualification Framework (SCQF). In fact, the SCQF is an umbrella framework that has several sub frameworks that comprise general, vocational, and higher education and training systems. Similarly, although the South African Qualification Framework encompassed all streams of education at the time of inception, it was recently modified to create sub frameworks in general education, higher education and vocational training, following wide criticism of the original framework that failed to reform its education system. This shows the way ahead for NHEQF and NSQF where educational institutes should play an active role in determining the design, curriculum, and pedagogy, instead of other private stakeholders supplying the ready material for institutes to follow.

The proposed "National Committee for the Integration of Vocational Education (NCIVE)" will have to undertake the exercise of carefully detailing the NSQF further, as suggested in the NEP 2020. While doing so, it is also necessary for this committee to simultaneously correspond with NHEQF for viable horizontal credit transfers and equivalence.

¹<https://indbiz.gov.in/>



Scope & Intent of the Paper

In our country, Vocational Education is still considered to be outside of mainstream education and ironically, not looked at as one of the critical pillars of education. Even today, our education system lays overemphasis on knowledge-oriented training based on rote learning rather than emphasising on what a student could perform in real life using his/her mind and hands. Hence, there is an urgent need to re-orient our perception and meaningfully engage students in school toward vocational education as an alternative career choice.

We strongly believe that a mature sovereign education system must, clearly and unambiguously, be a 3-box system yet fungible enough to demonstrate a seamless transition from one box to the next, in a linear and progressive fashion on the back of accumulated credits based progression pathways.



The paper intends to extend the articulations of the Vocationalisation of education represented in the NEP, make suggestions for its implementation, and thereafter make a case for carrying out a hitherto missing component of a mature and holistic education system. We believe that a formal vocational education system will address a few select recalcitrant challenges of the current education system. The few critical challenges are:

1. Poor employability outcomes of the current H. Ed. system
2. Poor industry-academia linkages that affect the H. Ed. system
3. Discontinuous transition from School to H. Ed. without a 'layover' in-between
4. Absence of an opportunity for youth to discover vocations, identify and unlock hidden passions that can drive very gainful lifelong livelihoods
5. Trigger the much desired but elusive 'lifelong learning' agenda





Preamble

Every education system in the world follows a similar template; individuals progress from school to college and then to a university in an accretive manner, transitioning from breadth of faculties in early years to depth of a select faculty or stream acquiring a depth of knowledge that eventually must lead to a sustainable livelihood. One moves from general to specialization achieving knowledge and skill in a particular domain. Several countries worldwide articulate a 3-step system of the entire education value chain viz School-Vocational-Higher.

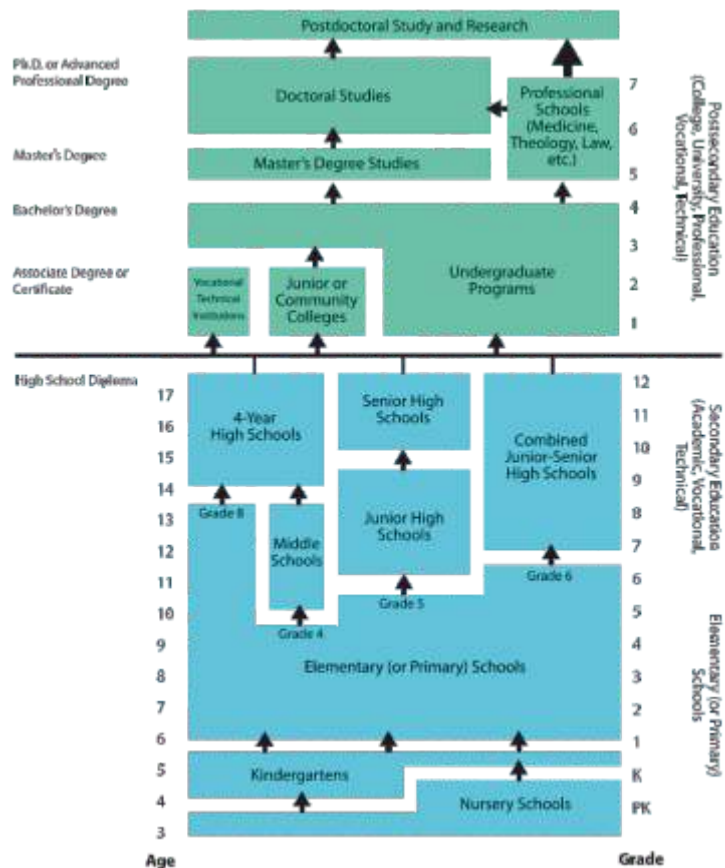
In most countries, Higher Education is meant to be pursued at the university level where students seek to indulge in research and very deep pursuits in highly specialized areas and many a time to build livelihoods in academia. A healthy Vocational Education system supported by a well-governed accreditation and credentialing system is the most sought-after route to achieving credentials that can be directly linked to the world of work. So essentially, in these very countries, a formal and thriving Vocational Education system empowers people to seek 'employability-centric education with very significant positive outcomes. Such a system also propagates a very healthy and vibrant industry-academia partnership. There are several examples of a thriving Vocational Education system viz. the FE colleges in the United Kingdom and Community Colleges in the United States of America.

Merely based on the dictionary definition of the word, VE is undoubtedly linked to employment. The core purpose of vocational education is to impart employability in a particular field or area, for example Automotive Design or Culinary Art. While VE is area or domain specific, it is not necessarily as granular as Skills Education & Training which is usually very sharply pegged to a specific job role or to a very narrow work scope.

A Mechanical Engineering program is a broad field of study that may encompass several layers of domains & sub-domains over a 4-year study duration. A few examples of such domains & sub-domains are Automobile Engineering, CAD,

Machine Tools, Manufacturing, Aircon & refrigeration, etc.

¹<https://indbiz.gov.in/>



However, Automobile Engineering as a discipline can be a field of VE by itself as it is specific to a particular domain. It can lead to specifically identified livelihoods linked to automobile engineering job roles in the automobile sector.

VE can be further divided into two parts viz:

- 1/2/3 year programs leading to Certificates, Associate Diplomas, Diploma and Advanced Diploma credentials respectively delivered in Polytechnics and/or VE colleges (similar to FE colleges or Community Colleges)
- Short term skill training programs, which too can be offered in Polytechnics or Skill Training Centres that exist under the Ministry of Skill Development & Entrepreneurship (MSDE), Government of India

International Best Practices

The Swiss dual education system: Swiss VPET System

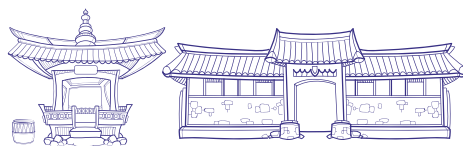
The Swiss VPET system is a modern version of the Swiss dual education system where Vocational Education and Training (VET) is provided at the upper-secondary level, and Professional Education (PE) is provided at the tertiary level. Both VET and PE uses clearly defined training plans and national qualification procedures. They are also characterized by a high degree of permeability, the ability to pursue subsequent education and training opportunities, switch between vocational/ professional pathways and general education/ university pathways and change the course of their working lives. The Swiss VPET system offers a broad selection of available training options. These courses cater to different abilities and are geared to the needs of different groups. A wide range of job-related Continuing Education and Training (CET) courses can also be found at all levels.



Korean Dual Education System

The Korean Work-Learning Dual System, enforced in 2014, takes some elements of the apprenticeship system implemented in countries such as Germany and Switzerland and introduces it in a manner suitable to Korean society. In this system, companies hire youth seeking employment as workers (henceforth workers taking part in study programs) and provide them with systematic on-site education and training with educational institutes such as schools to raise the practical workforce required at workplaces. Those who have completed their education and training have their capabilities evaluated by the government or relevant industries' organizations, and their skills are recognized through qualifications and other similar award systems.

In other words, companies employ students or job seekers and have them perform job duties while also providing them with education and training to develop them into skilled workers. The system is field-based, and teaching generally takes place on-site, with schools and other education and training institutes providing complementary theoretical education. Furthermore, under the National Competency Standards (NCS)-based education and training program, on-site company instructors teach the students using learning tools that are practically used on the job. The system is expected to solve the mismatch in the labour market by providing early employment for job seekers and reducing re-education expenses for newly hired employees for companies.





Vocational Education and Training in Germany

Vocational Education in Germany is part of the national education system. Students commence training after the 9th grade of school at the earliest. The courses last from 2 to 3.5 years. The legal basis of the German VET system is the VET Act (BBiG) from 1969, which has been subsequently revised. In general, more than 50% of those in upper general education opt for such vocational training. The two central pillars of the dual system are the workplace within a company and part-time vocational school. The company provides practical training while the vocational school supplements this on-the-job learning with theoretical instruction. Learning at both venues is governed by distinct but coordinated regulations. There are about 350 occupations in the technical, agricultural, commercial, and industrial areas. It also includes the public administration sector, health, and social services.

As a rule, trainees spend eight to twelve hours per week at school; the remaining time is spent at the actual worksite. To become an apprentice in the dual system, a young person must apply to a company for an apprenticeship and sign a training contract. The right to attend the corresponding classes at the part-time vocational school is given automatically. The vocational course ends with an assessment held by an appropriate authority. The latter includes various chambers such as the Chamber of Trades and Handicrafts, the Chamber of Industry and the Chamber of Commerce, the Bar Association, and the Schools of Administration. The relevant chamber shall establish boards of examiners consisting of employers, employees, and at least one vocational school teacher for the students' final examination.





Vocational Educational Landscape (against the backdrop of New Education Policy 2020)

“The lack of planning and the poor delivery of vocational education in the past has contributed to the creation of a social status hierarchy in which vocational education is perceived to be inferior to mainstream education, meant largely for students who are unable to cope with the latter. This is a perception that persists even today and affects the choices students make. It is a serious concern that can only be dealt with by a complete re-imagination of how vocational education is offered to students in the future.” - NEP 2020

The above quoted para from the NEP document is seminal as a cornerstone for the maladies that VE has been historically afflicted with.

A few of the more, not so obvious, challenges of the current system are as follows:

1. Poor demand for B. Voc programs that were announced with much fanfare and more importantly 'hope'
2. The reluctance by many Universities to offer B. Voc programs inspite of several plea attempts by AICTE, UGC, Ministry of Education, etc
3. The stigma attached with VE that has been highlighted in the NEP, our social fabric and the 'education caste' system which clearly puts those who have an ITI Diploma or a Polytechnic Diploma at a social disadvantage; these students are considered as 'children of a lesser God'
4. Even today, in the Ministry of Education, there is a Department of School Education and a Dept of Higher Education but a Dept of VE is non-existent
5. Distributed responsibility of VE between K-12 and H. Ed. makes it no one's responsibility even though it is everyone's problem

The NEP has called out the need for re-imagining VE if we need to establish it firmly and convincingly in our current circumstances. It takes a leaf out of Mahatma Gandhi's 'Nai Talim' which aimed to revamp the education system by promoting the training of the head, heart, and hand. The idea was to promote the participation of local communities in education so that individuals can find meaning in

what they do. This helps in making the choice of vocational education more meaningful and relevant for the learners.

The key recommendations made in the NEP ensure two major outcomes:

1. Students must experience and experiment with vocational subjects at the middle and secondary school level, fortified with a formal system of recognition of these subjects in formative & summative assessments during middle and senior school years and clear visibility on progression pathways to H. Ed.
2. The active adoption of VE in the H.Ed. system not only restricted allowances at entry level but also vocational subject offerings in the form of certificates, degrees, and diplomas on the back of the NSQF framework

The above recommendations are empowered and supported by enabling policies and metrics such as recalibration of GER ratios to account for vocational education, the NSQF framework to support smooth progression into H.Ed., setting up new H.Ed. institutions with a vocational flavour, adoption of ITI and Polytechnics by H.Ed. institutions and much more.

The NEP specifies the need to ensure that there are no hard separations between vocational education and academic streams. It also calls for at least 50% of learners in high schools and higher educational institutions to receive exposure to vocational education by 2025. To achieve this ambitious target, education and vocational education departments will need to work in tandem- right from planning, to process and execution. There are several recommendations and existing policy tweaks that will support VE.

However, all said and done, the NEP does clearly call out the complete re-imagination of how vocational education should be offered to students.



Recommendations for Re-Imagining VE

While policy tweaks and bold modifications to existing policies & practices will further promote inclusion of VE in the current School and H.Ed. system, there is a need to take a fresh, holistic, and revolutionary approach to VE thereby seriously re-imagining the entire sector and ensuring its rightful place in India's education system.

We recommend a **three-pronged approach** to re-construct the vocational education landscape:

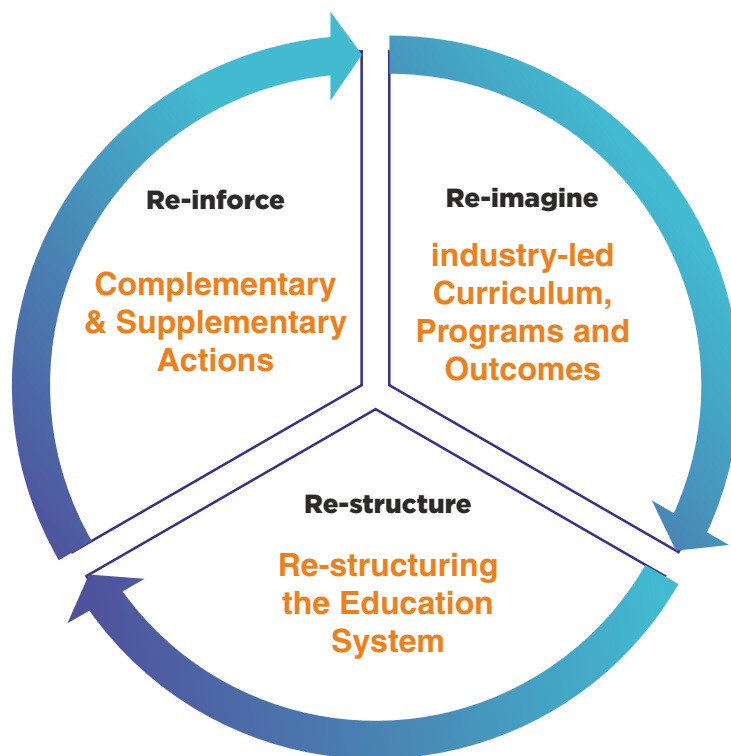
Prong 1: Re-structuring the education system components

- Formalise a Dept. of VE under the MoE and give it equal status as Dept. of School & Dept. of H.Ed.
- Rejuvenate the Polytechnics, Vocational Training Institutes, and ITIs; put in place a PPP model to attract industry participation which will also support the apprenticeships drive
- Position the Polytechnics, Vocational Training Institutes, and ITIs to be the cornerstones of a new education system designed around outcomes & livelihoods
- All central universities to have an embedded Vocational Cell within them
- Polytechnics, Vocational Training Institutes, and ITIs to be linked to central universities in a most comprehensive manner propagating progression and fungibility

Prong 2: Re-imagining the curriculum, programs, and outcomes

- Offer 3/6/9/12 month certificate programs; these programs shall be offered at the Polytechnics, Vocational Training Institutes and ITIs and the certificates of completion may be awarded by Universities/Skill Universities
- Offer 1/2/3 year Associate Diploma, Diploma and Advanced Diploma programs which mirror formal University Degree programs, these will act as a backward integration measure but progress in an academic & skills accretive manner

- Link every Polytechnic, Vocational Training Institute and ITI to an industry partner which will support apprenticeships as well as industry informed curriculum and content. Permit industry partners to design livelihood centric curriculum
 - Position this to industry as a source for building their talent pipeline
 - Activities like market scans, guest lectures and internships really help aspirants to assess and align to industry expectations
 - Trainer certification from Industry will also help in ensuring quality and uniformity in vocational training
 - Focus on sunrise streams like green jobs, jobs in healthcare, tech, care work, services and manufacturing which will prepare learners for future world of work
 - Freely permit dual system of education & training; allowing industry partners to collaborate directly with the Polytechnics, Vocational Training Institutes, and ITIs
- Prong 3: Re-inforcements** via complementary & supplementary actions
- Brand building actions for the Polytechnics, Vocational Training Institutes, and ITIs
 - PPP models for the Polytechnics, Vocational Training Institutes and ITIs will ignite the demand & supply side of the eco-system
 - Funding the PPP model; give expenditure control to industry partners supported by holistic governance but not necessarily over-regulations or over-monitoring
 - Industry reach out to encourage participation
 - Escalate & accelerate the NSQF as the official standard for skill-based education as compared to knowledge-based education
 - Position Universities as final frontiers for academics and not necessarily livelihoods



- The industry should hire ‘engineers’ from Polytechnics and not from Universities
- Break the chain of progressing from High School to University
- Incentivise industry to hire from Polytechnics, Vocational Training Institutes, and ITIs

A word of caution here; while the above is a 3-pronged approach and each of these is mutually exclusive, they must all be done in tandem as each prong supports and circularly feeds off the other

Other than the three main strategies articulated above, several related on-ground actions can support the core purpose:

1. **Repositioning of VE:** Today VE is positioned as the pursuit of ‘those who could not make it’; it is designed for the failures of the mainstream education system. This mindset needs to be completely renounced and whitewashed. VE is to be positioned as an academic pathway for those who seek accountability and purpose from education. It is to be positioned as completely inclusive and mainstream.
2. **Vocational subjects as components of main stream courses:** Vocational education starts at school level these days. This should be considered as a professional and mainstream course rather than a hobby.
3. **Alignment of Vocational Education from Secondary to Higher Education:** There is a need to create an appropriate ecosystem by focusing on skilling, upskilling, and reskilling for vocational education pass out candidates. We also

need to develop and institutionalize credit framework for seamless vertical mobility in students of the vocational education programmes. Encouragement for Skill based courses like B. Voc, future skill courses etc.

4. **Optimum utilization of PMKK infrastructure :** With the investment already made by Private Entrepreneurs and the Government in such world class infrastructure, it’s important that we look at multiple Govt. initiatives to utilize the capacity to its fullest by linking these to Polytechnics, Vocational Training Institutes, and ITIs.
5. **Digitization and Technological Intervention in the VE Ecosystem:** COVID-19 pandemic has taught us the importance of use of digital platforms and technological interventions required in education and vocational systems. It is of paramount importance that now, an extensive research and development is promoted for technological intervention in the VE ecosystem by infusing human and capital resources by government and private players. The pool of resources should be made available for all players to avoid duplication of efforts.
6. **Cluster Based Training Approaches & Extensive Cross Utilization of Resources:** Cluster based training approaches should be promoted both for Govt. and small private companies to address the lack of training capacity. It could be supported by industry associations by offering funds with help from the state initiatives. Collaborations should be promoted for effective use of existing infrastructure and resources from the state to the district level.

Acknowledgements

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The chamber with its presence in 14 states and 10 countries, provides a platform for networking and consensus building within and across sectors and is the first port of call for Indian industry, policy makers and the international business community.

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