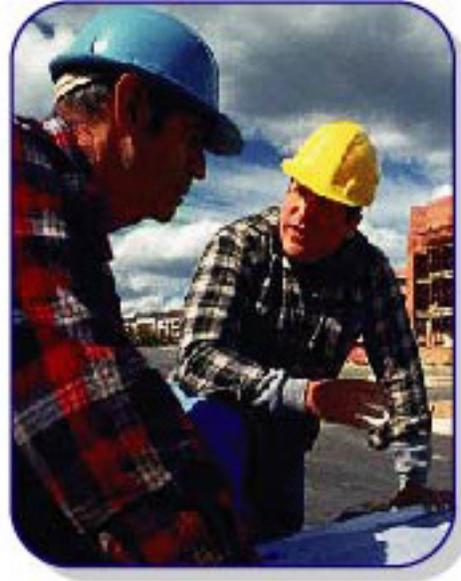


## Section – III

# Human Resource Development: Skills & Knowledge for SMEs



### Executive Summary

- **Human Capital is Key to success**
  - Staff Recruitment and Retention
  - Training and Skill Development
  - HR Development
- **Technical Training in SMEs**
  - Capacity Development
  - Tool Room Training
  - Design & CAD/CAM
- **Government and Private Partnerships**
- **Evolving of an SME Learning Eco-System**
  - Technology enabled learning
  - Knowledge Network & Communities

### Authors

Ms. Dolly Bhasin of SPH Consultants with inputs from Mr. R. K. Rai, Small Industries Development Organization (SIDO), New Delhi.

# Human Resource Development: Building SME Competencies

Dolly Bhasin, SPH Consultants

## Human capital is the key to success

Small and medium enterprises are the vehicle that creates most of the employment in the Asia-Pacific, and are the backbone for regional economic growth. Human Resource Development programmes are required to improve both entrepreneurial and worker skills, through existing facility providers and new capacity development programmes.

The clear benefits for poverty reduction puts a premium on integrating, productivity and profitably for Small and Medium Enterprises in the process of economic growth. The setting up a market-based economic order with a level playing field for all enterprises, in which SMEs can aspire to opportunities of growth and wealth-creation commensurate with their own endowments and diligence, innovation and management commitment, is the demand of the future. This must lead to a priority in the delivery of services so as to neutralize, on a continuing basis, the handicaps and irritants, which tend to spring themselves upon SMEs in a selective manner.

There are three aspects to Human Resource Development in SMEs worldwide-

1. Staff Recruitment and Retention
2. Training and Skill Development
3. HR Development

## Staff Recruitment and Retention

Recruitment and retention of staff in an SME unit is a big challenge. SMEs recruit and train potential employees and by the time they are productive, they are ready to leave and join a MNC or a large organisation. This though being one of the big problems can be utilized as an opportunity by the SMEs. They could tie-up with vocational institutes and provide apprentice training to the students for a contracted period, which after the completion of the term, can then be actually hived off to the large industries as premium manpower by them.

## Training and Skill Development

The key to human resource development lies in streamlining the supply side of the human resources, i.e. improve the quality and standards of SME education.

With the changing Business landscape, SMEs are likely to require new competencies, thus creating a gap between the competencies staff currently hold and those that they need. Competencies in SMEs are broadly needed in three areas:

1. **Skills:** Specific skills may be required to carry out production/service task, which needs to be mastered.
2. **Knowledge:** There may be knowledge gaps where staff does not know about the nature and role of certain systems or operational processes.

- 3. Entrepreneurship and Leadership:** Often techno entrepreneurs lack the sufficient orientation to entrepreneurship and leadership qualities, which need to be developed to manage a small enterprise, successfully.

To develop the SME sector, it is vital to enhance the skills of the SME's to adapt the latest technology in Design and Manufacturing, Product & Process Improvement, Productivity, Quality Improvement and Standardization to meet the global challenges.

The Small Industries Development Organization (SIDO), part of Ministry of Small Scale Industries, GOI, is the Nodal support agency to facilitate the skill development in the sector. SIDO and their associated institutional framework undertake two types of skill development activities – Entrepreneurship Development (EDP) and Tool Room Training. While, EDP Programmes are conducted through SISIs, branch SISIs and National level training institutes like: NIESBUD, NIESET, SEPTI and other state level EDP training institutes; the training for tooling and production technology related skills is imparted through the Tool Room & Training Centres.

### **Tool Room & Training Centres**

10 Tool Rooms and Training Centres to help SME's have been established at Aurangabad, Ahmedabad, Bhubaneshwar, Guwahati, Hyderabad, Indore, Jamshedpur, Kolkata, Jalandhar and Ludhiana. These Tool Rooms provide invaluable service to the Indian Industry by way of precision tooling and providing well trained craftsmen in the area of the tool and die making.

Not only are the Tool Rooms equipped with the best technology, they are also abreast with the latest advancements in the field and periodically add new technology like CAD/CAM, CNC machining for tooling, Vacuum Heat Treatment, Rapid Prototyping etc.

The Tool Room and Training Centres are equipped with state of the art machinery and support facilities. All the Tool Room & Training Centres adhere to the principles of Total Quality Management (TQM). They are ISO 9001:2000 certified institutions.

The facilities of the Tool Room & Training Centres allow for the design and manufacture of sophisticated medium and small size tools. These tools are in conformity with international standards. The latest hardware and software ensure the professional design of tools and 3D solid modelling. Surface modelling and analysis for the product development along with reverse engineering and rapid prototyping are additional features.

These Tool Room & Training Centres also offers tool tryout facilities for the component production for SMEs. The centres are equipped with the full-fledged heat treatment equipments such as Vacuum Furnace fluidized bed furnace, single and double chamber furnaces etc.

The production centres at the Tool Room & Training Centres offer an array of cutting edge production services. These comprise of the manufacture of press tools, moulds, jigs, fixtures, die casting dies, manufacture of standard part and components and carry out precision job work

The production services of the tool rooms use CAD/CAM/CAE/CNC technology by engineers, plant supervisors, foremen and skilled workers, e.g. tool and die makers, filters and machine operators. Please see Annexure I & II for the list of technical training centres and courses.

## HR Development

The HR practices in SMEs are not well developed, which cause a lot of frustration and employee attrition.

Some staff management techniques can be combined to combat both recruitment and retention problems of the SMEs.

1. Overall Employee developmental programmes, which are linked to retainer bonding agreements for certain duration.
2. Performance driven wage and incentive system
3. Rotation of employees amongst different offices of the SME unit to gain more exposure.
4. Use of External consultants and outsourcing of certain non-core tasks.
5. Strengthen HR practices of performance appraisals, greater delegation and flexibility, etc.

## Government & Private Partnership Initiatives to bridge the Gap

SMEs are a highly fragmented industry. They have unique challenges and need handholding and facilitation by the Government. In India, by 2030, we shall have the highest young manpower in the world. In case the energy of this young nation (human capital) is not channelised in the right direct direction, it may cause social problems. Governmental support to bridge the gap of skill and knowledge shortage might kill two birds with one stone. However, the agility and the necessary thrust to meet the challenges of the huge capacity development can only be met through Govt./Private partnership.

Some of the desired initiatives are listed as follows:

**Centralized R&D facility for SME product and process development research**, have been setup by government institutional framework. These centres can transfer the technology & know how to the SMEs at a fraction of the cost, which would be normally available to them.

**International technology-exchange programmes** can also boost SME's knowledge skills.

**Public and private R&D organisations** (CSIR, NRDC, Universities, Polytechnics, etc.) can be oriented to R&D for product and process requirement of SME's.

**Strategic skills upgrading:** The tactical plan is needed to move from gap analysis to skills upgrading based on the product(s) in the key identified sectors paying careful attention to the requirements of the production clusters in the inner cities and rural areas.

**Supply chain for technopreneurship:** A serious effort is recommended for fostering a supply chain for technopreneurship. We need role models that can get intelligent and diligent people excited about creating value through successful entrepreneurship. Incubators can be established in major research and technical institutions.

**Specialized professional expertise:** Specialized professional expertise in carefully chosen niches that the panel of advisors recommends has potential for a broad-based replication. Transfer of expertise in areas like WTO, Patents, Trade Treaties, etc. have already made a mark in SMEs.

**Re-skilling boot camps:** Re-skilling boot camps can be organized for each of the booster industries by rotation, with a view to provide periodic technology grounding in efficacious skills among workers in SMEs.

**Utilizing Institutional capacity for training:** The government has set up specialised training institutes for both entrepreneurship and skill development, across the country, where a lot of equipment, infrastructure and other resources are in place. Please see Annexure I for the list and courses conducted by them. SMEs can undergo a significant strategic reorientation of their own core competencies, in particular, the skills and competencies needed to enable them to hold their own in the booster-industries in the changed global business environment.

**Technical assistance and investment:** is needed to appropriately address the changing training and motivational aspects in the existing institutions, so that the technical and managerial skills can be nurtured in a proper organised manner.

**Private-public collaboration:** The selection of training courses and then the delivery of such training is an important instance of public-private collaboration.

**R & D with potentially high-impact profiles:** R & D that lead to prototypes with a scope for replication in potentially high-impact product niches (e.g. in the field of mobile games, 3-D animation, or bio-optics, or the manufacture of computer-controlled industrial and medical appliances, etc); should be facilitated and transferred to the young entrepreneurs for product manufacture.

**Curriculum development for vocational training:** Curriculum of vocational training institutes be revised and reviewed to make it SME development friendly.

## **Evolving of an SME Learning Eco-system**

Two kinds of institutions are suggested to achieve the above, preferably for adoption by civil society role models/ catalysts, bearing in mind that these institutions will not be government run, but government supported to fulfill large unmet needs and meet the capacity demands of the future.

The mission of the first kind is in trying to render stakeholders out of indigenous young science and technology graduates by bringing to their agenda for poverty alleviation (the currently missing fulcrum of technological innovations) to improve the quality of life of the poor.

The mission of the second is to help achieve mastery over IT skills, and to then quickly disseminate them among young self-starters, including in the university/polytechnic/colleges' stream, through a regime of online and "brick-and-mortar" interactions.

Efforts to accelerate the retention and promotion of women entrepreneurs should be strengthened, as they would benefit two fold – by way of education as well as employment.

A persistent lack of skills among HR professionals remains an obstacle to achieving the fullest possible transformational advantage, according to the findings of the HROA Europe's third annual HR Transformation Survey. A full 57 percent of respondents cited skills of existing staff as a major barrier to transformation, which sends a clear signal of the critical need for training

and reskilling of both HR executives and staff is a must to any capacity development intervention of SMEs.

### **Technology Enhanced Learning**

Technology enhanced learning plays an important role in both skill development as well as knowledge development initiatives in SMEs due to the following reasons:

- SMEs cannot devote full time for learning activities, due to his business and day-to-day pressures.
- SMEs require only capsules of learning's to fulfill their immediate needs of upgrading their competencies. JUST IN TIME LEARNING.
- Do not need Academic but practical oriented training.
- The learning environment should be at his unit rather than the academic institute.
- SMEs need continuous learning environment, where they could tap the learning bites at their own ease, ANY TIME, ANY WHERE LEARNING.



e-Learning can help solve many of the business problems faced by an organization; however, there are different types of knowledge systems and requirements of every SME sector may be different and e-learning may not be the best solution to every problem. Every organization should evaluate technology-based learning for:

- Corporate goals and strategic initiatives support
- Readiness of the organization
- Education opportunities to improve performance
- Prioritization of opportunities to maximize value to the business

### **Knowledge Network and Community**

The power of the technology can be harnessed by the SMEs to share knowledge and best practices across the globe at a fraction of the cost through participation in Knowledge networks and communities of special interest groups. A wide variety of information and knowledge of success and failures in small businesses are available to members to help them to enhance their knowledge and learn from the same. Some of them are Government sponsored (Initiatives like US Small Business group, Trade Information, etc.), some are association driven (WASME, INSME, etc.) and some are privately funded ([sme.icicibank.com](http://sme.icicibank.com)).

## References

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2. [www.unido.org](http://www.unido.org)
3. [www.smetoolkit.org](http://www.smetoolkit.org)
4. [www.travarsity.com](http://www.travarsity.com)
5. [sme.icicibank.com](http://sme.icicibank.com)

## Annexure I

### SIDO TOOL ROOM & TRAINING CENTRES

Tool Room & Training Centres	Telephone	Fax	E-mail/Website
<b>General Manager</b> <b>Indo German Tool Room</b> P-31, MIDC, Chikalthana Industrial Area, Aurangabad - 431 210 (M.S.)	91 -240- 2480578 2482593	91-240-2484028	gm@igtr-aur.org www.igtr-aur.org
<b>General Manager</b> <b>Indo German Tool Room</b> Plot-5003, Phase-IV, GIDC Mehmedabad Road, Vatva Ahmedabad - 382 445 (Gujarat)	91-79-25840966 25841960	91- 79-25841962	training@igtrahd.com marketing@igtrahd.com www.igtrahd.com
<b>General Manager</b> <b>Indo German Tool Room</b> Plot No.291/B 0-302/A, Sector-E, Sanwer Road, Indore - 452 003 (MP)	91-731-4025353 2721463	91-731-2720353	indigtr@sancharnet.in www.igtr-indore.com
<b>General Manager</b> <b>Central Tool Room</b> A-5, Focal Point, Ludhiana - 141 010 (Punjab)	91-161-2670057 2670058	91-161-2674746	apsharma@ctriudhiana.com www.crtludhiana.com
<b>Principal Director</b> <b>Central Institute of Tool Design</b> Balanagar Hyderabad - 500 037 (A.P.)	91-40-23774536 23772747	91-40-23772658	hyd1-citdhyd@sancharnet.in www.citdindia.org
<b>General Manager</b> <b>Central Tool Room &amp; Training Centre</b> Bon Hooghly Industrial Area Kolkata - 700 108 (W.B.)	91-33-25776350 25771068	91-33-25772494	cttc@cal.vsnl.net.in www.business.vsnl.com/cttc_kolkata
<b>General Manager</b> <b>Central Tool Room &amp; Training Centre</b> B-36, Chandka Industrial Area P.O. Patia Bhubaneswar - 751 024 (Orissa)	91-674-2742100	91-674-2743061	cttc@satyam.net.in www.cttc_bbsr.com
<b>General Manager</b> <b>Indo Danish Tool Room</b> M-4 (Part) Phase-VI, Adityapur Industrial Area, Gamharia Janishedpur - 832 108 (Jharkhand)	91-657-2200507 5536161	91-657-2407723	jsr_idtr@sancharnet.in reach@idtrjamshedpur.com www.idtrjamshedpur.com
<b>Project Manager</b> <b>Tool Room &amp; Training Centre</b> SISI Campus, Bamunimaidan, Guwahati - 781 021 (Assam)	91-361-2654042 2655542	91-361-2655542	trtc_ghy@rediffmail.com
<b>Principal Director</b> <b>Central Institute of Hand Tools</b> G.T. Road, Bye Pass, Jalandhar - 144008 (Punjab)	91-181-2290196 2290226	91-181-2290457	institute_jld@dataone.in www.ciht.com

School Dropouts	X - Class (10+2)	ITI / Vocational	Engg. Diploma	Engg. Graduate	Engg. Professional	Under Graduate	<h1>PROGRAMMES</h1>	Long Term (2 Yr. & Above)	Medium Term (1/2 yr to 2yr.)	Short Term (Below 1/2 yr.)
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School Dropouts	X - Class (10+2)	ITI / Vocational	Engg. Diploma	Engg. Graduate	Engg. Professional	Under Graduate		Long Term (2 Yr. & Above)	Medium Term (1/2 yr to 2yr.)	Short Term (Below 1/2 yr.)
*							ADVANCED DIPLOMA IN TOOL & DIE MAKING	*		
*							CERTIFICATE COURSE IN MACHINIST (TOOLROOM)	*		
*							CERTIFICATE COURSE IN DRAUGHTSMAN (MECHANICAL)	*		
*	*						CERTIFICATE COURSE IN MACHINE OPERATORS	*		
*	*						CERTIFICATE COURSE FOR TURNING & MILLING	*		
				*			MASTER OF ENGINEERING (CAD/CAM)		*	
				*			MASTER OF ENGINEERING (TOOL DESIGN)		*	
				*			POST GRADUATE DIPLOMA IN TOOL DESIGN & CAD/CAM		*	
				*			POST GRADUATE DIPLOMA IN MECHATRONICS		*	
				*			POST GRADUATE CERTIFICATE IN VLSI & EMBEDDED SYSTEMS		*	
			*	*			POST DIPLOMA IN TOOL DESIGN & CAD/CAM		*	
			*	*			POST DIPLOMA IN TOOL DESIGN & MANUFACTURING		*	
		*					ADVANCED COURSE IN CNC MACHINING		*	
*	*						CERTIFICATE COURSE IN MACHINE TOOL OPERATIONS		*	
	*						CONDENSED COURSE IN TOOL & DIE MAKING		*	
				*			MASTER CERTIFICATE IN COMPUTER AIDED TOOL ENGINEERING		*	
				*			MASTER CERTIFICATE IN CAD/CAM		*	
			*	*			CERTIFICATE COURSE IN COMPUTER HARDWARE & NETWORKING		*	
			*	*	*		COMPUTER AIDED DESIGN (UNIGRAPHICS, CATIA, PRO-E, I-DEAS, SOLID EDGE, SOLID WORKS, AUTOCAD & MDT)			*
			*	*	*		COMPUTER AIDED DESIGN (UNIGRAPHICS, PRO-E, MASTER CAM, DELCAM)			*
			*	*	*		COMPUTER AIDED ENGINEERING (FEA, ANSYS, ADINA, NASTRAN, HYPERMESH)			*
			*	*	*	*	INTERGRATED COURSE IN CAD/CAM			*
		*	*	*	*		CNC PROGRAMMING & MACHINING			*
			*	*	*		TOOL DESIGN (Moulds, Press Tools, Die Casting Dies, Jigs, & Fixtures, Gauges, Cutting Tools)			*
		*	*				CNC MACHINING (Milling, Wire-Cut, Lathe)			*
		*			*		GEOMETRIC DIMENSIONING & TOLERANCING			*
		*					CERTIFICATE COURSE IN METROLOGY & CMM			*
		*			*		INDUSTRIAL HYDRAULICS & PNEUMATICS			*
		*			*		MECHATRONICS & ITS APPLICATIONS			*
		*			*		SENSORS TECHNOLOGY			*
		*			*		PLCs FOR ADVANCED AUTOMATION TECHNOLOGY			*
						*	BASIC COURSE IN CNC & CAD/CAM			*
						*	INTERGRATED COURSE IN TOOL DESIGN & CAD/CAM			*