

38

10 Year Business Plan Report for Bhubaneswar Technology Centre

Technology Centre Systems Program

Submitted

To

The Office of Development Commissioner –
MSME

Ministry of MSME, Govt. of India

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37

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Business Plan of Bhubaneshwar TC

Contents

Technology Centre System Program (TCSP).....	3
Achievements	4
SWOT Analysis of the TC.....	5
Business Plan of the TC	6
Centre of Excellence	6
Underserved needs.....	6
Agricultural/Rural/Traditional Industry	6
Outreach/ Inclusive Growth Programmes.....	6
Financial Analysis.....	7
Annexure-I	8
Training	9
Revenues and payback period.....	10
Appendix.....	11
Action Plan for next 3 years.....	11

Technology Centre System Program (TCSP)

The Objective of Technology Centre System Program (TCSP) is to enhance the competitiveness of MSMEs by improving their access to technology, skilled manpower and business advisory services through systems of financially sustainable Technology Centres (TCs). The program seeks to establish 15 new TCs and upgrade capabilities of select existing TCs and develop linkages between MSMEs, Indian and international research institutes and leading manufacturers. This would include upgradation in technology, civil infrastructure and service offering (Production and skilling support to Industry) of the TC. The program will help the TCs in transferring leading practices pertaining to advance technology, skilling, incubation and innovation to MSMEs.

The competitiveness of MSMEs is impacted by various factors such as entrepreneurial drive of the leader, market and customer dynamics, their access to technology, business advisory and availability of skill manpower. The TCs will shape the outcomes of the program by providing MSMEs access to technology, business advisory and skilled manpower.

This program will create an ecosystem to help MSMEs become more competitive by acquiring improved technology and employing better skilled workers. This will be done directly through the services provided to them by the TCs, as well as indirectly through the linkages with larger firms (e.g. as part of the supplier network of an OEM), which will provide access to the services of the TCs under the condition that it benefits their suppliers. The TCs will contribute by providing inputs to MSMEs on manufacturing technology & business advisory and by improving the skills of workers/ skill seekers for better employment opportunities. The program will therefore benefit the Indian MSMEs, students and workers and help establish systems of TCs in the country wherein each centre will gain from the specialisation and experience of the others and improve the competitiveness of MSMEs.

One of the key objective of the programme is to upgrade the existing TCs. As a part of this program, 10-year business plans of the TCs were developed to ensure their activities are aligned with their overall long term objectives.

CTTC Bhubaneswar

CTTC is located in Chandrasekharpur, Bhubaneswar in Odisha, India. CTTC started its operations with training activities in 1991 and began tool production in 1995. The centre was established in technical cooperation programme between Government of India & Government of Denmark.

The current activities of CTTC include:

- ▶ Training
 - Long term
 - Short term
 - Sponsored Programme
 - Training for Scheduled Caste / Scheduled Tribe candidates
 - International Training Programme

- ▶ Production

Over the years, the Centre has created brand image for manufacturing/ fabrication of high precision Aerospace Metallic components and various precision assembly/ sub-assembly for aerospace applications. The Centre is supporting MSMEs through development of Tools & dies and manufacturing of high precision components.

- ▶ Consultancy
 - Project consultancy to MSMEs and skill development centres
 - Technological support to MSME
 - Entrepreneurship for MSME units

Achievements

- ▶ CTTC Bhubaneswar is self-sustaining from the recurring expenditure for the last 15 years and currently recovering depreciation for the past ten years
- ▶ In 2017-18, CTTC Bhubaneswar trained 32,943 trainees. They had a revenue of INR 52.32 crores as compared to an expenditure of INR 28.23 crores. During this FY, 1661 MSMEs were assisted by the TC through Techno-Management consultancy services and capacity building Training programmes.

SWOT Analysis of the TC

<p>Strength</p> <ul style="list-style-type: none"> ▶ Precision manufacturing for aerospace & defence sector ▶ Training in latest technology area ▶ Availability of strong top management team 	<p>Weakness</p> <ul style="list-style-type: none"> ▶ Need to strengthen capabilities in niche precision manufacturing ▶ Limited service offering to micro enterprises such as agri/rural/traditional industry
<p>Opportunity</p> <ul style="list-style-type: none"> ▶ Make In India ▶ Defence Offset Policy 	<p>Threat</p> <ul style="list-style-type: none"> ▶ Increased competition due to strengthening of ITIs and other technical institutes in the nearby areas

Strengths

While analysing a Technology Centre, it is important to know the current strength of the Technology Centre, to recognize the present status of the TC

- ▶ Precision manufacturing for aerospace & defence sector
- ▶ Training in latest technology area
- ▶ Availability of strong top management team

Weakness

It refers to the areas in which the Technology Centres currently lack and can require further improvement

- ▶ Need to build capabilities in niche precision manufacturing
- ▶ Limited service offering to micro enterprises such as agri/rural/traditional enterprises industry

Opportunity

These are the areas which hold the highest scope for the Technology Centres in which they can advance

- ▶ Make In India
- ▶ Defence Offset Policy

Threat

- ▶ Increased competition due to strengthening of ITIs and other technical institutes in the nearby areas

Business Plan of the TC

The objective of the business plan is to create a roadmap to establish the TC as a highly sustainable organization through serving MSMEs in its relevant area. The business plan will also guide the TC to expand its base at micro enterprises level by reaching out to socially and economically under developed segment of manufacturing value chain.

The business plan of each TC has been divided in to three main areas.

Centre of Excellence

One of the key aims of the business plan is to identify the vertical in which the TC can establish itself as Centre of Excellence (CoE) at national level. Selection of the vertical will be based on its strength and core competency.

The TC has identified develop as a CoE in following area.

- ▶ Precision Component Manufacturing

The Centre has emerged as one of the top 5 Precision Manufacturing organization in the Country particularly in the Aerospace and defence sector. Due to its consistent quality and timely delivery, the Centre has bagged orders from the leading Aerospace and defence organizations.

Underserved needs

In order to serve the MSMEs in the catchment area in more effective way, it is important to identify the areas which have not yet been catered by TC however the industry needs support from TC in this area.

The TC has identified following unserved needs

- ▶ NABL lab for testing validation measuring instruments
- ▶ Precision machining capability building for SMEs

Agricultural/Rural/Traditional Industry

One of the key objectives of the business plan is to extend the services of the TC to the majority of micro entrepreneurs. The TC needs to take various initiatives to reach out to the entrepreneurs residing at the bottom of the pyramid essentially agricultural, rural and traditional strata of the society as they represent the maximum concentration of the micro entrepreneurs.

Following key initiatives have been identified by the TC in this area.

- ▶ Training of agricultural rural and traditional entrepreneur under Recognition of Prior Learning (RPL) in the areas of repair & maintenance of agricultural equipment, Home appliances repairing, Solar and Bio Gas plant maintenance etc.
- ▶ The Centre is planning to establish a Support Centre for Art Based Entrepreneurs particularly artisans particularly Brass & Bell metal cluster, terracotta cluster and Coir Cluster. Technological support, training and skill development training shall be provided to these artisans.
- ▶ Support budding entrepreneur to add value to farm entrepreneur through development of new technology e.g. TC is helping start-ups in development of small size rice milling machine for which can be used by farmers or micro entrepreneurs to mill small quantity of rice at farm level.
- ▶ Digitization of drawing of Farm equipment and low-cost automation wherever possible

Outreach/ Inclusive Growth Programmes

Over 90% of MSME sector is represented by micro enterprises. The TC needs to extend its services to these micro enterprises through outreach/inclusive growth programme. These programmes will be consist of 1 hour to few days in the area of Recognition of Prior Learning (RPL), Management skill, soft skill and short term regular training courses currently offered by the TC. These programmes will help the TC to reach out to bottom of the MSME pyramid which could be transformed into

small enterprises. At the same time these courses would help the unemployed younger population to gain basic vocational skills for starting their own micro enterprises or getting employed. Ultimately, these programmes would help the TC to extend its core services to this segment.

▶ **Training of agricultural rural and traditional entrepreneur under Recognition of Prior Learning (RPL)**

The TC is planning to develop a specialized course in the service area such as home appliances repairing, Mobile repairing, Motor cycle repairing etc. which can be conducted in the rural and semi urban area through mobile van.

▶ **E-learning programmes**

India has half of the population under 25 year age and there are 500 million internet users in 2017. It is estimated that e-learning market in India is around \$ 1.29 billion and India would among top 3 mobile learning market in next few years. Since most of the companies are focused on K12 segment and there are not significant players and content in vocation training. It provides a great opportunity for TCs to tap the market through development of e-learning content. To start with, TCs can start conducting webinars which would be focused on short term learning modules. The TC would develop the content and will host webinars and on-demand training modules.

Financial Analysis

Total investment is INR 512 crores and number of trainees including their regular and core area & outreach/inclusive growth is projected as 45,000 in 2018-19 and 10,94,318 in 2027-28.

The revenue is projected in 2018-19 is INR 56.5 crores which will increase to INR 232.06 crores in 2027-28. The payback period for the proposed investment comes out to be 14 years.

The detailed investment requirement for the key activities and new initiatives in the above-mentioned areas to be taken up in the longer run can be found in Annexure - I

Annexure-I

Capital investment proposed for next 10 years in Plant & machinery (Production and Training, Centre for Agricultural Rural and Traditional enterprises (CART) and infrastructure is as follows.

SN	Area	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	Total
		(INR in Cr) Year 1	(INR in Cr) Year 2	(INR in Cr) Year 3	(INR in Cr) Year 4	(INR in Cr) Year 5	(INR in Cr) Year 6	(INR in Cr) Year 7	(INR in Cr) Year 8	(INR in Cr) Year 9	(INR in Cr) Year 10	
1	Investment in machinery & Equipment	10	20.5	14.4	16.2	12.64	13	13	18.04	22	23.8	163.58
2	Increased investment in Training & other	15.30	17.00	21.60	24.30	26.46	27.00	27.00	34.56	40.50	43.20	276.92
3	Investment in CART ED	11.7	4.8									16.5
4	Investment in Infrastructure	5.00	4.70	4.00	4.50	4.90	5.00	5.00	6.40	7.50	8.00	55
Total		42	47.00	40.00	45.00	44.00	45.00	45.00	59.00	70.00	75.00	75.00

Key assumptions

Following assumption have been considered for financial analysis.

- Historical data is used to forecast key numbers such as revenue and expenditure i.e. expenditure as 54% of revenue, surplus growth rate 16%
- Average revenue per student from core training programme and outreach programmes are considered as INR 8500/- and 1000/- respectively.
- Surplus and Free cash flow are extrapolated beyond 10th year to calculate payback period.
- Revenue of base year 2017-18 (i.e. INR 48 Cr) is subtracted from free cash flow to calculate incremental free cash flow only due to projected investment.

Training

Training is divided into 2 parts i.e. core training programmes running by TCs currently and outreach programmes comprised of CART intervention, webinar and other initiatives.

S. No	Area	2018-19 Year 1	2019-20 Year 2	2020-21 Year 3	2021-22 Year 4	2022-23 Year 5	2023-24 Year 6	2024-25 Year 7	2025-26 Year 8	2026-27 Year 9	2027-28 Year 10	Total
1	No. of Trainees trained - Core Area	40000	44000	48400	53240	58564	64420	70862	77949	85744	94318	637497
2	Outreach/ Inclusive Growth Trainees	5000	100000	200000	300000	400000	500000	650000	800000	900000	1000000	4855000
	Total	45000	144000	248400	353240	458564	564420	720862	877949	985744	1094318	5492497

Revenues and payback period

S. No	Area	2018-19 (INR in Cr) Year 1	2019-20 (INR in Cr) Year 2	2020-21 (INR in Cr) Year 3	2021-22 (INR in Cr) Year 4	2022-23 (INR in Cr) Year 5	2023-24 (INR in Cr) Year 6	2024-25 (INR in Cr) Year 7	2025-26 (INR in Cr) Year 8	2026-27 (INR in Cr) Year 9	2027-28 (INR in Cr) Year 10
1	Revenue from Production	22	24.20	26.62	29.28	32.21	35.43	38.97	42.87	47.16	51.87
2	Revenue from Trainees (Normal)	34	37.40	41.14	45.25	49.78	54.76	60.23	66.26	72.88	80.17
3	Revenue from Inclusive Growth (CART-ED included)	0.5	10	20	30	40	50	65	80	90	100
4	Overall Rev (R)	56	71.60	87.76	104.54	121.99	140.19	164.21	189.13	210.04	232.05
5	Expenditure	30.51	38.66	47.39	56.45	65.87	75.70	88.67	102.13	113.42	125.30
6	Surplus	25.99	32.94	40.37	48.09	56.12	64.49	75.54	87.00	96.62	106.74
7	Free Cash flow	-64.01	-62.07	-47.63	-44.91	-35.89	-28.51	-17.47	-20.00	-21.38	-16.26
8	Payback Period	14 years									

Appendix

Action Plan for next 3 years

Sl. No.	SUBJECT	ESTIMATED COST	OBJECTIVE OF THE MACHINE	SPECIFICATION
(A) TECHNOLOGY / CAPABILITY ENHANCEMENT				
1	CNC High Precision Turn Mill Centre-2 Nos	300 lacs	To incorporate advance precision machining technology	X-axis 500 mm Z-axis 300mm Turret with live head for milling. Y axis 100mm Accuracy- 05 mikron
2	CNC Cylindrical Grinding Machine	400 lacs	To incorporate advance precision machining technology	Centre distance-650mm Centre height - 175mm C Axis for thread Grinding Accuracy - 2 micron
3	CNC 5-axis Machining Centre	250 lacs	To incorporate advance precision machining technology	X,Y,Z -500,400,500mm 5-axis simultaneous Accuracy 5 micron
4	CNC EB Welding Machine	500 lacs	To incorporate advance welding technology.	Size X,Y,Z-500,400,500. Watt-10KW Twin Gun
4	High Accuracy Lathe	100 lacs	To incorporate precision machining technology	X,Z Axis-500,300 mm. Maxm Dia-250mm Accuracy- 5 mocron
5	High Precision Tally Round Machine for Inspection.	100 lacs	To incorporate advance precision measuring technology	Maxm measuring dia-600mm Acuuracy-0.02 micron. Height-900 mm
6	NABL Inspection Lab	100 lacs	To incorporate advance precision measuring technology	1)Unv. Lgth Measuring mc(Range-1000mm,Accuracy-1micron) 2)Contour Measuring mc(measuring range-50mm,Accuracy-3 micron) 3)Univ. Gauging System(XY-300mm dia, Accuracy- 2 micron.
7	IOT Lab	50 lacs		1) Intel kit

Sl. No.	SUBJECT	ESTIMATED COST	OBJECTIVE OF THE MACHINE	SPECIFICATION
			To incorporate advance skill training facility.	2) Rasberry Kit 3) Big Data Software 4) Adrino kit
8	Industry 4.0 Lab	200 lacs	To incorporate advance skill training facility.	Smart Machine Celos software IOT device Assly line
9	Advance CNC Lab for training CNC 5 axis - 1 no CNC Turn mill - 1 no CNC Laser - 1 no	400 lacs	To incorporate advance skill training facility.	X,y,z-600,500,500 x-600,z-300 and Y axis Laser power 100 HZ
(B) EXPANSION ACTIVITIES				
10	CNC Lab for Training CNC Milling - 5 nos CNC Lathe-5 nos	300 lacs	To enhance the CNC training capacity	CNC Milling-X,Y,Z 500,400,450 Power-5.5/7.5 KW CNC Lathe-X,Z 600,200 Power - 5.5/7.5 KW
11	Advance Civil Engg. Lab	50 lacs	To incorporate advance skill training facility.	1)Total Station. 2)DGPS 3)Surveying equipment
12	CNC Simulation Lab with CNC Machines	200 lacs	To incorporate advance CNC Training Methodology under skill development training	1)CNC lathe for simulation training. 2) milling for simulation training 3)CNC simulator -30 seats with Fanuc and Siemens controller.
13	Construction of 2 nd floor of New Workshop building	200 lacs	For skilling / up skilling	800 sq.mtr carpet area in the 2 nd floor with glazed tiles/ aluminum window, aluminum door, wash room etc.
14	Renovation of Gate No.2, Cafeteria and landscaping etc.	200 lacs	For face lifting of the Centre	Renovation of Gate No. 2, Cafeteria area, landscaping in front of Production/ Training Department.
(C) REGULAR INVESTMENT / RENOVATION / REPLACEMENT				
15	Desktop Computer 300 Nos.	200 lacs	Skill Development training	i7, 4mb Cache, 4GB Ram , pre loaded windows OS
16	Computer Softwares	100 lacs	Skill development training	Catia V-6, CREO, DELCAM, E learning, VIVADO, Staddpro, Edge-Cam etc.

Sl. No.	SUBJECT	ESTIMATED COST	OBJECTIVE OF THE MACHINE	SPECIFICATION
17	Productivity Improvement tools, machines, equipment, measuring instruments.	100 lacs	For higher productivity and quality in training and production	Vibro polishing m/universal Testing Machine, 3R toolings, vacuum clamping, tool presetter,
18	Machine Spares and Accessories	100 lacs	For higher productivity and less down time	Electronic imported Kit Balls screw Drivers etc.
19	Furniture and Fixture	100 lacs	For Skill development training and service to MSMEs	Computer table, Computer Chair, Instructor Table, Instructor Chair, Office furniture etc.
20	Miscellaneous civil work	100 lacs	For Aluminum partition, vinyl flooring etc.	Vinyl flooring-2mm Ceiling-microlook Aluminum partition-anodized and powder coated.
21	3 x 800 KVA 33/0.4 KV power supply system replacing the existing 11 KV system	200.00 lacs	For higher activity, skilling and less down time due to power failure.	1) 3 x 800 KVA copper wind Dry type / special oil cool type Transformer. 2) 33 KV C.T (ratio 50/5A), 33KV P.T and Control Panel 3) 33KV double pole structure, 400A isolator etc.
22	Grid connected Roof Top solar PV Systems - 167 KW	100.00 lacs	For green Energy	167 KW Solar PV Systems
(D) NEW WORLD CLASS INSTITUTE FOR TRAINING OF TRAINER, BHUBANESWAR				
22	Furniture for office, academic, building, workshop tc.	800 lacs	For World Class training of trainers for ITI/ poly techniques	Specification given

Sl. No.	SUBJECT	ESTIMATED COST	OBJECTIVE OF THE MACHINE	SPECIFICATION
23	FURNITURE FOR HOSTEL	100 lacs	For lodging arrangement of faculties	-Cot - 200 Nos. -Cupboard - 200 Nos. -Chair - 200 Nos. -Fan - 100 Nos. -Light - 100 Nos. -Kitchen equipment
24	CONVENTIONAL MACHINE LAB	200 lacs	For skill training of the trainees	Lathe - 8 Nos Milling - 8 Nos. Grinding M/c - 8Nos. Drilling - 4 Nos. Fitting M/s -16 Nos.
25	CNC LAB	400 lacs	Advance CNC training for trainers	CNC Lathe - 4 Nos. CNC Milling - 4 Nos. CNC W/Cut - 1 No CNC EDM - 1 No. CNC T.Mill -1 No. CNC Grinding - 1No.

Sl. No.	SUBJECT	ESTIMATED COST	OBJECTIVE OF THE MACHINE	SPECIFICATION
26	ADVANCE WELDING LAB	150 lacs	Advance Welding Lab for Training of Trainers'	CNC Welding Simulator - 1 No. Welding Transformer- 400 amps - 2 Nos. MIG Machine- 1 No. TIG Machine- 1 No. MAG Machine- 1 No. Welding Booth- 6 Nos. Rectifier- 2 No.s
27	ADVANCE PLC/ SCADA/ ELECTRICITY LAB	200 lacs	Advance PLC/ SCADA/ Electricity Lab for training of Trainers	PLC Lab consisting of S-700, S-300 Siemens PLC, Profibus SCada System, Process Automation
28	40 SEATER AC BUS	50 lacs	For commuting between main Centre & ITOT.	AC College bus - 40 seater