

## Title of Case Study: "To improve consultancy work of the department"

### 1. Brief history of the Organization :

- a. Name: K.E. Society's Rajarambapu Institute of Technol  
Rajaramnagar.
- b. Address: Rajarambapu Institute of Technology, Urun Isla  
Maharashtra 415414
- c. Phone / Fax / E-Mail: Tel: +91-2342 – 220329, 9970700700  
Fax: +91-2342 – 220989  
E-Mail : director@ritindia.edu
- d. Contact person / Coordinator: Dr. Mrs Sushma S. Kulkarni
- e. When QC movement started: **2004**
- f. No. of QCs in the Organization: **02**
- g. No. of employees - Executives / Staff /  
Employees: Executives:  
Staff (Non- Teaching): 210  
Employees(Teaching): 180
- h. Product / Service: Education
- i. Other Quality Concepts Implemented: viz. Five-S  
Five-S/Kaizen/TPM/SMED. Etc.
- j. QCFI Institutional Membership No: 054003102670

### 3. Brief History QC :

- a. Circle No./Name: "SRUJAN"
- b. Department/Section: Electrical Engineering
- c. Facilitator: Dr. V.N.Kalkhambkar
- d. Leader/Dr. Leader: Mr. A.K. Koshti

- e. Name of the members:
- |                    |           |
|--------------------|-----------|
| Mr. A.K.Koshli     | Leader    |
| Mr. K.M.Nathgosavi | Co-leader |
| Mr. S.S.Kumbhar    | Member    |
| Mr. R.D.Patil      | Member    |
| Mr. K.S.Kulkarni   | Member    |
- f. When QC started : July 2017
- Meeting Priority: Fortnightly
- g. Weekly/Fortnightly/monthly
- h. Duration of Meeting - 1 hour / 2 hours 1 Hour

## 4. Problem Solving Process contents

### a. Problem Identification:

Our baby steps started by making a list of problems by using brain storming

#### LIST OF PROBLEMS IDENTIFIED

Table 1.1 Problems identified through Brainstorming at a glance

Sr. No.	Problems Identified
1.	Students don't study software packages.
2.	Students don't choose project which have industry relevance.
3.	Finding industry internship in good company is problem.
4.	Focusing on training and one to one interviews based on technical and non-technical subjects
5.	Target on 2000 vocabulary for students of EE Dept. to build confidence
6.	Identifying , supporting, weak students to uplift department success index (FY to Final Year)
7.	Improve Research activities in department
8.	Students' paper publication.
9.	Development of lab
10.	Green building concept application in college campus
11.	Quality of student's projects.
12.	College bus timing and tracking system
13.	Poor self-study skills of student's.
14.	Less participation in other college activities
15.	Poor Programming skill of student
16.	Ineffective utilization of Practical
17.	No paper publication of faculty in reputed journals
18.	Lack of research activity in the department
19.	Poor consultancy in the department
20.	Poor communication skill of both student and faculty



21	Less cleaning activity of the solar panels
22	Poor quality of students projects
23	Students inconvenience related to school /college buses
24	Traditional or Old teaching learning Process
25	Poor aptitude and soft skills of students
26	poor results of students
27.	No industry sponsored laboratory
28.	Poor communication skill of the student.
29.	No paper publication of faculty's in reputed journal.
30.	Poor students paper publication.
31.	Improve Research activities in department
32.	Library facilities for Ad-hoc faculties
33.	Stressed faculty due to multiple activities
34.	No college bus tracking system.
35.	Lack of programming skills of the student
36.	Communication gap between students and faculty.
37.	Less Industry institute interaction.
38.	Poor quality of student's projects.
39.	Communication gap amongst the students.
40.	Traditional teaching methodology
41.	Unavailability of smart classroom.
42.	Less interaction of parents with faculty
43.	Lack of interest and awareness among student regarding in-plant training.
44.	Poor management of identification of companies for in-plant training.

45.	Traditional attendance method of student
46.	Poor placement to joining ratio of student
47.	Less usage of Moodle by students.
48.	Irregular submission of micro-projects by students
49.	Lack of different software training for staff.
50.	Annual medical check-up for faculty.

## b. Problem Selection:

Once we were armed with a probable list of problems we used the rating method tool to select the problem. Out of the 50 problems listed we filtered 10 problems and rated them on a scale of 5 per group member, after that the points were cumulated and the highest rated problem was finalized.

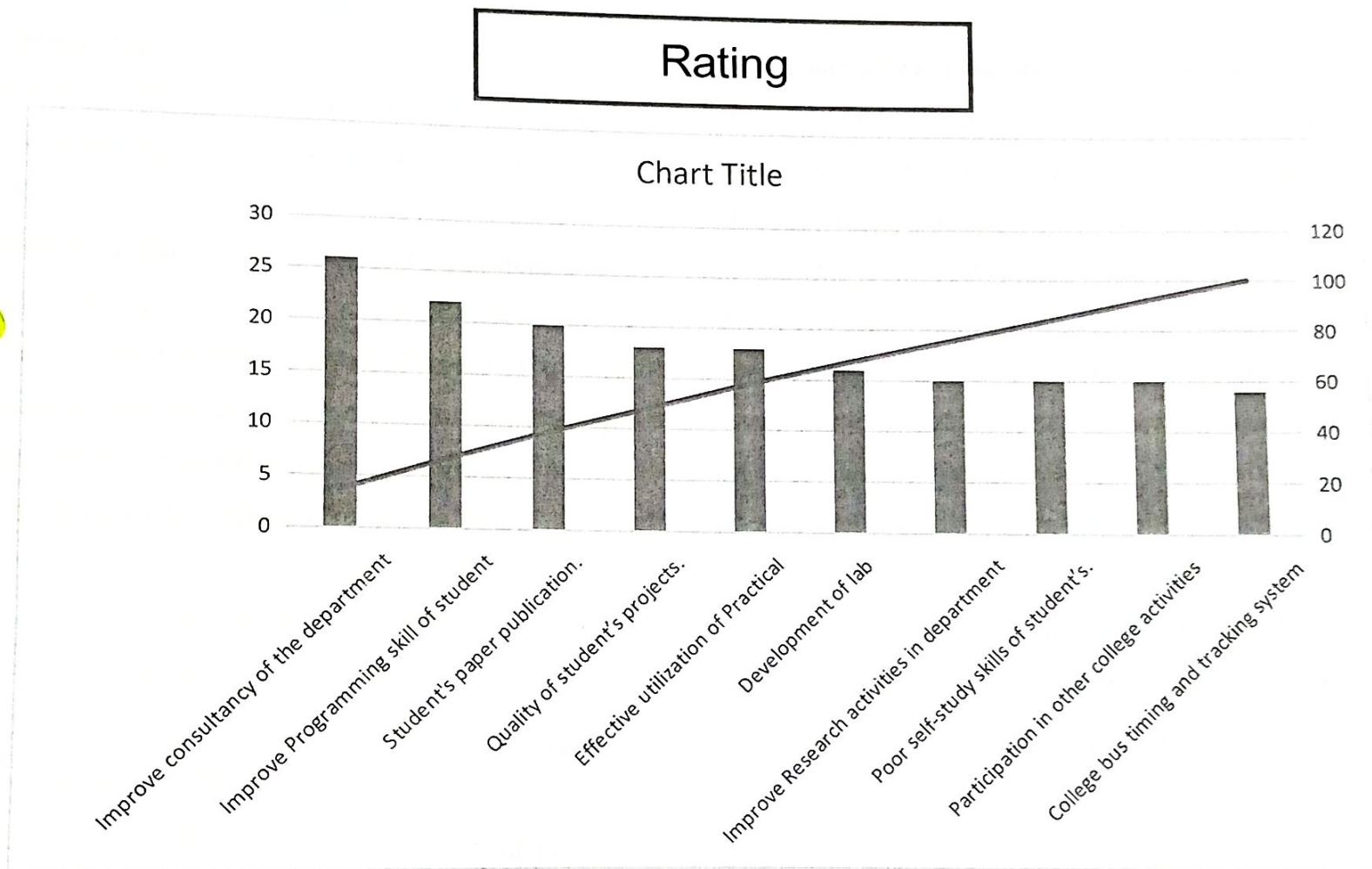
### PROBLEM SELECTION

Table b.1 Problem Selected through rating method

Sr. No.	PROBLEM	VNK (5)	AKK (5)	KMN (5)	SSK (5)	KSK (5)	RDP (5)	TOTAL (30)
1	Improve Research activities in department	2	3	2	3	3	3	15
2	Students' paper publication.	3	2	2	5	2	2	20
3	Development of lab	5	3	3	3	4	2	16
4	<b>Improve consultancy of the department</b>	4	4	4	4	4	4	<b>26</b>
5	Quality of student's projects.	3	2	2	3	3	2	18
6	College bus timing and tracking system	3	2	4	2	4	2	14
7	Poor self-study skills of student's.	3	3	2	3	2	2	15
8	Participation in other college activities	4	3	3	3	3	2	15
9	Improve Programming skill of student	2	1	1	3	3	2	22
10	Effective utilization of Practical	4	4	2	3	3	1	18

## b.1 Pareto Diagram

The fig. 2.1 shows the Pareto diagram, representing the weightage of each identified problem. It depicts that the problem **Improve consultancy of the department** has maximum rating as compared to other problems.



**Figure b.1 Pareto Diagram**



**c. Problem Definition:****c.1 Definition of Problem:**

India is one of the developing countries in the world. In our country there are number of technical institutions. Being technical Institute it is our whole and sole responsibility that we should try to solve the problems faced by communities and industries. In real world industries face many challenges as well as the various products for particular tasks. To maintain the quality of education as well as the placements institutions must face accreditation committees. Various accreditation committee have their own consultancy that must get fulfilled to score points. In line with that faculty should also be aware of recent technological world problems and finding their solutions.

There are various organizations who provide consultancy to industries. Being a technical Institution one of the infrastructure that is Laboratories and equipment's required for providing a solution for industry problems. Consultancy also helps to get in touch with the industries and upcoming technologies as well as it also helps to develop a thought process in faculties and to upgrade their technical skills. Electrical engineering department has a good record of consultancy profile for last three years, for further improvement of revenue generation and skill gradation this problem is selected.

**c.2 Problem Statement:****To improve consultancy of department:**

In line with the above mentioned reasons we have planned to develop consultancy profile of electrical department

After defining problem we have notified all the personnel in the department and also arranged a guest lecture on importance of consultancy.



## **d. Problem:**

### **d.1 Analysis of Problem:**

Educational institutions are a main building block of any country. Engineering institutes hold the key for the development of the country. Faculties play an important role for producing highly skilled and knowledgeable engineers. Upgrading faculties' knowledge as well as skills is an important aspect in improving overall institutions' consultancy profile. Consultancy is one of the areas which can address group discussion, brainstorming sessions and problem-solving skills of faculties. It also improves the technical knowledge of a faculty individual. Considering the last 3 years of consultancy in the electrical department, it is observed that compared to other departments, we are lagging in the consultancy area. There are a number of reasons behind this particular problem. The very first reason is that faculties are mostly engaged in their academic work, so they are giving less importance to consultancy work. Very few senior faculties are involved in consultancy work, and there is also a little gap between senior and junior faculty members. Junior faculties are unaware of industrial scenarios and therefore lag in searching and doing consultancy work. Even though having a good educational qualification, a faculty fails in solving real-world problems given by industries and also has a least amount of industry handling skills. Industries also seem to be more relying on various consultancy providers in the market rather than giving consultancy work to technical institutions. Because of a lack in faculty skills, they fail to fulfill the requirements of industries. Because of this bad reputation, many industries do not trust institutes for their work. As we know that industries work around the clock, it is very important that one should always stick to the timeline given by industries. But because of many other portfolios, faculties and institutions fail to provide a solution to a problem given by industry within the stipulated time. Time management is a main hurdle while getting consultancies from industries.

## e. Identification of the Causes:

### e.1 Listing of Causes:

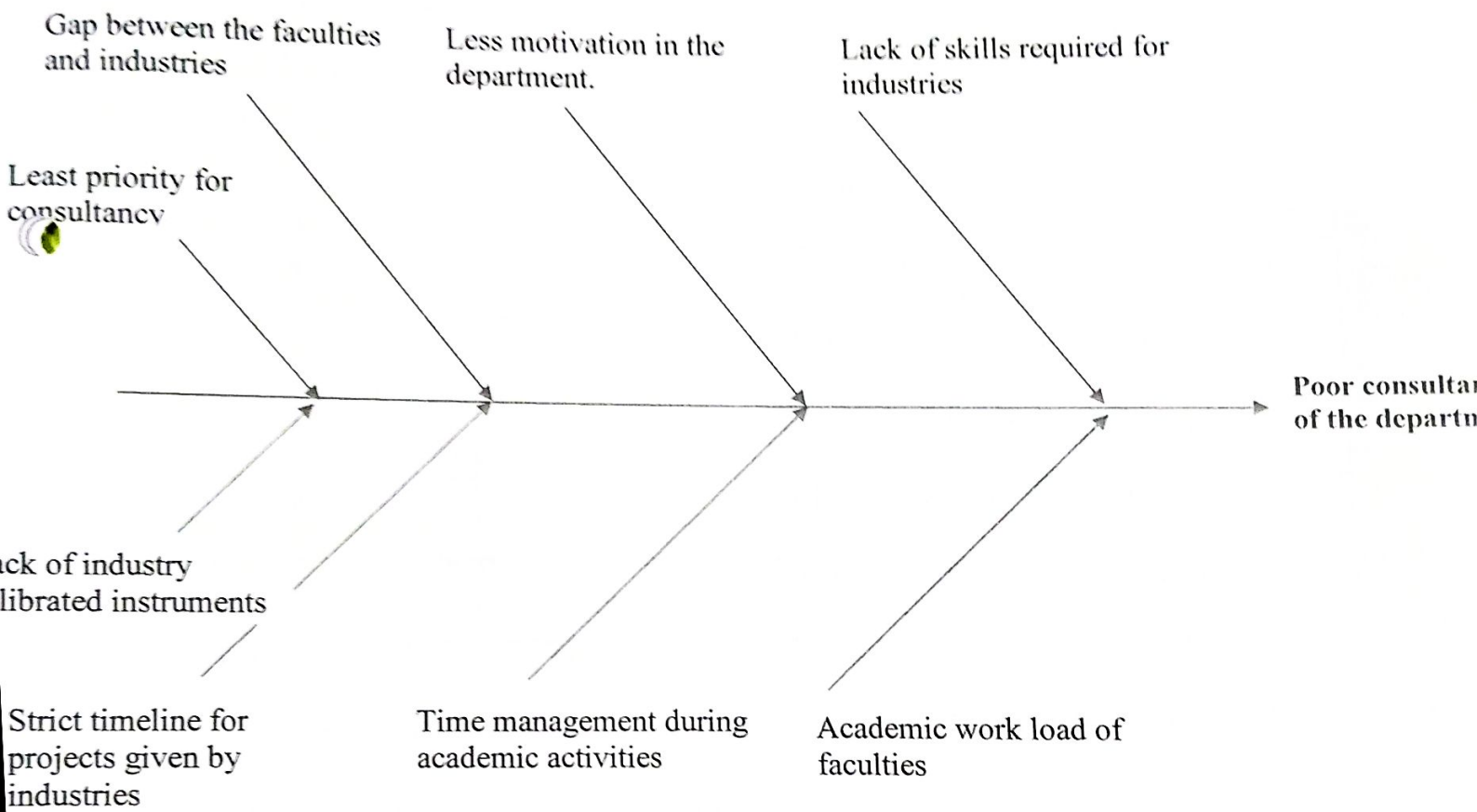
Any problem can be tackled efficiently only if we have a sound and in-depth knowledge of the reasons responsible for the problem. We started by making a rough list of the causes which are responsible for consultancy of the department.

**Table e.1 List of causes**

Sr. No	List of Causes
1.	Gap between the faculties and industries
2.	Less motivation in the department.
3.	Gap between senior and junior faculties
4.	Academic work load of faculties
5.	Time management during academic activities
6.	Strict timeline for projects given by industries
7.	Lack of industry calibrated instruments
8.	Least priority for consultancy work
9.	Lack of skills required for industries

e.2 FISH-BONE DIAGRAM: -

Figure e.1 Fish-bone diagram





## f. Root Cause Analysis:

### (WEIGHTAGE POINT METHOD)

Table f.1 causes

Sr No.	causes	Average Weightage out of 10
A.	Lack of skills required for industries	7
B.	Less motivation in the department.	7
C.	Gap between the faculties and industries	7
D.	Least priority for consultancy	8
E.	Lack of industry calibrated instruments	6
F.	Strict timeline for projects given by industries	6
G.	Time management during academic activities	7
H.	Academic work load of faculties	6

## g. Data Analysis on Root Cause:

With reference to the above root causes we referred last two years consultancy data of the department where we observed the type of work to be done, contribution of each faculty. From the available data it is observed that very few faculties are involved in the consultancy work and many faculty don't even aware about consultancy work as it is our prime duty as an engineer to address the technical issues and develop a solution. Also it is observed that we don't have industry calibrated instrument for consultancy.

It is also observed that type of work to be done is not fixed and work to be done is not as per the professional benchmark, as we were visiting the industry, people in the industry were comparing our work to the professional experts and were demanding for the same type of service. As faculty is involved in the academic and administrative work so sometime it is difficult to manage time or deadlines given by the industries. Also faculties lagging in industry skills so nature of work to be submitted or thinking pattern is not up to the professional level.

**Consultancy in year 2017-18**

Sr.no	Name of Faculty / Staff	Title of Service	Company name and sector	Received fee Rs.	Date of completion MM/DD/YY
1	Dr. H.T.Jadhav Mr. D.A. Sawant	Programmable ringing bell	Dr.Sau Kamaltai Gawai Institute of Engg.	3000	06/01/2016
2	Dr. H.T.Jadhav Mr. D.A. Sawant	Water Level Indicator for overhead water tank	Mr. Banode House Pune	800	05/10/2016
3	Dr. H.T.Jadhav Mr. D.A. Sawant	Water Level Indicator for overhead water tank	Mr. Banode House Pune	1150	09/17/2016
4	Dr. H.T.Jadhav Mr. D.A. Sawant Mr. A.N.Jadhav Mr.S.S. Kadam	Third party inspection of Islampur municipality Ambika Udyan Fountain testing.	Islampur Municipal Corporation	37727	10/14/2016
5	Dr. H.T.Jadhav Mr. D.A. Sawant Mr. A.N.Jadhav Mr.S.S. Kadam	Third party inspection of Islampur municipality Ambika Udyan Electrification	Islampur Municipal Corporation	32343	4/27/2017
	<b>Total Rs.</b>			<b>75,020/-</b>	

**Consultancy in year 2017-18**

Sr.no	Name of Faculty / Staff	Title of Service	Company name and sector	Received fee Rs.	Date of completion MM/DD/YY
1	Dr. H.T.Jadhav(DAS)	Programmable ringing bell	Challenger Academy Koregaon	3000	7/22/2017
2	Dr. H.T.Jadhav(ANJ SSK DAS)	Third party inspection of Islampur municipality firefighting staff Quarter Electrification	Islampur Municipal Corporation	4564	10/17/2017
3	Mr.Arun Thorat ,Dr. H.T.Jadhav(ANJ SSK DAS TPP)	Being installation service of capacitor on farmers irrigation motor pump for examine the PF.	IIT Bombay	77880	1/25/2018
4	Dr.V.N.Kalkhambkar(ANJ)	UPS Battery De-sulfation and testing	Rajarambapu Sahakari Bank Ltd.(Scheduled Bank)	4900	2/2/2018
5	Dr. H.T.Jadhav(ANJ SSK DAS)	Third party inspection of Islampur municipality street light Electrification	Islampur Municipal Corporation	2874	3/7/2018
6	Arun Thorat	Testing of DC	Shree construction	5000	3/21/2018



		motors	patan	
	<b>Total Rs.</b>			<b>98,218/-</b>

**Consultancy in year 2018-19**

Sr.no	Name of Faculty / Staff	Title of Service	Company name and sector	Received fee Rs.	Date of completion MM/DD/YY
1	Dr. V.N Kalkhambkar (DAS)	Programmable ringing bell testing charges	Principal KRP Kanya Mahavidyalay Islampur	2250	5/6/2018
2	Dr. V.N Kalkhambkar (SSK ,DAS)	Energy Audit of Motor pumps for drinking water well at Gotkhindi village	Gram-panchayat Gotkhindi	18880	14/09/18
3	Mr. Arun Thorat ( SSK ,ANJ)	Third party inspection LED street lighting at Kadegaon nagar-panchayat.	Blue Rays Solar System	5000	28/9/2018
4	Dr. V.N Kalkhambkar (ANJ SSK DAS)	Third party inspection of Islampur municipality Internal electrification work at Ninai-nagar Gym and Hall	Islampur Municipal Corporation	9063	2/11/2018
5	Mr. Arun Thorat ( SSK ,ANJ)	LED Lamp Testing charges	The Sarpanch Gram panchayat Ladegoan	2000	6/12/2018
6	Dr. V.N Kalkhambkar (DAS)	Water Level Indicator for overhead water tank	Mr. Patil House Palus Colony	1700	4/1/2019
7	Dr. V.N Kalkhambkar (DAS)	Programmable ringing bell testing charges	Loknete Rajarambapu Patil High school Vashi (Walva)	7000	4/1/2019
8	Dr. V.N Kalkhambkar (ANJ SSK DAS)	Third party inspection of Islampur municipality Vishalnagar Garden Electrification	Islampur Municipal Corporation	7586	16/02/2019
9	Dr. V.N Kalkhambkar (ANJ SSK DAS)	Third party inspection of Islampur municipality Sambhaji nagar Garden Electrification	Islampur Municipal Corporation	4482	16/02/2019
	<b>Total Rs.</b>			<b>57,961/-</b>	

**h. Development of Solution:**



By considering the above all listed causes we decided to make strategy for the consultancy and along with the facilitator we make a team at the departmental level and decided to work in the manner everyone will approach the work from their personal contacts and then according to the experty work will be allotted to that faculty team. And also we are discussing this consultancy topic in every department meeting just to trace the progress of the work and also discussing the scope of the work and where we are lagging i.e if any advance equipment is necessary or not. The teams that we form is as below.

To motivate faculty for the consultancy work we arranged one expert talk of prof. Lokesh patil sir from mechanical engineering department who has a good consultancy record in the institute and on Saturday we were also visited industries nearby us just to address the work

TEAM 1	TEAM 2	TEAM 3	TEAM 4
Dr. V.N.Kalkhambkar(leader)	Dr. H.T.Jadhav(leader)	Mr.A.R.Thorat(leader)	Mrs. Y.N.Bhosale(leader)
Mr. K.M.Nathgosavi	Mr.K.S.Kulkarni	Mr.A.K.Koshti	Mr.S.S.Kumbhar
Mr.R.D.Patil	Mr.I.srikant	Mr. VRSV B.Pulavarthi	Mr.P.D.Bamane
Dr.P.P.Gupta	Ms.S.S.parve		Mr.S.D.Khandare

### i. Foreseeing Probable Resistance:

After having brainstorming session and listing causes and all we display the team list to all faculty members and then we come across certain probable resistances to the developed solution. These causes are listed below.

1. What happened if we cannot improve the department consultancy work
2. What kind of work we have to do exactly
3. Whether we will manage meet the deadlines of the industry or not.
4. Whether we get sufficient time through our academic schedule

### j. Trial Implementation and Checking the Performance / Results:

After all steps, everyone find out tried to find out the consultancy work on their personal contact or mutually contact including non-teaching staff too. Whatever may be the work we were welcoming without thinking whether we are getting money or not.

In the trial we realized that we don't have an industry calibrated equipment's as customers are demanding for it and also to just to cut of the audit can be minimized from the customer point of view.

The data of the work to be done is given below

Consultancy in year 2019-20

Sr.no	Name of Faculty / Staff	Title of Service	Company name and sector	Received fee Rs.	Date of completion MM/DD/YY
1	Dr. V.N. Kalkhambkar D.A.Sawant.	Automatic ringing bell installation	Prime Global Exim	7500	14/06/2019
2	Dr.V.N.Kalkhambkar D.A.Sawant.	Automatic ringing bell installation with additional timer	Lal Bahadur shaatri Mahavidyalay Bahe	10438	20/08/2019
3	Dr V N Kalkhambkar SSK ANJ	Energy audit of Doodh Sangh	Rajarambapu Patil Doodh Sangh, Islampur	29122	03/09/2019
4	Dr V N Kalkhambkar SSK ANJ	Energy audit of vidyalaya	Krantisinha Nana Patil Mahavidyalaya, Walva	6000	26/11/2019
5	A K Koshti, K M Nathgosavi	Harmonics analysis	Castco Industry, Kolhapur	9440	30/11/2019

	SSK				
6	Dr V N Kalkhambkar SSK ANJ	Energy audit of paper mill	Shriram Paper mill MIDC, Shirala	37920	03/12/2019
7	Dr. V.N. Kalkhambkar D.A.Sawant.	Automatic ringing bell installation	Azad Vidyalay, Kasegaon	9440	05/12/2019
8	Dr. V.N. Kalkhambkar D.A.Sawant.	Automatic ringing bell installation	Arts & commerce college, Palus	9440	26/12/2019
9	Dr.V.N.Kalkhambkar D.A.Sawant.	Automatic ringing bell installation with additional timer	Brahmhadas Mahavidyalay Belawade	10438	08/01/2020
10	Dr H T Jadhav SSK	Energy audit of vidyalaya	Raja shivchhatrapti arts and commerce colg, Mahagaon	5900	04/02/2020
11	Dr. V.N.Kalkhambkar D.A.Sawant.	Automatic water level controller	Krishna Institute of Medical Sciences, Deemed University Karad	17406	07/03/2020
12	Dr. V.N.Kalkhambkar D.A.Sawant	Automatic ringing bell installation with additional timer	Vategaon High school Vategaon	10438	16/03/2020
13	Dr. V.N.Kalkhambkar D.A.Sawant	Automatic ringing bell installation with additional timer	Shivaji High school Vategaon	10438	31/03/2020
14	Mr.Rahul D.Patil Sriprasad Kadam	Harmonic analysis	arka electric kupwad MIDC	5900	05/02/2021
	<b>Total Rs.</b>			<b>Rs 1,79,820/-</b>	

### k. Regular Implementation:

In the regular implementation we were addressing the issues again in the industry and also taking help of the incubation center in the institute and approached some work as listed below.



**Acknowledgements:**

We take this opportunity to thank Dean, Dr. S. K. Patil for the whole hearted support extended to us throughout the Best practices activity. Dr. S. K. Patil gave lots of input and suggestions to bring out the best in us. The encouraging words that have been extended were great boost for the completion of this work.

We would like to thank the Director, Dr. Mrs. Sushama S. Kulkarni of Rajarambapu Institute of Technology, Rajaramnagar for giving us an opportunity to carry out this activity. The motivation that has been extended to us from the very first interaction with our facilitator Head of Department Dr. V. N. Kalkhambkar made us more dedicated and result oriented. The encouragement that has been extended in every stage of the progress of Best practices activity was unexplainable.

My sincere thanks to Mrs. Savita Awate madam and Mr. Sandipan Jadhav sir who encouraged us to undertake this activity.