

ELECTRONIC INFORMATION TECHNOLOGY PRODUCT MOBILE PHONE REPAIRING & SERVICING

INTRODUCTION

A Mobile or cellular (tele) phone is a long-range, portable electronic device for peer-to-peer telecommunications over long distances.

Most current mobile phones connect to a cellular network of base stations (cell sites), which is in turn interconnected to the public switched telephone network (PSTN) (the exception are satellite phones). Cellular networks were first introduced in the early to mid 1980s. Prior mobile phones operating without a cellular network (the so-called 1G generation) such as Mobile Telephone Service, Date Back to 1946. Until the mid to late 1980s, most mobile phones were sufficiently large that they were permanently installed in vehicles as car phones. With the advance of miniaturization, currently the vast majority of mobile phones are hand held. In addition to the standard voice function of a telephone, a mobile phone can support many additional services such as SMS for text messaging, packet switching for access to the Internet and MMS for sending and receiving photos and video.

Market Potential:

From the slow start in 1995, the Indian mobile phone industry has come a long way. cellular services have registered a phenomenal growth of more than 100 percent annually and this is an increasing demand for better services and lower price.

India has emerged as the second largest mobile hand set market, poised for explosive growth by 2007 and within first quarter of 2006, it become a global hub for mobile hand set manufacturers. there are over 30 million GSM subscribers in the country and an increase of 100 percent over the last year. In addition, there are over 10 million CDMA subscribers.

Dominated largely by Nokia, with a total market share of 59 percent followed by Samsung 13 percent and Motorola of 7 percent respectively. The Indian mobile handset market catered to 45 million as of June, 2005. The total number of mobile phone sold was around 21 million in 2004 which is estimated to be 34 million in 2005. As the mobile hand set market is growing similarly the demand of servicing of handsets is also growing. The branded companies like Nokia and Samsung etc. have their own service centers in the metros and big cities but due to a gap in between demand and service provided, another servicing center with qualitative service at optimum price are required. This demand is more at town level since rarely available branded companies servicing centers while use of mobile hand set increasing day by day. So enough potential is available for setting up of mobile servicing units in the SSI sector.

BASIS AND PRESUMPTIONS

- i) The basis for calculation of servicing capacity has been taken on single shift basis on 75% efficiency.
- ii) The maximum capacity utilization on single shift basis for 300 days a year. During first year and second year of operations the capacity utilization is 60% and 80% respectively. The unit is expected to achieve full capacity utilization from the third year onward.
- iii) The salaries and wages, cost of raw-materials, utilities, rents, etc. are base on the prevailing rates in and around Kolkata. These cost factors are likely to vary with time and location.
- iv) Interest on term loan and working capital loan must be preferably current rate. Otherwise, the rate of 13% on an average may be taken. This rate may vary depending upon the policy of the financial Institutions/Agencies from time to time.
- v) The cost of machinery and equipments refer to a particular make/model and prices are approximate.
- vi) The break-even point percentage indicated is of full capacity utilization.
- vii) The project preparation cost etc. whenever required could be considered under pre-operative expense.

The essential production machinery and test equipment required for the project have been indicated. The unit may also utilize common test facilities available at Electronics Test & Development Centre (ETDCs) and Electronic Regional Test Laboratories (ERTLs) and Regional Testing Centres (RTCs).

IMPLEMENTATION SCHEDULE:

The major activities in the implementation of the project has been listed and the average time for implementation of the project is estimated at 12 months:

	Period (in months) (Suggestive)
1. Preparation of project report	1
2. Registration and other formalities	1
3. Sanction of loan by financial Institutions	3
4. Plant & Machinery :	
a) Placement of orders	1
b) Procurement	1
c) Power connection/Electrification	2

5.	Procurement of Raw-material	1
6.	Recruitment of technical Personnel etc.	1
7.	Trial production / Servicing	1

Note:

1. Many of the above activities shall be initiated concurrently;
2. Procurement of Raw-materials commences from the 8th month onwards;
3. When imported plant and machinery are required, the implementation Period of project may vary from 12 months to 15 months.

Technical Aspect:

1. Servicing Process: As there is not any defined procedure for servicing of mobile hand set available at present. The servicing of mobile hand set usually depends on the brand & model no. of handset due to different design concept used by companies in manufacture and fast technological changes in era of mobile technology. Minor fault may be rectified with little experiences however major fault repairing require knowledge and experience both. The repairing basically consist of hard ware & Software repairing. Hardware faults may rectified either by replacing the PCB module in which fault occurred or by identify the section inside the PCB module where the fault occurred and replace the faulty SMD components / Chips/ Microprocessor. The software fault may rectified by using standard software CD for particular brand and model no., cable & a complete computer with appropriate software package.

2. QUALITY STANDARDS: As per customer

3. PRODUCTION CAPACITY PER ANNUM:

Qty. : -
Value: Rs 8,00,000/-

4. MOTIVE POWER:

5 KW

5. POLLUTION CONTROL:

The Govt. accords utmost importance to control environmental pollution. The small-scale entrepreneurs should have an environmental friendly attitude and adopt pollution control measures by process modification and technology substitution.

India having acceded to the Montreal Protocol in Sept., 1992, the production and use of Ozone Depleting Substances (ODS) like chlorofluore Carbon (CFCs), Carbon Tetrachloride,

Halons and methyl chloroform etc. need to be phased out immediately with alternative chemicals/solvents. A notification for detailed Rules to regulate ODS phase out under the Environment Protection Act., 1986 have been put in place with effect from 19th July, 2000.

The following steps are suggested which may help to control pollution in electronics industry wherever applicable:

- i) In electronic industry fumes and gases are released during hand soldering/wave soldering/Dip soldering which are harmful to people as well as environment and the end products. Alternative technologies may be used to phase out the existing polluting technologies. Numerous new fluxes have been developed containing 2-10% solids as opposed to the traditional 15-35% solids.
- ii) Electronic industry uses CFCs, Carbon Tetrachloride and Methyl Chloroform for cleaning of printed circuit boards after assembly to remove flux residues left after soldering, and various kinds of foams for packaging.

Many alternative solvents could replace CFC-113 and Methyl Chloroform in electronics cleaning. Other Chlorinated solvents such as trichloroethylene, per chloroethylene and methylene chloride have been used as effective cleaners in electronics industry for many years. Other organic solvents such as Ketones and alcohols are effective in removing both solder fluxes and many polar contaminants.

6. **ENERGY CONSERVATION:**

With the growing energy needs and shortage coupled with rising energy cost, a greater thrust in energy efficiency in industrial sector has been given by the Govt. of India since 1980s. The Energy Conservation Act.2001 has been enacted on 18th Aug., 01, which provides for efficient use of energy, its conservation & capacity building of Bureau of Energy Efficiency created under the Act.

The following steps may help for conservation of electrical energy:

- i) Adoption of energy conserving technologies, production aids and testing facilities;
- ii) Efficient management of process/manufacturing machineries and systems, QC and testing equipments for yielding maximum Energy Conservation;
- iii) Optimum use of electrical energy for heating during soldering process can be obtained by using efficient temperature controlled soldering and de-soldering stations;
- iv) Periodical maintenance of motors compressors etc.;

- v) Use of power factor correction capacities. Proper selection and layout of lighting system; timely switching on-off of the lights; use of compact fluorescent lamps wherever possible etc.

i) FINANCIAL ASPECTS:

Land and Building

Built up area	700 Sq. ft.
Office, Stores	200 Sq. ft
Assembly and testing	500 Sq. ft
Rent payable/annum	Rs. 36,000/-

ii) Machinery and Equipment:

Sl.No.	Description	Ind./Imp.	Qty.	Value(Rs.)
1	Personal Computer with Pheripherals & Software	Ind.	01	35,000.00
2.	Hot Air Gun	Ind.	04	16,000.00
3.	DC Generator	Ind.	01	15,000.00
4.	Card Reader	Ind.	01	10,000.00
5.	Digital Multimeter	Ind.	04	4,000.00
6.	Magnifying Glass	Ind.	04	4,000.00
7.	DC Power Supply	Ind.	01	3,000.00
8.	BGA Kit	Ind.	02	6,000.00
9.	Micro Soldering Iron	Ind.	02	4,000.00
			Total Rs.	97,000.00

Other Fixed Assets

Electrification charges @ 10% of the cost of machinery and equipment	9,700.00
Office equipments, furniture and working table etc.	15,000.00
Mould, Die	nil
Tools, Jigs and Fixtures etc.	4,000.00
Pre-operative expenses	4,000.00
Total	32,700.00
Total Fixed Capital	1,29,700.00

Working Capital per Month :**i) Staff & Labour :**

Sl.No.	Designation	No. of persons	Salary/Month (Rs.)	Total Salary Per Month (Rs.)
1.	Production Manager	01	4,000.00	4,000.00
2.	Skilled Worker	02	3,000.00	6,000.00
3.	Un-skilled Worker	03	2,500.00	7,500.00
4.	Peon	01	2,000.00	2,000.00
	+ Perquisites 15% of salary			2,925.00
			Total	22,425.00

ii) Raw-material Requirement Per Month:

Sl.No.	Description	Qty.	Value(Rs.)
1.	SMD Components	50	3,000.00
2.	C. Cont.	05	1,900.00
3.	SMD Chips	20	9,700.00
4.	Ant. Switch	10	600.00
5.	P.A.	15	1350.00
6.	3310 on/off SW.	10	400.00
7.	Buzzer	10	500.00
8.	Misc.		3,000.00
		TOTAL	20,450.00

iii) Utilities Per Month:

Power	1000.00
Water	200.00
Total	1200.00

v). **Other Contingent Expenses Per Month:**

1.	Rent	3,000.00
2.	Postage and stationery	700.00
3.	Telephone/Telex/FAX charges	500.00
4.	Repair and Maintenance	2,000.00
5.	Transport and Conveyance Charges	1,000.00
6.	Advt. and Publicity	500.00
7.	Insurance and Taxes	800.00
8.	Miscellaneous expenditure	2,000.00
Total		10,500.00

Total Recurring Expenditure Per Month (i+ii+iii+iv) Rs. 54,575.00

Total Capital Investment:

Fixed Capital	2,52,000.00
Working Capital on 3 months Basis	1,63,725.00
Total	2,93,425.00

Financial Analysis

Cost of production per Annum :

Total recurring Expenditure	6,54,900.00
Depreciation on Machinery and Equipment @ 10%	9,700.00
Depreciation on tools, Jigs and fixtures @ 25%	1,000.00
Depreciation on office equipment, furniture @ 20%	3,000.00
Interest on total capital investment @ 13%	38,145.00
Total	7,06,745.00
Or say	7,06,700.00

Turn Over Per Annum:

Item	Qty.(Nos.)	Rate/ Unit (Rs.)	Total Servicing Value (Rs.)
Mobile Phone Repairing & Servicing	—	—	8,00,000.00

Profit Per Annum (Before Taxes)

Turn Over Per Annum – Cost of Production Per Annum = Rs. 93,300.00

$$\text{Net Profit Ratio} = \frac{(\text{Profit/ Annum}) \times 100}{(\text{Sales/ Annum})} = \frac{93,300 \times 100}{8,00,000} = 11.6\%$$

Break Even Point: 71.6%

Fixed Cost Per Annum:

Rent	36,000.00
Depreciation on Machinery and Equipment @ 10%	9,700.00
Depreciation on tools, Jigs and fixtures @ 25%	1,000.00
Depreciation on office equipment, furniture @ 20%	3,000.00
Interest on total capital investment @ 13%	38,145.00
Insurance	300.00
40% Salaries & wages	1,07,640.00
40% other contingent & utilities (Excluding rent & Insurance)	40,320.00
Total fixed cost	2,36,105.00
Or say	2,36,000.00

$$\text{Break Even Point:} = \frac{\text{Fixed cost} \times 100}{\text{Fixed cost} + \text{Profit}} = \frac{2,36,000 \times 100}{2,36,000 + 93,300} = 71.6\%$$

Additional Information :

- a) The Project Profile may be modified/tailored to suit the individual entrepreneurship qualities/ capacity, production programme and also to suit the locational characteristics, wherever applicable.

- b) The Electronics Technology is undergoing rapid strides of change and there is need for regular monitoring of the national and international technology scenario. The unit may, therefore, keep abreast with the new technologies in order to keep them in pace with the development for global competition.
- c) Quality today is not only confined to the product or service alone. It also extends to the process and environment in which they are generated. The ISO-9000 defines standards for Quality Management Systems and ISO-14001 defines standards for Environmental Management System for acceptability at international level. The unit may therefore adopt these standards for global competition.
- d) The margin money recommended is 25% of the working capital requirement at an average. However, the percentage of margin money may vary as per bank's discretion.

Name and Addresses of Machinery & Equipment Suppliers :

1. **M/s. Applied Electronic Ltd., A-5, Wagle Industrial Estate, Thane 400604**
2. **M/s. Noble Electronics, 354, Lajpat Rai Market, Delhi -6**
3. **Local Market, Kolkata.**

Name and Addresses of Raw-material Suppliers :

1. **M/s. modern electronic works
E-5, E-6 , DSIDC Complex, Welcome Colony, Seelampur - III,
New Delhi - 110053**
2. **M/s. Vistel Components
40, Gali No. - 13, Railway road, Samay pur, New Delhi - 110042**
3. **M/s. I.C.I. Electronics
C - 80, Sect. - 63, Noida - 201301**
4. **Local Market, Kolkata.**