PROJECT PROFILE ON MODEM

1. INTRODUCTION:

In order to know how a modem works, you should be familiar with the typical sections of a modem circuit. Most modems today can be fabricated with only a few specialized chips and discrete parts, and virtually all computer communication systems contain the same essential parts.

Of course, computers can not work directly on your telephone line. The digital information processed by computers must be translated or modulated in to audio frequency tones. The frequency of these signals is within the frequency range of telephone lines. Through telephone lines this signal are transmitted. The sound signal coming from the telephone lines must be converted back into digital information or demodulated for the computer. A device called a Modulator/DE Modulator (modem) performs the continuous process of modulation and demodulation between a computer and telephone line.

2. MARKET POTENTIAL:

Modems are generally required by almost every PC users for internet connection. As the number of personal computers has grown into the millions, the demand for faster and more reliable modem communication has increased resulting in impressive speed and performance. Since the existing telephone network infrastructure can not support data speeds faster than 56Kbps (V. 90 standard), so this standard would almost certainly be the final analog modem speed. Analysts predict that the sale of modem of this standard would be quite high in the coming years.

3. Basis and Presumption

i) The production capacity is calculated on single shift of 8 hrs. at 75% efficiency for 300 working days in a year.

ii) Interest in this project profile has been calculated at the rate of 16% per annum on total capital investment. However, this figure is likely to vary depending on the financial outlay of the project as well as location of the unit.

iii) The break even point percentage indicated is of full capacity utilization.

iv) The cost of machinery and equipment as indicated refer to a particular make and prices are approximate those prevailing at the time of preparation of project profile. Similarly the rent of land and building indicated in the profile relates to a particular place and should be updated depending upon place of implementation.

v) The salaries and wages, cost of raw- materials, utilities, cost of land and rents are based on the prevailing rates in and around Meghalaya at the time of preparation of project profile. These cost factors are likely to vary with time and with location.

vi) Pay back period 5 years from second year of operation.

vii) Units may also utilize common test facilities available at Electronics Regional Test Laboratories (ERTLs) and Electronics Test and Development Centres (ETDCs) set up by the state Govt. and STQC Dte. of the department of Electronics to manufacture products conforming to BIS standards.

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 month) Suggestive
1.	Preparation of Project Report		1
2.	Registration & other formalities		1
3.	Sanction of loan by financial Institutions		3
4.	Plant & Machinery :-		
	a)	Placement of orders	1
	b)	Procurement	2
	c)	Power Connection / Electrification	2
	d)	Installation / Erection of machinery/Test	
		Equipment	2
5.	Procurement of raw materials		2
6.	Recruitment of Technical Personnel etc.		2
7.	Trial Production		11
8.	Commercial Production		12

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 ASPECTS:

1. Process of Manufacture

The whole manufacturing process can be categorized into the following steps:

(a) PCB assembly

(b) Interconnection and mounting in the cabinet.

(c) Testing for its performance.

(d) Quality control

(e) Finishing and packaging.

All the tested electronic components are mounted on the PCB as per the layout diagram / B.O.M and then soldered. A visual check is carried to ensure that the orientation and position of the component is as per the layout diagram and there are no dry solders. The soldered side of the PCB is then cleaned using solvents to remove solder flux. The assembled PCB is tested individually on the set up.

In next step the assembled unit is properly interconnected and then mounted in the cabinet.

Functional checks are performed to ensure that the basic functions of modem are working correctly.

The modem is again tested for the quality and the units having the required quality are ultimately sealed, packed and dispatched.

2. QUALITY STANDARDS

Modem for Internet Access, 56Kbps (V.90 standard)

3. PRODUCTION CAPACITY PER ANNUM :

QUANTITY : 4,500 Nos.

VALUE : Rs. 1,39,50,000

4. MOTIVE POWER: 5 KVA

5. POLLUTION CONTROL:

The Government 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 September 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 may help to control pollution in Electronics Industry wherever applicable:

i) In Electronics 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. Alternate 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) Electronics 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 Mythlen Chloride have been used as effective cleaners in Electronics Industry for many years. Other organic solvents such as Ketones and Alcohol's are effective in removing both solder fluxes and many polar contaminants.

6. Energy Conservation:

With the growing energy demand 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 August, 2001, which provides for efficient use of energy, its conservation and capacity building of bureau 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 machinery 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 desoldering stations.

iv) Periodical maintenance of motors, compressors etc. use of power factor correction capacitors.

v) Proper selection and layout of lighting system.

vi) Timely switching. On-Off of the lights;

vii) Use of compact fluorescent lamps wherever possible etc.

Financial Aspects

(i) Land & Building

Built up area	300 Sq. Mtr.
Office, Stores	100 Sq. Mtrs.
Assembly & Testing	200 Sq. Mtrs.
Rent Payable per annum	**Rs. 84,000/-**

(ii) Machinery and Equipment

Sl.No	**Description**	**Ind./Imp.**	**Qty.**	**Unit Price**	**Value Price (Rs.)**
1.	Soldering & Desoldering station	Ind.	1	1,30,000	1,30,000
	with attachments				
2.	Oscilloscope (Dual Trace)	Ind.	1	48,000	48,000
3.	Digital Multimeter	Ind.	3	3,000	9,000
4.	LCR & Q Meter	Ind.	1	23,000	23,000
5.	Computer with std. configuration	Ind.	1	34,000	34,000
6.	Software Package	Ind.	1	24,000	24,000
7.	IC Tester	Ind.	1	13,000	13,000
8.	Analyser (Test set up)	Ind.	1	1,25,000	1,25,000
9.	D.C. Power Supply (30V, 2 Amp)	Ind.	2	3,000	6,000
				Total	**4,12,000**
	Other fixed Assets				
10.	Electrification and Installation charges				4,120
	at the rate 10% of Machinery & Equipment				
11.	Cost of Tools/Jigs/Fixtures/Moulds etc.				15,000
12.	Cost of Office Equipment/Working Table etc.				50,000
13.	Pre-operative expenses				10,000
	Total fixed Capital				**4,91,120**

Working Capital Per Month :

(i) Staff & Labour

Sl. No.	Designation	No. of Person	Salary/month (Rs.)	Total Salary/ month (Rs.)
1.	Manager (Tech.)	1	6,000	6,000
2.	Sales Assistant/Marketing Officer	2	5,000	10,000
3.	Supervisor	1	4,500	4,500
4.	Accountant	1	4,000	4,000
5.	Skilled workers @ Rs.3000 per month	4	3,000	12,000
6.	Unskilled workers @ Rs.2200 per month	2	2,200	4,400
5.	Peon	1	2,000	2,000
	+ Perquisites @ 15% of Salary			6,435
			Total	**49,335**

(ii) Raw Material Per Month

Sl.No	Description		Cost/Unit
1.	Controller, Chipset, IC's etc.		1,700
2.	Printed Circuit Board (PCB)		380
3.	Resistors, Potentiometer, Cap., Transistor, Regulator,		240
	Led's, Transformer etc.		
4.	Connector, Telephone Jack, Micro switches etc.		130
5.	Plastic Housing		70
6.	Consumables, Packing material etc.		50
		Total	**2,570**

Total value of raw material required/month

375 x 2570 = 963750

(iii) Utilities Per Month

Power		4,700
Water		300
Total		**5,000**

(iv) Other contingent Expenses per month

1.	Rent		7,000
2.	Postage & Stationery		1,000
3.	Consumable Stores		4,500
4.	Repair / Maintenance		1,000
5.	Transport Charges		6,000
6.	Advertisement & Publicity		1,000
7.	Insurance		800
8.	Miscellaneous		3,000
	Total		**24,300**

Total Recurring Expenditure / Month = Rs. 10,42,385
(i + ii + iii + iv)

Total Capital Investment (Rs.)

Fixed Capital		4,91,120
Working Capital on 3 months basis		31,27,155
Total		**36,18,275**

Financial analysis:

Cost of Production (Per annum)

Total Recurring expenditure/annum	1,25,08,620
Depreciation on Machinery & Equipment @ 10%	4,120
Depreciation on Tools, Jigs, fixtures etc. @ 25%	3,750
Depreciation on Office Equipment, furniture etc. @ 20%	10,000
Interest on Investment @ 16%	5,78,924
Total	**1,31,05,414**

Turn Over Per annum

Item	**Qty.**	**Rate/Unit (Rs.)**	**Total Sales (Rs.)**
Modem	4,500	3,100	1,39,50,000

Profit Per Annum (Before tax) in Rs. = Turnover – Total sales per = 844586
per annum annum

Profit Ratio = Profit / annum x 100 = 6.0%
Sales / annum

Rate of Return = Profit / annum x 100 = 23.3%
Total capital Investment

Break Even Point

Fixed Cost Per annum

Depreciation (Total)	17,870
Rent	84,000
Interest	5,78,924
Insurance	9,600
40% of Salary and Wages	2,36,808
40% of other contingent Expenses and utitities (Excluding rent & insurance)	1,03,200
Fixed Cost Per Year =	**10,30,402**

BEP = (FC x 100) / (FC + Net Profit)= 10,30,402 x 100 = 54.95%
10,30,402 + 8,44,586

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 developments 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 adopt ISO 9000 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, EQUIPMENTS SUPPLIER

1.	M/s. Vaiseshaka Instruments	Testing & measuring
	2, Post Box Stall, 38 Industrial Area	
	Ambala Cantt, Haryana	
2.	M/s. Aplab	Testing & measuring
	6, Vasundhare, 6th Floor, 2.7 Sarat Bose Road,	
	Kolkata - 700020	
3.	M/s. International Electronics	Testing & measuring
	202 Champakalal Industrial Estate, 105 Sion East	
	Mumbai - 400022	
4.	M/s. Sumitron Exports Pvt. Ltd.,	Testing & measuring
	27, Community Centre, Naraina Phase - I, P.O. Box - 10227	
	New Delhi - 110028	
5.	M/s. Advance Tech Services,	Soldering Equipments & Circuit Aids
	56, 2nd Floor, Rani Jhansi Road	
	New Delhi - 110055	
6.	M/s. Inde Enterprises,	Soldering Equipments & Circuit Aids
	745, Sector- 8B, Chandigarh	
7.	M/s. Bergen Associate Pvt. Ltd.,	Soldering Equipments & Circuit Aids
	1082, Sector 27 - B, Chandigarh- 19	
8.	M/s. India Associates	Soldering Equipments & Circuit Aids
	16, Rest House, Crescent Off.	
	Church St., Bangalore -1	
9.	M/s. Navanidhi Electronics Pvt. Ltd.,	Soldering Equipments & Circuit Aids
	1-60/1, Shehapuri, Nacharam,	
	Hyderabad- 7	
10.	M/s. Control Signals	Soldering Equipments &
	C-62, Hari Nagar, Ashram, New Delhi - 110014	Circuit Aids
	E-mail tech@controlsignals.ner,	
	www.indiamart.com	

Name and Address of Raw Material Suppliers :

The consumables such as solder, flux, chemical, adhesive, PCB may be procured from the local market.