UP MSME 1-Connect

PROJECT REPORT

Planning to Start Your MSME Journey! Uncover Valuable Insights for your Business—Explore Now !!

PROJECT:

HEADPHONE MANUFACTURING UNIT

PROJECT REPORT

OF

HEADPHONE MANUFACTURING UNIT

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding Headphone Manufacturing Unit.

The objective of the pre-feasibility report is primarily to facilitate potential entrepreneurs in project identification for investment and in order to serve his objective; the document covers various aspects of the project concept development, start-up, marketing, finance and management.

[We can modify the project capacity and project cost as per your requirement. We can also prepare project report on any subject as per your requirement.]

PROJECT AT GLANCE

1 Name of Proprietor/Director XXXXXXXX
2 Firm Name XXXXXXXX
3 Registered Address XXXXXXXX
4 Nature of Activity XXXXXXXX **5 Category of Applicant** XXXXXXXX **6 Location of Unit** XXXXXXXX
7 Cost of Project 22.97 Rs. In Lakhs
8 Means of Finance
i) Own Contribution 2.30 Rs. In Lakhs **ii) Term Loan** 16.65 Rs. In Lakhs **iii) Working Capital** 4.02 Rs. In Lakhs
9 Debt Service Coverage Ratio 2.75 **10 Break Even Point** 0.31
11 Power Requiremnet 25 KW
12 Employment 8 Persons
13 Major Raw Materials Electrical,components, Plastic,Copper
14 Details of Cost of Project & Means of Finance

Cost of Project **Amount in Lacs**

Particulars	Amount
Building & Civil Work	Owned/Leased
Plant & Machinery	16.50
Other Misc Assets	1.00
Furniture	1.00
Working Capital Requirement	4.47
Total	**22.97**

Means of Finance

Particulars	Amount
Own Contribution	2.30
Term Loan	16.65
Working capital Loan	4.02
Total	**22.97**

1. INTRODUCTION

Wireless headphones contain tiny speakers, receive signals through a short-distance transmission link, and typically work on a battery to empower users to work without the problem of a cord hindering movement

and productivity. Wireless innovation replaces physical cabling. Wireless headphones have the option to use several wireless transmission technologies like FM, Bluetooth, and Wi-Fi. Wireless headphones are likewise a useful, however not fundamental, option for distant monitoring, CD/DVD players, home theatre, personal computers, portable devices, for example, digital/mp3 players and mobile phones; and disc jockeying, sound engineering, and military functions. The two kinds of wireless innovation in wireless headphones are IF (Infrared) and RF (Radio Frequency). Both types of wireless innovation execute a transmitter and receiver system. The transmitter connects to the audio source while the receiver is built-in to the wireless headphones, accepting incoming signals and handing off the signal for processing in the signal chain until it reaches the speakers to create a sound for only your ears to hear. Wireless headphones can likewise be isolated into three categories relying upon how they interface or interact with the ear. Circumoral headphones or full-size headphones have circular earpads that encompass the ear and can be designed to form a full seal against the head to decrease unwanted external noise. The most important components that will find inside headphones are Case- the anterior and posterior portion of the headphone unit which neatly covers all components, which in turn facilitates safe and efficient application into or over ears. They typically feature cushions, which reduce the risk of swollen or sore ears. Rubber seal- This component holds the case together and ensures that the headphone itself does not fall apart. Wires-These components transmit the audio signals. In the case of wireless

headphones, Bluetooth technology is used to carry the signals. Magnet- This can be found at the back portion of the speaker. A large percentage of a headphone's weight is attributed to the installed magnet inside a headphone. Copper coil- This acts as an electromagnet whenever current passes through it. Diaphragm- It is a cone shaped plastic part that produces the sound when it vibrates.

2. MARKET POTENTIAL

The global headphones market size is expected to grow at a compound annual growth rate (CAGR) of 20.3% from 2020 to 2027. Rising customer inclination for improved sound insight, developing music industry, combined with mobile technology and web penetration, is a portion of the essential variables driving the market. Innovative progressions, for example, the rise of notch-less cell phones are foreseen to fuel the development of wireless headphones over the forecast period. Moreover, a rising buyer tendency towards smart and attractive designs is required to help the deals of headphones and headphones over the time frame. Innovation advancements are principally determined by buyer interest and demand for style and high-fidelity. Presentation of features like active noise cancellation (ANC) and near field communication (NFC) is required to offer a client with improved listening experience and ease in availability with their music gadgets. For example, the presence of active noise cancellation (ANC) innovation in headphones and headphones eliminates the background noise, hence improving sound quality. Near field communication (NFC) sets up the connection between the wireless headphones and music gadgets simply by tapping them to one another. Such progressed features are foreseen to fuel the market development. In terms of revenue, headphones dominated the market with a share of 53.0% in 2019. This is attributed to the comfort in hearing music, low cost, and compact size. The lightweight design and versatility of headphones settle on them a preferred choice for fitness and sports enthusiasts. Moreover, headphones give great aloof disconnection from outer sound, which converts into a vivid music listening experience for the user. The size and cost have decreased the prevalence of the on-ear and over-ear headphones as of late. Notwithstanding, technologies in these headphones with highlights, like rich bass and active noise cancellation (ANC) make them a preferred choice among the audiophile community. The large sized ear cups permit the producers to outfit the headphones with dynamic and electrostatic sound drivers, bringing about upgraded and clear solid quality. Industries like

Bose Corporation, Sony Corporation, Sennheiser GmbH, and Skullcandy. co are occupied with improving the plan and styling of their headphones by offering leather ear cup cushions, foldable headphones, and better form quality, which is relied upon to keep the headphones trending among the users.

3. INDUSTRIAL SCENARIO

A headphone manufacturer starts with basic questions: Headphones to be wireless or wired, to be inexpensive, or long-lasting? These questions will determine what components the headphones will have, and what materials will be used to make them. Most headphones are made of pre-molded plastic, carbon elements, polymers, and metal components, with additions like cushion or rubber for protection or comfort. All these materials need to be available to the manufacturer, and some they might purchase already created by another supplier, such as the electrical components, cushions, or the wire for headphone connection. These pre-made parts will be included in the master design of the headphones. Many of these components alone will affect how the sound is produced. If the maker decides to add noise cancelling or dampening effects these will likewise influence the materials and designs utilized. To date, headphones come in a wide variety of designs, materials, and technologies. These same set of elements determine the pricing and application of headphones. All of these headphone types carry their own set of benefits and drawbacks. The use of headphones for fitness activities under different environmental conditions, like rain and dust, has pushed the makers to add durability to their items. A few industries have made their product with a specific IPX rating, which is a wellbeing rating to offer insurance against dust and water. For instance, IPX1 evaluated gadget is protected against water drops and can be trickled with water for 10 minutes. The degree of assurance goes from the number 0 to 9 and increments with the most elevated level being IPX9, which offers security against the splash of water from a high-pressure spout. Products with an IP57 rating are water resistant and dust tight to high-pressure sprays. The presence of such useful features and some significant development in product technology is expected to keep the product in demand over the forecast period. Most manufacturers are providing audio cables with wireless headphones for user convenience. Some of the prominent players in the headphones market are Apple Inc, Harman International Industries, Incorporated, Bose Corporation, Sennheiser Electronics GmbH & Co. KG, Sony Corporation, etc.

4. PRODUCT DESCRIPTION

4.1. PRODUCT USES

- Headphones may be used with stationary CD and DVD players, home theatre, personal computers, or portable devices (e.g., digital audio player/MP3 player, mobile phone).
- These Cordless headphones are not connected to their source by a cable. Instead, they receive radio or infrared signals encoded using radio or infrared transmission links, such as FM, Bluetooth, or Wi-Fi. These are powered receiver systems, of which the headphone is only a component.
- Headphones are used with events such as a Silent Gig or Silent disco. In the professional audio sector, headphones are used in live situations by DJs with a DJ mixer, and sound specialists for checking signal sources.
- In radio studios, a headphone is used by DJ's when talking to the microphone while the speakers are turned off to eliminate acoustic feedback while monitoring their voice.
- In studio recordings, vocalists and musicians use headphones to play or sing along to a support track or band.
- In military applications, audio signals of many varieties are monitored using headphones.

4.2. RAW MATERIAL REQUIREMENT

1. **Electrical components**- Resistors, ICs, Microphone condenser, Customized circuit board, Press switch, Sensors, Micro USB port, Micro sd card connector, Audio jack, Flash memory IC, Battery-Single-cell Li-Ion battery.

   Etc.

2. **Plastic** – ABS, PVC, PC type of plastic granules can be used to form enclosures or housing for the headphones. Mylar or BoPet polyester plastic film sheets can be used to form a diaphragm for the voice coil.


 Copper- Copper wire is used for voice coil winding.

Other materials- Solder paste, Solder flux, and wire, Rubber, Artificial leather, foam, Magnets, Epoxy, Glue, Wires, Screws, etc.

4.3. MANUFACTURING PROCESS

This process can be broken down into the following steps-

1. Raw material procurement
2. Injection molding- Plastic molding
3. Driver unit manufacturing
4. PCB assembly
5. Final assembly
6. Testing

Raw material procurement

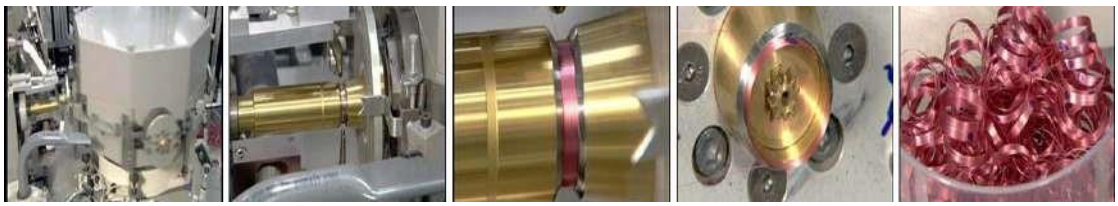
The raw material will be purchased. To ensure complete quality control, all raw materials are checked strictly as per established quality standards and requirements. Sorting of raw material will be done. In the sorting procedure, the different types of materials or parts will be sorted out like plastic, electrical components, etc. It will be separated and the material will be stored; dust free, neat, and clean environment is a must, for which an air handling unit is required, and later on, it will dispatch to the assembly line.

Injection molding- Plastic molding

Plastic molding is done by using an injection molding machine. Plastic components used in headphone construction are typically injection molded using plastic granules. In this process; Firstly, granules are fed via a hopper into a heated barrel. Where the plastic will be melted at the set temperature. The melted plastic is then injected through a nozzle into a mold cavity where it cools and hardens to the configuration of the cavity and the formed plastic parts for headphone are ejected out. The plastic shell is used to provide a covering for the electric components of the headphone such as the driver unit and PCB.

Driver unit manufacturing

A driver is in simply miniature loudspeaker. This involves three main components: a magnet, a coil, and a diaphragm. A winding machine winds the copper wire around a cylinder. The standard count for the copper coil is ten thousand winds, but as a general rule, the more coils, the better the electromagnetism. The resulting copper coil now becomes a voice coil which is then sealed by a technician with a transparent diaphragm or plastic cover. Now diaphragm takes a shape as a press applies heat and pressure to a plastic membrane. The press molds the plastic so it's thicker in the center and thinner around the outer zone. This gives a wide and flat audio frequency range. A technician punches out the molded shape. Then applied the bit of glue to the diaphragm to seal the coil and diaphragm. For the seal, these, UV lights will be used for the best results. The voice coil with the diaphragm will be then installed into a housing that is strategically positioned to produce the best sound. The procured magnet will be attached to that housing, which magnifies the movement and causes air to vibrate in and toward the ear as sound waves. The formed coil of wire will be attached to the apex of a speaker housing. Further, a tiny size of PCB will be glued to the bottom apex of the speaker housing; which will be soldered while final assembly takes place. A miniature loudspeaker goes through a series of frequency range and distortion tests before it undergoes final assembly.



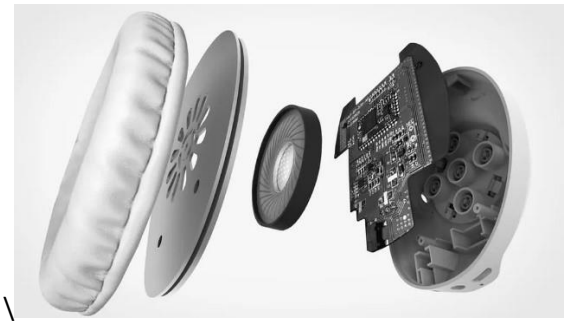
PCB assembly

Assembly for headphone controller PCB will be done in the PCB assembly unit. The circuit board is pretty typical. It is a two-layer board with a green solder mask and white silkscreen on both sides. The PCB is comprised entirely of surface-mount components and few of them appear to be hand-placed. Firstly on customized bare board solder paste will be applied using a printer. Here stencil is used which a thin piece of stainless steel with cut holes. It helps to solder paste to go on the pads, where the components are going to be soldered down. To get the right amount of solder paste in all the places solder paste inspection machine is used. This machine checks whether the solid paste printed by the printing machine meets the IPC standards. It will check the thickness and amount of solder paste, and may lead to defective products. The inspection systems within solder paste printers use 2D technology while devoted SPI machines utilize 3D technology to enable a more thorough inspection including solder paste volume per pad and not simply print region. When

the printed PCB has been affirmed to have the right amount of solder paste applied it moves into the next part of the manufacturing process which is component placement. Pick and place machine is used for component placement. Each component will be picked from its packaging using either a vacuum or gripper nozzle, checked by the vision system, and placed in the programed location at high speed. Following the component placement process, it is important to verify that no mistakes have been made and that all parts have been correctly placed before reflow soldering. The most ideal method of doing this is by utilizing an AOI machine to make checks like component presence, type/value, and polarity. After pre reflow automated optical inspection reflow process will be done; reflow soldering is a process in which a board will be heated to attach electrical components to contact pads. Further Post-Reflow Automated Optical Inspection (AOI) will be done, where the surface mount assembly process is to again check that no mistakes have been made by using an AOI machine to check solder joint quality. Components and the size of the PCB can be varied as per product quality and by manufacturers. The Bluetooth QFN package IC can be used to do pretty much everything. It has features; it can work as voltage regulators, a battery charger, Bluetooth radio, audio decoder, and noise cancellation. The flash memory IC is located on the bottom of the PCB. A single-cell Li-Ion battery will be attached to one of the PCBs by double-sided tape. The battery is connected through two small-diameter wires that will be handsoldered to the circuit board.

Final Assembly

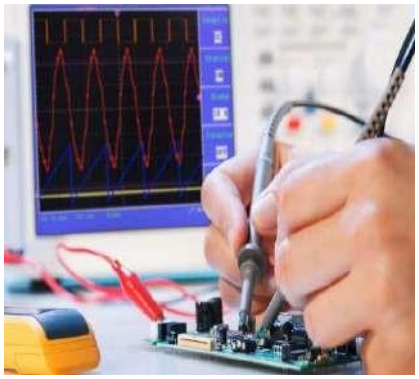
Headphones are made by a combination of hand and machine methods. The internal speaker configuration on the headphones must be wired first before being placed in the headphone casing. This is generally done in an assembly line manner with several workers being responsible for a small part of the process. One worker may wire the speaker configuration into the headset while another may be responsible for just assembling the parts of the pre-molded casing. Assembled PCB, driver units, formed plastic parts with required electrical components will be dispatched to the assembly line. PCB and battery will be placed inside of headphone cover for speaker unit connection; two wires will be taken and it will be soldered with driver units. The worker joins the ends of the wire in a plastic clip. This wire serves a juke function. Installation of wires in the strain relief of the adjustable band will be done. The wire holds headphone over the ears and delivers audio signals from the left side of the headphone to the right**.** Hinges will be screwed. Speaker shell or cover will be fitted on the driver unit. Cushions and foams will be attached to the headphone cup and headband. Assembled Headphone will be dispatched for testing the appearance and sound quality.



\

Testing

- Sound quality testing
- Frequency testing- It is also important to be aware of frequency range limitations when designing tests for Bluetooth devices.
- Quality control
- PCB testing- For PCB testing its ICT and functionality test will be done. In circuit testing (ICT) - It will check its shorts or bad solder joints, critical component values, overall board functionality.
  Functional Test- It's the most comprehensive test to determine the board's final pass/fail status.
- Headphones with digital connectivity add complexity to audio testing. The initial challenge of testing digital headphones is managing connectivity. The test system must be able to communicate directly with the device.
- Bluetooth headphones, however, require an additional interface for the computer to connect to the device under test. This may be a hardware Bluetooth communication box or a simple Bluetooth dongle, either built into the computer or externally connected by USB. Bluetooth interfaces cause transmission delays in the audio chain. The test system must be able to account for these delays to take meaningful measurements. Some test systems can use an auto-delay algorithm that looks at the system's impulse response to calculate the delay and remove it from the measurement, if necessary.



4.4. YIELD OF PRODUCT/PRODUCTION RATIO

The headphone manufacturing process might take close to 40-50 minutes. The production capacity will be approx. 175 pieces per day with 5-8 workers and based on a single shift and 90% of efficiency.

5. INDIAN STANDARDS FOR THE PRODUCT

- ISI standards- Quality standard ISO 9001 ISO 9454 - Standard for soldering fluxes.
- ISO 10564 – Methods for the sampling of soft solders for analysis.
- IS 616 and 15596 (Part-7) All the models of Headphones must register under the Indian Standard IS 616 and 15596 (Part-7) as per the notification of MeiTy (Ministry of Electronics and Information Technology, Govt. of India).

6. PROJECT COMPONENTS

6.1 Land /Civil Work

The land require for this manufacturing unit will be approx. around 1500-3000 square feet. We have not considered the cost of Land purchase & Building Civil work in the project. It is assumed that land & building will be on rent & approx. rental of the same will be Rs.30000.00 per month.

6.2 Plant & Machinery

This is a semi-automatic type of plant and production capacity is set to be 175 pieces of finished product per day.

Injection molding machine

The plastic molding will be done by using a horizontal injection molding machine. The plastic components used in headphone construction are typically injection molded using plastic granules. The plastic parts are used to provide a covering for the microphone circuit board, driver unit, etc.

UV light emitter machine

UV glue curing box can be used to cure the glue which is applied to join the diaphragm and voice coil.

Voice coil winding machine

This machine is used for voice coil winding. Copper winding wire is used for this purpose.

Polyester film press machine

An automatic Thermo Forming Machine can be used to form a diaphragm for the voice coil. Here thermoplastic sheets-like polyester plastic sheets will be heated to a pliable temperature, formed to a specific shape using a mold, and trimmed to create a finished product. The diaphragm takes a shape as a press applies heat and pressure to a plastic membrane. The press molds the plastic so it's thicker in the center and thinner around the outer zone. This gives a wide and flat audio frequency range. A technician punches out the final diaphragm molded shape.

Automatic glue/epoxy dispenser

This programmable machine will automatically apply glue or epoxy to the parts.

Wire cutting and stripping machine

This machine is used to cut and strip out the wire.

Solder Paste printer

The solder paste printing process is the common way of applying solder paste onto a PCB, which is performed by printing solder paste through apertures in a stencil.

Pick and place machine

Pick and place machines used for placing surface mount components as accurately and quickly as possible.

Reflow machine

Reflow soldering is a process in which a solder paste will be heated and electrical components will be attached to contact pads.

SPI machine

Solder Paste Inspection is a key technique used in the manufacture and test of PCBs. SPI machine enables fast and accurate inspection of the solder paste on PCBs to ensure that the quality of paste on PCB is printed correctly and without manufacturing faults.

AOI machine- Automated optical inspection

The use of an AOI machine is to make checks such as component presence, type/value, and polarity while PCB assembly.

Laser printing machine

This machine is used to print the company logo on a formed product.

Testing Equipment's

i. **Oscilloscope-** This equipment is used to test and display voltage signals as waveforms, visual representations of the variation of voltage over time.

ii. **DC power supply -** DC power supplies are power supplies that produce an output DC voltage.

iii. **Multimeter-** It is an electronic measuring instrument that combines several measurement functions in one unit.

iv. **Headphone testing machine-** The audio quality of devices with a Bluetooth interface will be tested using this apparatus. This Audio Bluetooth Box will be connected to the Audio Analyser to allow simple and convenient testing of the Bluetooth interface of audio devices. The received and sent audio signals

are converted to analogE signals. The pairing process can be done manually or automatically. When the pairing process is completed; a trigger signal is sent to the Audio Analyser to start the measurement.

 Tools- Cutter, tweezers, Strippers, Screwdriver, Rubber hammer, etc.

S.N.	Description	Amount	Qty	Amount
1	Injection Molding Machine	400000	1	400000
2	Solder Paste Printer	100000	1	100000
3	Pick and Place Machine	150000	1	150000
4	Reflow Machine	150000	1	150000
5	Solder Paste Inspection (SPI) Machine	80000	1	80000
6	Automated Optical Inspection (AOI) Machine	230000	1	230000
7	Wire cutting and stripping machine	80000	1	80000
8	UV Light Emitter Machine	40000	1	40000
9	Voice Coil Winding Machine	70000	1	70000

10	Polyester film press machine	300000	1	300000
11	Automatic glue/epoxy dispenser	25000	1	25000
12	Laser Printing Machine	25000	1	25000
Sub Total				**1650000**

6.3 Misc. Assets

The miscellaneous assets include storage tanks, Indicators/ Recorders for temperature and pressure, pumps and gears at various stages of manufacturing, Laboratory equipments such as measuring devices, weighing machines, Material handling equipment like hoist, pallet trucks, and fork lifts to handle the raw materials, Safety equipments, instrument chart and accessories, cleaning materials of the plants, furniture, and other electrical equipments.

6.4 Power Requirement

The Power required by a Headphone manufacturing plant whose production capacity is around 175 pcs per day is 25 KW.

6.5 Manpower Requirement

Manpower required for this unit will be around 5-8 people.

7. LICENSE & APPROVALS

- MSME Udyam registration
- BIS certification
- ISO certification Factory license
- GST registration
- NOC for fire safety management plan
- NOC from Pollution Control Board

8. SWOT ANALYSIS

Strengths –Profit margin will be high. Product Cost will be low and quality will be good hence conforms to more customers' requirements.

Weakness- Lack of division of labor. Maintenance of machinery will be required.

Opportunities- Export enhancement will be an opportunity. More sales opportunities. Advance technologies to design headphones can be adapted.

Threats- Prices of raw materials, technology improvement, customer shopping trends, Competitors can be threats for this unit.

PROJECTED PROFITABILITY STATEMENT **(in Lacs)**

PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
Capacity Utilisation %	**40%**	**45%**	**50%**	**55%**	**60%**
SALES					
HEADPHONES	87.29	106.39	124.27	143.65	164.60
Total	**87.29**	**106.39**	**124.27**	**143.65**	**164.60**
COST OF SALES					99.54
Raw material cost					7 .67
Electricity Expenses					1 .44
Depreciation					9 .60
Wages & labour					4 .94
Repair & maintenance					5
Consumables					.43
Cost of Production	54.60	64.50	75.34	86.91	128.61
Add: Opening Stock	4 .80	5.28	6 .34	6.97	
Less: Closing Stock	2 .73	2.32	1 .98	1.68	3.76
Cost of Sales	7 .68	8.06	8 .71	9.14	
GROSS PROFIT	0 .87	1.60	1 .86	3.59	
GROSS PROFIT RATIO	2 .18	3.40	4 .10	4.45	4.29
Salary to Staff	72.86	85.16	98.33	112.76	128.09
Interest on Term Loan	-	2 .43	2.84	3 .28	**36.52**
Interest on working Capital	2.43	2 .84	3.28	3 .76	**22.18%**
Rent	70.43	84.75	97.89	112.28	8 .40
Selling & Administration Expenses	**16.86**	**21.64**	**26.39**	**31.37**	0 .22
	19.31%	**20.34%**	**21.23%**	**21.84%**	0 .44
	4 .80	5.52	6 .35	7.30	
	1 .64	1.44	1 .03	0.63	
	0 .44	0.44	0 .44	0.44	6.57
	3.60	4 .32	4.97	5 .71	4
	2 .18	3.40	3 .48	3.59	.12
TOTAL	**12.66**	**15.13**	**16.27**	**17.67**	**19.74**

NET PROFIT	4.20	6 .51	10.11	13.70	16.77
Taxation	0 .08	0.43	1 .15	2.23	3 .16
PROFIT (After Tax)	4 .11	6.08	8 .97	11.46	13.62
NET PROFIT RATIO	**4.71%**	**5.72%**	**7.21%**	**7.98%**	**8.27%**

PROJECTED BALANCE SHEET **(in Lacs)**

PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
Liabilities					
Capital					
Opening Balance					13.02
Add:- Own Capital		4.41	6.99	9.76	
Add:- Retained Profit	2.30				
Less:- Drawings	4.11	6.08	8.97	11.46	13.62
	2.00	3.50	6.20	8.20	9.70
Closing Balance	4.41	6.99	9.76	13.02	
Term Loan					16.94
Working Capital Limit	14.80	11.10	7.40	3.70	-
Sundry Creditors	4.02	4.02	4.02	4.02	
Provisions & Other Liabilities	1.82	2.15	2.51	2.90	4.02
	0.40	0.50	0.75	1.13	
					3.32
					1.69
TOTAL :	**25.45**	**24.76**	**24.44**	**24.76**	**25.96**

Assets					
Fixed Assets (Gross)					18.50
Gross Depreciation					
Net Fixed Assets					10.14
Current Assets					**8.36**
Sundry Debtors	18.50	18.50	18.50	18.50	
Stock in Hand	2.73	5.05	7.02	8.71	
Cash and Bank	**15.78**	**13.45**	**11.48**	**9.79**	3.84
Loans and advances/other current assets					7.61
	2.04	2.48	2.90	3.35	
	4.25	4.99	5.79	6.66	3.16
	2.39	2.54	2.77	2.96	
	1.00	1.30	1.50	2.00	3.00
TOTAL :	**25.45**	**24.76**	**24.44**	**24.76**	
					25.96

PROJECTED CASH FLOW STATEMENT **(in Lacs)**

PARTICULARS	**1st year**	**2nd year**	**3rd year**	**4th year**	**5th year**
SOURCES OF FUND					
Own Margin	2.30				16.77
Net Profit	4 .20				1 .44
Depriciation & Exp. W/off	2 .73	6.51	10.11	13.70	-
Increase in Cash Credit	4 .02	2.32	1 .98	1.68	-
Increase In Term Loan	16.65	-	-	-	0
Increase in Creditors	1 .82	-	-	-	.42
Increase in Provisions & Other liabilities	0 .40	0.33	0 .36	0.39	0
		0.10	0 .25	0.38	.56
TOTAL :	**32.11**	**9.26**	**12.70**	**16.15**	**19.19**

APPLICATION OF FUND					
Increase in Fixed Assets					0.95
Increase in Stock	18.50				
Increase in Debtors	4 .25	0.74	0.80	0 .87	0 .49
Increase in loans and advances	2 .04	0.45	0 .42	0.45	1.00
Repayment of Term Loan	1.00	0.30	0.20	0.50	3
Drawings	1 .85	3.70	3 .70	3.70	.70
Taxation	2.00	3.50	6.20	8.20	9.70
	0 .08	0.43	1 .15	2.23	3 .16
TOTAL :	**29.72**	**9.11**	**12.47**	**15.95**	**19.00**
					2 .96
Opening Cash & Bank Balance	-	2.39	2 .54	2.77	0.20
Add : Surplus	2 .39	0.15	0.24	0.19	
Closing Cash & Bank Balance	**2.39**	**2 .54**	**2.77**	**2 .96**	**3.16**

CALCULATION OF D.S.C.R

PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
CASH ACCRUALS	6.84	8.40	10.94	13.15	15.05
Interest on Term Loan	1 .64	1.44	1 .03	0.63	0 .22
Total	8.47	9 .85	11.98	1 3.78	15.27
REPAYMENT					
Instalment of Term Loan	1 .85	3.70	3 .70	3.70	3 .70
Interest on Term Loan	1 .64	1.44	1 .03	0.63	0 .22
Total	3.49	5 .14	4.73	4 .33	3.92

DEBT SERVICE COVERAGE RATIO	**2.43**	**1.91**	**2.53**	**3.18**	**3.90**
AVERAGE D.S.C.R.					**2.75**

REPAYMENT SCHEDULE OF TERM LOAN							
					Interest		11.00%
Year	**Particulars**	**Amount**	**Addition**	**Total**	**Interest**	**Repayment**	**Closing Balance**
Ist	Opening Balance	-					
	1st month		16.65	16.65	-	-	16.65
	2nd month	16.65	-	16.65	0.15	-	16.65
	3rd month	16.65	-	16.65	0.15	-	16.65
	4th month	16.65	-	16.65	0.15	-	16.65
	5th month	16.65	-	16.65	0.15	-	16.65
	6th month	16.65	-	16.65	0.15	-	16.65
	7th month	16.65	-	16.65	0.15	0.31	16.34
	8th month	16.34	-	16.34	0.15	0.31	16.03
	9th month	16.03	-	16.03	0.15	0.31	15.73
	10th month	15.73	-	15.73	0.14	0.31	15.42
	11th month	15.42	-	15.42	0.14	0.31	15.11
	12th month	15.11	-	15.11	0.14	0.31	14.80
					1.64	1.85	
2nd	Opening Balance						
	1st month	14.80	-	14.80	0.14	0.31	14.49
	2nd month	14.49	-	14.49	0.13	0.31	14.18
	3rd month	14.18	-	14.18	0.13	0.31	13.88
	4th month	13.88	-	13.88	0.13	0.31	13.57
	5th month	13.57	-	13.57	0.12	0.31	13.26
	6th month	13.26	-	13.26	0.12	0.31	12.95
	7th month	12.95	-	12.95	0.12	0.31	12.64
	8th month	12.64	-	12.64	0.12	0.31	12.33
	9th month	12.33	-	12.33	0.11	0.31	12.03

	10th month	12.03	-	12.03	0.11	0.31	11.72
	11th month	11.72	-	11.72	0.11	0.31	11.41
	12th month	11.41	-	11.41	0.10	0.31	11.10
					1.44	**3 .70**	
3rd	Opening Balance						
	1st month	11.10	-	11.10	0.10	0.31	10.79
	2nd month	10.79	-	10.79	0.10	0.31	10.48
	3rd month	10.48	-	10.48	0.10	0.31	10.18
	4th month	10.18	-	10.18	0.09	0.31	9.87
	5th month	9.87	-	9.87	0.09	0.31	9.56
	6th month	9.56	-	9.56	0.09	0.31	9.25
	7th month	9.25	-	9.25	0.08	0.31	8.94
	8th month	8.94	-	8.94	0.08	0.31	8.63
	9th month	8.63	-	8.63	0.08	0.31	8.33
	10th month	8.33	-	8.33	0.08	0.31	8.02
	11th month	8.02	-	8.02	0.07	0.31	7.71
	12th month	7.71	-	7.71	0.07	0.31	7.40
					1.03	**3 .70**	
4th	Opening Balance						
	1st month	7.40	-	7.40	0.07	0.31	7.09
	2nd month	7.09	-	7.09	0.07	0.31	6.78
	3rd month	6.78	-	6.78	0.06	0.31	6.47
	4th month	6.47	-	6.47	0.06	0.31	6.17
	5th month	6.17	-	6.17	0.06	0.31	5.86
	6th month	5.86	-	5.86	0.05	0.31	5.55

	7th month	5.55	-	5.55	0.05	0.31	5.24
	8th month	5.24	-	5.24	0.05	0.31	4.93
	9th month	4.93	-	4.93	0.05	0.31	4.62
	10th month	4.62	-	4.62	0.04	0.31	4.32
	11th month	4.32	-	4.32	0.04	0.31	4.01
	12th month	4.01	-	4.01	0.04	0.31	3.70
					0.63	**3 .70**	
5th	Opening Balance						
	1st month	3.70	-	3.70	0.03	0.31	3.39
	2nd month	3.39	-	3.39	0.03	0.31	3.08
	3rd month	3.08	-	3.08	0.03	0.31	2.77
	4th month	2.77	-	2.77	0.03	0.31	2.47
	5th month	2.47	-	2.47	0.02	0.31	2.16
	6th month	2.16	-	2.16	0.02	0.31	1.85
	7th month	1.85	-	1.85	0.02	0.31	1.54
	8th month	1.54	-	1.54	0.01	0.31	1.23
	9th month	1.23	-	1.23	0.01	0.31	0.92
	10th month	0.92	-	0.92	0.01	0.31	0.62
	11th month	0.62	-	0.62	0.01	0.31	0.31
	12th month	0.31	-	0.31	0.00	0.31	-
					0.22	**3 .70**	

DOOR TO DOOR	60	MONTHS
MORATORIUM PERIOD	6	MONTHS
REPAYMENT PERIOD	54	MONTHS

DISCLAIMER

The views expressed in this Project Report are advisory in nature. UP MSME assume no financial liability to anyone using the content for any purpose. All the materials and content contained in Project report is for educational purpose and reflect the views of the industry which are drawn from various research material sources from internet, experts, suppliers and various other sources. The actual cost of the project or industry will have to be taken on case to case basis considering specific requirement of the project, capacity and type of plant and other specific factors/cost directly related to the implementation of project. It is intended for general guidance only and must not be considered a substitute for a competent legal advice provided by a licensed industry professional. UP MSME hereby disclaims any and all liability to any party for any direct, indirect, implied, punitive, special, incidental or other consequential damages arising directly or indirectly from any use of the Project Report Content, which is provided as is, and without warranties.