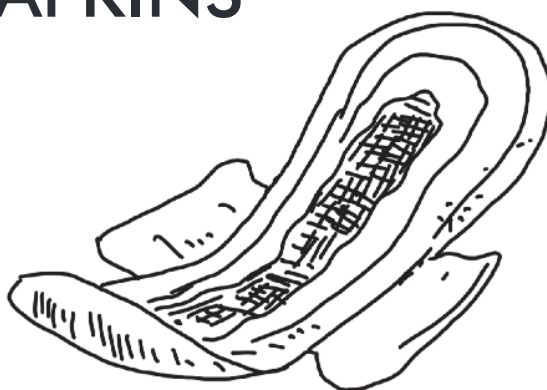


SANITARY NAPKINS



1.0 INTRODUCTION

Throughout the centuries, a plethora of cultural and social taboos has been associated with menstruating girls and women, as well as menstrual health. In many parts of the world, women are still not allowed to leave the confines of their homes while menstruating. Deemed “impure” and “unclean,” they are not allowed to venture freely outside their homes. Thus, girls and women are deprived of opportunities in schools, workplaces and social settings.

In addition, this lack of control over their lives puts women at loss when it comes to gaining information on cost-effective, affordable menstrual health products. Such women often resort to horrific means such as repeatedly using the same unsterilized cloth during menstruation instead of sanitary napkins. Due to these unhygienic preventative methods, women are prey to a host of illnesses and fatalities. For example, out of every 10,000 women in India, 2000 women die during childbirth due to unhygienic menstrual practices.

Although, there is a well-developed sanitary napkin industry in India, with major players such as Procter & Gamble and Johnsons & Johnsons, these sanitary napkins are often unaffordable to the millions of Indian women living in low-income and under-privileged communities. This is primarily due to the cost of the sanitary napkins resulting from the use of expensive machinery and huge profit margins by these brand name companies. According to a study report undertaken by AC Nielsen, only 12% of India's 355 million menstruating women use sanitary napkins. The biggest barrier to using a sanitary napkin is affordability. Around 70% of women in India say their family cannot afford to buy them.

This project profile is for setting up of sanitary napkin manufacturing unit with a cost-effective machine that can

produce and market biodegradable sanitary napkins locally. This semi-automatic and portable machine can be accommodated in a small space of about 12 sqm. It works on single-phase electricity and has a production capacity of 2 napkins per minute. The machine incorporates pinewood fiber, a raw material, which goes through a 3 step process: (a) defibration, (b) core formation and then (c) sealing with soft touch sensitive heat control. This last step ensures the final shape of the napkins.

The installed capacity of the unit is 11.52 lacs napkins per annum by using 4 machinery sets with 300 working days and 8 working hours.

2.0 MARKET POTENTIAL

According to market research agency Nielsen, India's sanitary napkin market is largely untapped and is growing at a rate of 24% annually and usage is close to 20% of potential customers.

Most large brands such as 'Whisper' from P&G and 'Stayfree' from J&J have a strong presence in urban areas, leaving the field open for the entry of new players with low-cost solutions targeting semi-urban and rural areas.

3.0 PROCESS DETAILS

De-fibration of wood pulp is done on the defibration machine. The de fibred wood pulp is measured on a weighing scale and the wood pulp is filled on a core block and pressed by core forming machine. After this, pressed cores are wrapped by non – woven fabric and sealed using napkin finishing machine (sealing machine). Then position sticker is pasted on the napkin and then packed.

4.0 COST OF THE PROJECT

The estimated project cost is given below.

Particulars	Amount (Rs lacs)
Land and Site Development	-
Building & Civil Works	4.42
Machinery & Equipment	3.35
Misc. Fixed Assets	0.30
Preliminary & Pre-operative Expenses	0.33
Contingencies & Escalation @ 3%	0.24
Working Capital	1.55
TOTAL	10.19

4.1 Land & Site Development: No cost has been considered for land & site development. It is assumed that the unit will be set up in own land.

4.2 Building & Civil Works: Details of building & civil works are given below.

Particulars	Area (Sqm)	Rate (Rs)	Amount (Rs)
Work Shed (Brick wall, CGI sheet roof, concrete floor)	40	6000	267600
Store room (Brick wall, CGI sheet roof, concrete floor)	25	6000	133800
Sub total			401400
Add: Electrification, etc @ 10%			40140
TOTAL			441540
Say (Rs. in lacs)			4.42

4.6 Machinery & Equipment: Details of machinery & equipment are given below.

Particulars	Qty	Rate (Rs)	Amount (Rs)
Defibering M/c	4	20200	80800
Soft touch sealing Machine	4	28000	112000
Core forming M/c	4	5500	22000
Core dies	20	625	12500
Ultra Violet Treatment Unit	4	10400	41600
Miscellaneous items	LS	LS	10000
Sub total			278900
Add: Transportation, installation, training, taxes, etc @ 20%			55780
TOTAL			334680
Say (Rs. in lacs)			3.35

4.7 Misc. Fixed Assets: Details of miscellaneous fixed assets are given below.

Particulars	Qty	Rate (Rs)	Amount (Rs)
Furniture & fixtures	LS	LS	20000
Miscellaneous items	LS	LS	10000
TOTAL			30000
Say (Rs. in lacs)			0.30

4.8 Preliminary & Pre-operative Expenses: Details of preliminary & pre-operative expenses are given below.

Particulars	Amount (Rs lacs)
Travelling expenses	0.20
Professional & other fees	0.10
Interest during implementation	0.23
Miscellaneous expenses	0.10
TOTAL	0.33

4.9 Contingencies & Escalation: Contingencies & escalation has been assumed at 3% of the building & civil works, machinery & equipment and miscellaneous fixed assets.

4.10 Working Capital: Details of working capital are given below.

	Period (Days)	Amount (Rs lacs)		
		Yr 1	Yr 2	Yr 3
Raw materials & consumables	30	0.72	0.86	1.00
Power	30	0.01	0.01	0.01
Salary	30	0.24	0.24	0.24
Finished Goods	15	0.39	0.44	0.50
Receivables	7	0.21	0.25	0.29
Total		1.55	1.80	2.04
Working capital margin in Yr 1 (100%)	1.55			

5.0 MEANS OF FINANCE

The means of finance for the project is estimated as below.

Particulars	Percent	Amount (Rs lacs)
<u>EQUITY</u>		
A. Equity from Promoters	40%	4.07
B. Subsidy from Central/State Govt.	-	
<u>DEBT</u>		
Term Loan from Banks/FIs	60%	6.11
TOTAL	100%	10.19

6.0 PROFITABILITY STATEMENT

(Rs. in lacs)

Particulars	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5
<u>A. INCOME</u>					
Production capacity (No. of packets/annum)	144000	144000	144000	144000	144000
Capacity utilisation	50%	60%	70%	70%	70%
Production/annum at capacity utilisation	72000	86400	100800	100800	100800
Price (Rs/packet)	15	15	15	15	15
Total income/annum	10.80	12.96	15.12	15.12	15.12
<u>B. OPERATING EXPENSES</u>					
Raw Materials & Consumables	6.33	7.60	8.86	8.86	8.86
Power	0.07	0.08	0.09	0.09	0.09
Salary	2.88	2.89	2.91	2.92	2.94
Repair & Maintenance	0.08	0.09	0.10	0.11	0.12
Miscellaneous Expenses	0.11	0.13	0.15	0.15	0.15
Total Operating Expenses	9.46	10.79	12.11	12.13	12.16
Less: working expenses capitalised	1.55	0.00	0.00	0.00	0.00
Operating profit	2.89	2.17	3.01	2.99	2.96
<u>C. FINANCIAL EXPENSES</u>					
Depreciation	0.40	0.40	0.40	0.40	0.40
Interest on Term Loan	0.49	0.41	0.29	0.18	0.06
Net Profit	2.00	1.36	2.31	2.40	2.49
Net cash accruals	2.40	1.77	2.72	2.81	2.90
Principal Repayment	0.36	1.44	1.44	1.44	1.44

6.1 Production Capacity: Total production of sanitary napkin packets at installed capacity is estimated as below.

Rated machine capacity (No. of napkins/minute)	2
Working hrs/day	8
No. of machines	4
Days/annum	300
Total production	1152000
No. of napkins per packet	8
Total packets at installed capacity	144000

6.2 Raw Material & Consumables: Expenses on raw material and consumables at installed capacity is estimated as below.

Particulars	Unit	Rate/napkin	Quantity required	Price (Rs/unit)	Amount (Rs)
Wood Pulp	kg	0.010	11600	55.00	638000
Top Layer	metre	0.153	176000	2.00	352000
Back Layer	grams	0.243	280000	0.20	56000
Release Paper	sheets	0.010	12000	2.00	24000
Gum	kg	0.001	800	110.00	88000
Packing Covers	nos	0.125	144000	0.75	108000
Expenses on raw materials & consumables at installed capacity (Rs)					1266000

6.3 Power: Expenses on power at installed capacity is estimated as below.

Particulars	Quantity	Power (Kw)	Total (Kw)
General Lighting	7	0.10	0.67
Machinery	16	0.50	8.00
Total power requirement/day (Kw)			8.67
No. of days/annum			300
Rate per unit (Rs)			5.00
Expenses on power per annum at installed capacity (Rs)			13004

6.4 Salary: Expenses on salary in the 1st year is estimated as given below. It is assumed that salary expenses will increase @ 0.5% every subsequent year.

Particulars of Employees	Numbers	Salary/Month (Rs)	Cost/annum (Rs)
Manager (Self)	Self	-	-
Machine operators/ helpers	12	2000	288000
Expenses on salary in the 1st year (Rs)			288000

6.5 Repair & Maintenance: Expenses on repair & maintenance in the 1st year is estimated as given below. It is assumed that expenses on repair & maintenance will increase @ 10% every subsequent year.

Particulars	Cost (Rs)	Rate	Amount (Rs lacs)
Building & Civil Works	4.42	1%	0.04
Machinery & Equipment	3.35	1%	0.03
Misc. Fixed Assets	0.30	1%	0.00
Expenses on repair & maintenance in the 1st year (Rs)			0.08

6.6 Miscellaneous Expenses: Miscellaneous expenses have been assumed at 1% of sales.

6.7 Depreciation: Depreciation has been calculated by straight line method. The details of calculation are given below.

Description	Cost (Rs)	Rate	Amount/annum (Rs lacs)
Building & Civil Works	4.42	3.34%	0.15
Machinery & Equipment	3.35	7.07%	0.24
Misc. Fixed Assets	0.30	6.23%	0.02
TOTAL			0.40

6.8 Interest on term loan & principal repayment: Interest rate has been assumed at 8%. Duration of Loan repayment has been considered for a period of 5 years including moratorium period of 9 months with equal monthly instalments. The details of calculation are given below.

(Rs in lacs)

Month	Year	1	2	3	4	5
Month 1	Opening balance	6.11	5.75	4.31	2.88	1.44
	Repayment	0.00	0.12	0.12	0.12	0.12
	Interest (8%)	0.04	0.04	0.03	0.02	0.01
	Closing balance	6.11	5.63	4.19	2.76	1.32
Month 2	Opening balance	6.11	5.63	4.19	2.76	1.32
	Repayment	0.00	0.12	0.12	0.12	0.12
	Interest	0.04	0.04	0.03	0.02	0.01
	Closing balance	6.11	5.51	4.07	2.64	1.20
Month 3	Opening balance	6.11	5.51	4.07	2.64	1.20
	Repayment	0.00	0.12	0.12	0.12	0.12
	Interest	0.04	0.04	0.03	0.02	0.01
	Closing balance	6.11	5.39	3.96	2.52	1.08
Month 4	Opening balance	6.11	5.39	3.96	2.52	1.08
	Repayment	0.00	0.12	0.12	0.12	0.12
	Interest	0.04	0.04	0.03	0.02	0.01
	Closing balance	6.11	5.27	3.84	2.40	0.96
Month 5	Opening balance	6.11	5.27	3.84	2.40	0.96
	Repayment	0.00	0.12	0.12	0.12	0.12
	Interest	0.04	0.04	0.03	0.02	0.01
	Closing balance	6.11	5.15	3.72	2.28	0.84
Month 6	Opening balance	6.11	5.15	3.72	2.28	0.84
	Repayment	0.00	0.12	0.12	0.12	0.12
	Interest	0.04	0.03	0.02	0.02	0.01
	Closing balance	6.11	5.03	3.60	2.16	0.72
Month 7	Opening balance	6.11	5.03	3.60	2.16	0.72
	Repayment	0.00	0.12	0.12	0.12	0.12
	Interest	0.04	0.03	0.02	0.01	0.00
	Closing balance	6.11	4.91	3.48	2.04	0.60
Month 8	Opening balance	6.11	4.91	3.48	2.04	0.60
	Repayment	0.00	0.12	0.12	0.12	0.12
	Interest	0.04	0.03	0.02	0.01	0.00
	Closing balance	6.11	4.79	3.36	1.92	0.48
Month 9	Opening balance	6.11	4.79	3.36	1.92	0.48
	Repayment	0.00	0.12	0.12	0.12	0.12
	Interest	0.04	0.03	0.02	0.01	0.00
	Closing balance	6.11	4.67	3.24	1.80	0.36
Month 10	Opening balance	6.11	4.67	3.24	1.80	0.36

	Repayment	0.12	0.12	0.12	0.12	0.12
	Interest	0.04	0.03	0.02	0.01	0.00
	Closing balance	5.99	4.55	3.12	1.68	0.24
Month 11	Opening balance	5.99	4.55	3.12	1.68	0.24
	Repayment	0.12	0.12	0.12	0.12	0.12
	Interest	0.04	0.03	0.02	0.01	0.00
	Closing balance	5.87	4.43	3.00	1.56	0.12
Month 12	Opening balance	5.87	4.43	3.00	1.56	0.12
	Repayment	0.12	0.12	0.12	0.12	0.12
	Interest	0.04	0.03	0.02	0.01	0.00
	Closing balance	5.75	4.31	2.88	1.44	0.00
Principal Repayment		0.36	1.44	1.44	1.44	1.44
Interest		0.49	0.41	0.29	0.18	0.06

7.0 DEBT SERVICE COVERAGE RATIO (DSCR)

(Rs. in lacs)

Year	1	2	3	4	5	TOTAL
Profit After Tax (Net Profit)	2.00	1.36	2.31	2.40	2.49	
Depreciation	0.40	0.40	0.40	0.40	0.40	
Interest	0.49	0.41	0.29	0.18	0.06	
Total	2.89	2.17	3.01	2.99	2.96	14.02
Interest	0.49	0.41	0.29	0.18	0.06	
Loan repayment	0.36	1.44	1.44	1.44	1.44	
Total	0.85	1.85	1.73	1.62	1.50	7.54
DSCR	3.42	1.18	1.74	1.85	1.97	

Average DSCR = 1.86

8.0 BREAK EVEN POINT (BEP)

(Rs. in lacs)

Year	1	2	3
A. Net sales	10.80	12.96	15.12
B. Variable cost			
Raw materials & consumables	6.33	7.60	8.86
Power	0.07	0.08	0.09
Miscellaneous expenses	0.11	0.13	0.15
Total variable cost	6.50	7.80	9.10
C. Contribution (A-B)	4.30	5.16	6.02
D. Fixed & Semi-fixed Costs			
Salary	2.88	2.89	2.91
Repair & maintenance	0.08	0.09	0.10
Interest on Term Loan	0.49	0.41	0.29
Depreciation	0.40	0.40	0.40
Total fixed cost	3.85	3.79	3.70
E. BREAK EVEN POINT	89.60%	73.57%	61.54%
F. BEP at operating capacity	44.80%	44.14%	43.08%
G. Cash BEP	40.11%	39.45%	38.39%

9.0 INTERNAL RATE OF RETURN (IRR)

(Rs. in lacs)

Year	0	1	2	3	4	5
CASH OUTFLOW						
Capital Expenditure	8.31	0.00	0.00	0.00	0.00	0.00
Working Capital	0.00	1.55	0.24	0.24	0.00	0.00
Total (A)	8.31	1.55	0.24	0.00	0.00	0.00
CASH INFLOW						
Profit After Tax		2.00	1.36	2.31	2.40	2.49
Add: Depreciation		0.40	0.40	0.40	0.40	0.40
Add: Interest		0.49	0.41	0.29	0.18	0.06
Add: Salvage Value (10%)						0.83
Total (B)	0.00	2.89	2.17	3.01	2.99	3.79
NET FLOW (B-A)	-8.31	1.34	1.93	3.01	2.99	3.79

IRR = 15%

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