PREFEASIBILITY STUDY

ON SETTING UP SERVIETTES MANUFACTURING UNIT IN NIGERIA

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DISCLAIMER

ACKNOWLEDGMENT

Startup Business Foundation is thankful to all organizations and individuals who have helped in several ways in preparation of this prefeasibility study.

We also wish to extend our gratitude to all those who reviewed the content and provided valuable inputs for improving the quality, coherence, and content presentation of this prefeasibility study.

ABOUT THIS REPORT

This prefeasibility study is designed to provide potential and startups entrepreneurs' valuable information on setting up serviettes manufacturing unit in the manufacturing industry of Nigeria's market; aimed at encouraging and facilitating industrial activities across the country. It is our realization that industrialization is at the heart of economic development and that every effort has to be made to bring about industrial growth and encourage our people to be part of it.

The serviettes manufacturing business shows over 80% local content in terms of availability of raw material, equipment and machinery, manpower and other requirements.

The key areas covered in this report include:

i) Technical and economic analysis of the production, marketing and profitability of the project.

ii) Recommendations in respect of procurement of equipments and associated problems.

iii) Recommendation on suitable agronomic management practices to ensure efficient running of the projects.

iv) Detailed financial analysis including project cash flows for the projects.

This prefeasibility report provides a comprehensive and detailed coverage of the above terms of reference and is designed to facilitate investment decisions.

The implementation of this project will also impact positively on the economy of the immediate community where the project is located. This is in terms of employment-direct and indirect, skilled and unskilled. Government also stands to benefit from internal revenue from taxation.

In view of the result of the analysis using some economic indicators as stated in the proposed project, it is hereby recommended that the project is viable.

TABLE OF CONTENT

APPENIDIES

PART I
EXECUTIVE SUMMARY

This particular prefeasibility study is setting up serviette manufacturing unit in most suitable parts of Nigeria.

A serviette is a small piece of table linen that is used to wipe the mouth and to cover the lap in order to protect clothing when eating. Made out of light absorbent material, napkins are soft to absorb sweat and clean the mouth.

The market is constituted by individual consumers, hospitals, restaurants, homes and hotels among others.

The plant should be located with consideration to proximity of the targeted market and basic infrastructure availability.

The project aims at production of 2,600 packets of serviettes per month which translates into 31,200 packets annually, at 60% capacity utilization.

The total capital investment for the project is N6,344,250. Nevertheless, the scale of investment can be scaled up or down based on the available funds for the project.

1.1 SUMMARY OF TOTAL PROJECT COST

S/N	DESCRIPTION	COST INCURRED	COST TO BE INCURRED	TOTAL
1	Land & building	-	400,000	400,000
2	Machinery & equipments	-	1,817,500	1,817,500
3	Utility equipment	-	250,000	250,000
4	Office equipment	-	150,000	150,000
5	Vehicle	-	2,200,000	2,200,000
	TOTAL CAPITAL COST	-	**4,567,500**	**4,567,500**
6	Working capital	-	1,200,000	1,200,000
7	10% Contingencies & preliminary expenses	-	576,750	576,750
	Total project cost	-	**6,344,250**	**6,344,250**

1.2 FINANCIAL ACCOUNTING RATIOS ANALYSIS

PERFORMANCE RATIOS AVERAGES

(a) Return on Sales =4%

(b) Return on Equity = 307%

(c) Return on Investment =116%

(d) Positive NPV = ₦5,382,003

(e) IRR =49%

(f) ARR =26%

(g) Payback Period = 3 years and 9 months

PART II
MARKET ANALYSIS

2.1 INTRODUTION

Urbanization has made a profound impact on our dining habits in different parts of Nigeria. One of the notable changes is the increased use of paper napkins now a days, which was otherwise could be seen only in western countries but are predominate in use for domestic and commercial purposes. Plain paper napkins are now being widely used in restaurants, households, vehicles, industries, institutions etc. Tissue Paper with colourful layout and attractive designs are having bright prospects with our restaurants focusing on tidiness and adornment.

2.2 MARKET AREA ANALYSIS

With the ban on the importation of Tissue and some sanitary items, serviette paper products have show strong growth in the recent time. Many Nigerians who formerly used substitute products, for their hygiene needs are now better able to afford better products, which were not previously considered necessities.

According to the Guardian report, research indicates that Nigeria alone now needs over 950 million tons of these products per year. While our total local production output is still less than 150 million tonnes, the supply gap offers a tremendous opportunity for investors.

2.3 INDUSTRY ANALYSIS

One of the key factors contributing to this market growth of this product is the increasing demand of tissue paper for personal hygiene. The Tissue Paper market has also been witnessing an increase as a result of number of factors such as urbanization, health / hygienic awareness etc. Tissue and hygiene in Nigeria witnessed strong double-digit growth in 2019 aided by increasing consumer disposable income and consumer awareness.

This is expected to continue to increase spending on Serviette Papers for personal care usage. Even though there are large manufacturers dominating many categories in tissue sales, the demand still outstrip the supply.

2.4 TARGET MARKET ANALYSIS

Evidently, the market for product is readily available in different parts of country. Part from domestic and commercial demand from restaurants, Hotels, event centres, fastfoods, etc,. The market also stretches to the churches, mosques and other hospitality industries as it is commonly used as a cleaning material.

PART III
TECHNICAL ANALYSIS

3.1 PRODUCT DESCRIPTION

Tissue can be made both from virgin and recycled paper pulp. Majorly there are five types of tissue papers namely; Bathroom Tissue, Facial Tissue, Paper Towel, Paper Napkin and, Specialty and Wrapping Tissue. A napkin, serviette or face towelette is a rectangle of cloth used at the table for wiping the mouth and fingers while eating. It is usually small and folded sometimes in intricate designs and shapes.

For the purpose of this report, the napkin, serviette or face towellette is been considered.

3.2 PROJECT LOCATION ANALYSIS

This project can be located in any part of the country — rural or urban. However, it is advisable to set it up where there is adequate power supply. The space requirement is very small. A spacious three bedroom flat can comfortably accommodate the production machines, the administration/sales unit and the packing of finished products.

3.3 RAW MATERIAL REQUIREMENT

The raw materials include jumbo reels and glue. The packaging materials include printed labels and nylon rolls. All these are 100 per cent available locally.

3.4 PLANT CAPACITY

The profiled plant is expected to produce 40,560 units (each unit with 10 packs of 50 pieces each) per annum.

3.5 TECHNOLOGY AND PRODUCTION PROCESS

To make serviettes, a hand driven knitting machine and a yarn twister are used. The raw materials include Cotton staple yarn, absorbent thread, cotton thread, cardboard boxes and craft papers.

Cotton staple yarn is knitted into loose fabric tube, cut to required pieces of absorbent cottons with the ends of the napkins tied by thread and packed in printed polythene bags.

3.6 SOURCES OF FUNDS

The project can be funded through a number of sources which include but not limited to the following; Agric-Business, Small & Medium Scale Investment Scheme (AGSMEIS), Bank of Industry, Nigeria Export-Import (NEXIM) Bank, International Finance Corporation (IFC), grants etc., though the conditions and criteria for accessing the loans and grants varies.

PART IV
FINANCIAL ANALYSIS

Basically, the financial section of this prefeasibility study consists of three financial statements: Income statement, Balance sheet, Cash flow projection. This section determines whether or not the project is viable using some economic indicators such as Net Present Value (NPV), Internal Rate of Return (IRR), and payback period as are detailed in the appendices below.

4.1 ASSUMPTIONS

1. Assuming that the project will last for the period of five years and the salvage value at the end of the project life ignored.
2. The Machineries, Equipments and Utility Equipment have uniform depreciation of 20%.
3. The installed capacity has estimated capacity of ... metric tonnes per annum.
4. The proposed capacity utilization are 60% in the first year of commercial production, 70%, 80% in the 2nd and 3rd year respectively and 90% in the 4th and 5th years.
5. Raw materials will be sourced locally and Market for the product is readily available.
6. Staff and labour cost will increase by 10% yearly.
7. Prices and unit costs are assumed unchanged in the five years of projection.
8. The valuation currency used is Naira.

4.2 ACCOUNTING /FINANCIAL ANALYSIS

4.2.1 NET PROFIT

The projected Annual Trading Profit and Loss Account is proposed to make the following Net Profit after tax during the corresponding projected periods – all things being equal.

4.2.2 NET PRESENT VALUE (NPV)

NPV is one of the four methods of discounted cash flows techniques which state that money that is immediately available for use, has a greater value than same amount receivables in future date.

Using this method however, all net cash inflows will be discounted to present value using the estimated interest rate of 60% discount factor. At **12%** discount factor the project produced a positive **NPV NGN 5,382,003**

4.2.3 INTERNAL RATE OF RETURN (IRR)

This is the discount rate which gives zero NPV or the rate which equates the present value of cash inflows with present value of cash outflows of the project.

The cash flow of this project was discounted systematically until the NPV of the project finally become zero. The project produces the **IRR** of **49%.** Thus, the project accepted as being viable. This is because **IRR** is more than the cost of capital.

4.2.4 ACCOUNTING RATE OF RETURN (ARR)

ARR uses accounting information as revealed by financial statements (Income Statement) to measure profitability of the project under consideration. The forecast **ARR** of the project is 2**6%**

4.2.5 PROFITABILITY INDEX (PI)

This is the present value of future cash flows over the present value of cash outlays. The project PI further confirm the viability of the project , because as the rules of the accepting and rejecting hold, a project should be accepted if the PI is equal or greater than one (1). Consequently, the PI of this project is **1.72** and thus recommended as being viable to be accepted for financing.

APPENDIX
TOTAL PROJECT COST

	DESCRIPTION	QTY	Unit price	Total
	LAND & BUILDING			
1	Factory rentage	1	400,000	400,000
	Sub total	**1**	**400,000**	**400,000**
	MACHINERY & EQUIPMENTS			
2	Hand driven Knitting Machine	1	1,731,000	1,731,000
3	Yarn Twister	1	86,500	86,500
8	**Sub total**		**1,817,500**	**1,817,500**
	UTILITY EQUIPMENT			
10	Generator		250,000	250,000
	Sub total		**250,000**	**250,000**
	OFFICE EQUIPMENT			
11	Furniture & fittings	1	150,000	150,000
	Sub total	**2**	**150,000**	**150,000**
	VEHICLE			
12	Delivery van		2,200,000	2,200,000
	Sub total		**2,200,000**	**2,200,000**
	TOTAL CAPITAL COST		**4,567,500**	**4,567,500**
9	Working capital		1,200,000	1,200,000
10	10% Contingencies & preliminary expenses		576,750	576,750
	Total project cost		**6,344,250**	**6,344,250**

APPENDIX II
ESTIMATION OF WORKING CAPITAL REQUIREMENT

N'000

Year of Commercial Operation	2 weeks	Year 2	Year 3	Year 4	Year 5
% Capacity Utilization (Inventory)	60%	70%	80%	90%	90%
1 week stock of raw material	900	8,194	11,713	15,530	15,530
1 Day stock of finished products	200	3,443	4,887	5,376	5,376
Work in Progress	100	1,071	1,098	1,169	1,169
Bank/ Cash (5% sales of the products)	-	2,287	2,516	2,768	2,768
Working capital	**1,200**	**11,248**	**13,192**	**15,419**	**15,419**

APPENDIX III
FINANCING PLAN

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DESCRIPTION	EXISTING	PROPOSED	TOTAL
Equity	2,344,250	-	2,344,250
Term loan from	-	4,000,000	4,000,000
Total project cost	2,344,250	**6,000,000**	**6,344,250**
% Contribution	**15%**	**75%**	**100%**

APPENDIX IV
TERM LOAN REPAYMENT SCHEDULE

LOAN AMOUNT: 4,000,000 (Four Million Naira)
TYPE : ANY LOCAL AVAILABLE SME FUND
INTEREST RATE USED: 12%
REPAYMENT: 5 YEARS EQUAL INSTALLMENT (Annually)

YEAR	OPENING BALANCE	REPAYMENT	INTEREST DUE	TOTAL YEAR INTEREST
1	4,000,000	800,000	480,000	1,280,000
2	3,200,000	800,000	384,000	1,184,000
3	2,400,000	800,000	288,000	1,088,000
4	1,600,000	800,000	192,000	992,000
5	800,000	800,000	96,000	896,000
Total		**4,000,000**	**1,440,000**	**5,440,000**

APPENDIX V
FORECAST STAFFING SCHEDULE (1ST OPERATIONAL YEAR)
N'000

POSITION	No	Unit Scale	Scale/ Month	Scale / Year
DIRECT LABOUR				
Factory Manager	1	60	60	720
Unskilled labour	4	30	120	1,440
Sub total	**5**	**90**	**120**	**2,160**
INDIRECT LABOUR				
Accounts/ Admin	1	50	50	600
Marketing Officer	2	40	80	960
Driver	1	40	40	480
Sub total	**4**	**130**	**170**	**2,040**
Total on staff (1st year)	**10**	**220**	**290**	**4,200**

APPENDIX VI
ESTIMATE OF ANNUAL DEPRECIATION ALLOWANCE
N'

ITEMS	INITIAL VALUE	DEPRECIATION (20%)
Machinery & equipment	1,817,500	363,500
Utility Equipment	150,000	30,000
Office Equipments	250,000	50,000
Vehicle	2,200,000	440,000
TOTAL	**4,417,500**	**883,500**

APPENDIX VII
ESTIMATION OF ADMINISTRATIVE / OVERHEAD EXPENSES
N'

COST ITEM	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Selling and Distribution	1,328,400	1,394,820	1,461,240	1,534,302	1,534,302
Diesel / Fuel	900,000	945,000	990,000	1,039,500	1,039,500
Miscellaneous expenses	226,800	238,140	249,480	261,954	261,954
TOTAL	**2,455,200**	**2,577,960**	**2,700,720**	**2,835,756**	**2,835,756**

APPENDIX VIII
ESTIMATION OF PRODUCTION AND OPERATION COSTS

Cost Item	Units	@/ day	Qty/ day	Prod. Cost/ day	Prod. Cost/ month	Prod Cost/ Year
Direct costs3:						
Cotton staple yarn	Yarns	900	40	36,000	936,000	11,232,000
Absorbent thread	No	900	30	27,000	702,000	8,424,000
Cotton thread	Yarns	900	10	9,000	234,000	2,808,000
Cardboard boxes	No	228	5	1,140	29,700	355,800
Craft papers	No	510	15	7,650	198,900	2,386,800
Sub-total					**2,100,600**	**25,206,600**

APPENDIX IX
ESTIMATION OF RAW MATERIAL/PRODUCTION COST AND SALES

Year of Commercial Production	Year 1	Year 2	Year 3	Year 4	Year 5
% Capacity Utilization	**60%**	**70%**	**80%**	**90%**	**90%**
1. Output					
Plain Serviettes	21,840	24,024	26,208	28,829	28,829
Decorated Serviettes	9,360	10,296	11,232	12,355	12,355
Total output	**31,200**	**34,320**	**37,440**	**41,184**	**41,184**
2. Cost of Production	**N'**	**N'**	**N'**	**N'**	**N'**
Plain Serviettes @ N807.9	17,644,620	19,409,082	21,173,544	23,290,898	23,290,898
Decorated Serviettes @N807.9	7,561,980	8,318,178	9,074,376	9,981,814	9,981,814
Total cost of production	**25,206,600**	**27,727,260**	**30,247,920**	**33,272,712**	**33,272,712**
3. SALES					
Plain Serviettes @ N1,110	25,116,000	27,627,600	30,139,200	33,153,350	33,153,350
Decorated Serviettes @ N1,200	11,232,000	12,355,200	13,478,400	14,826,000	1,4826,000
TOTAL SALES/ TURNOVER	**36,348,000**	**39,982,800**	**43,617,600**	**47,979,350**	**47,979,350**

APPENDIX X
FORECAST INCOME STATEMENT (PROFIT & LOSS ACCOUNT)

Year of commercial operation	Year 1	Year 2	Year 3	Year 4	Year 5
% Capacity Utilization	60%	70%	80%	90%	90%
1. SALES	N'	N'	N'	N'	N'
Gross Sales	36,348,000	39,982,800	43,617,600	47,979,350	47,979,350
VAT @ 5%	1,817,400	1,999,140	2,180,880	2,398,967.5	2,398,967.5
Net Revenue	**34,530,600**	**37,983,660**	**41,436,720**	**45,580,383**	**45,580,383**
2. OPERATION COST					
Cost of Raw materials consumed	25,206,600	27,727,260	30,247,920	33,272,712	33,272,712
Staff and labour	4,200,000	4,410,000	4,620,000	4,851,000	4,851,000
Admin. & Overhead Expenses	2,455,200	2,577,960	2,700,720	2,835,756	2,835,756
Depreciation	883,500	883,500	883,500	883,500	883,500
Total Operating Cost	**32,745,300**	**35,598,720**	**38,452,140**	**41,842,968**	**41,842,968**
3. OTHER COSTS					
Interest on Term Loan (12%)	480,000	384,000	288,000	192,000	96,000
Loan Repayment	800,000	800,000	800,000	800,000	800,000
Total (Other Costs)	**34,025,300**	**36,782,720**	**39,540,140**	**42,834,968**	**42,738,968**
Profit Before Tax	505,300	1,200,940	1,896,580	2,745,415	2,841,415
Corporate Tax @ 12%	60,636	144,112.8	227,589.6	329,449.8	340,969.8
Profit after tax (NET PROFIT)	**444,664**	**1,056,827**	**1,668,990**	**2,415,965**	**2,500,445**
% Return on Sales	0.01	0.03	0.05	0.05	0.06
% Return on Equity	0.19	0.45	0.71	1.03	1.07
% Return on Investment	0.07	0.17	0.26	0.38	0.39

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APPENDIX XI
FORECAST HIGH RATE AND LOW RATE COMPUTATION

Year	C/F	DF 12%	NPV
	N'		N'
0	**(6,344,250)**	1	**(6,344,250)**
1	444,664	0.893	397085
2	1,056,827	0.797	842291.1
3	1,668,990	0.712	1188321
4	2,415,965	0.636	1536554
5	2,500,445	0.567	1417752
Total Profit	**8,086,891**		**5,382,003**
Average Profit	**1,617,378.2**		

Year	C/F	DF 60%	NPV
	N'		N'
0	**(6,344,250)**	1	**(6,344,250)**
1	444,664	0.625	277915
2	1,056,827	0.3906	412796.6
3	1,668,990	0.2441	407400.5
4	2,415,965	0.1526	368676.3
5	2,500,445	0.0954	238542.5
Total Profit	**8,086,891**		**1,705,331**
Average Profit	**1,617,378.2**		

APPENDIX XII

FORECAST IRR AND ARR COMPUTATION

$$IRR = a + \left(\frac{A}{A+B}\right) * (b-a)$$

Where

a = 12%

b= 60%

A = 5,382,003

B= 1,705,331

$$12\% + \frac{5,382,003}{5,382,003 + 1,705,331}(60-12)$$

12% + 34.5

49%

$$ARR = \frac{\text{Estimated Average Profit}}{\text{Estimated initial investment}} * 100$$

$$ARR = \frac{1,617,378.2}{6,344,250} * 100$$

26%

APPENDIX XIII
CASH FLOW PROJECTION

Year of Comm. Production	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
% Capacity Utilization		60%	70%	80%	90%	90%
A) CASH RECEIPTS	**N'**	**N'**	**N'**	**N'**	**N'**	**N'**
Equity Capital	2,344,250	-	-	-	-	-
Term Loan	4,000,000	-	-	-	-	-
Gross Revenue		34,530,600	37,983,660	41,436,720	45,580,383	45,580,383
Total Receipts	**6,344,250**	**34,530,600**	**37,983,660**	**41,436,720**	**45,580,383**	**45,580,383**
B) CASH PAYMENTS						
Capital Payment						
Machinery & Equipments	1,817,500	-	-	-	-	-
Utility Equipment	150,000	-	-	-	-	-
Office equipments	250,000	-	-	-	-	-
Vehicle	2,200,000	-	-	-	-	-
TOTAL	**4,417,500**	-	-	-	-	-
(ii) Operating Expenses						
Depreciation	-	883,500	883,500	883,500	883,500	883,500
Change in working capital	1,926,750	31,861,800	34,715,220	37,568,640	40,959,468	40,959,468
Sub total	**1,926,750**	**32,745,300**	**35,598,720**	**38,452,140**	**41,842,968**	**41,842,968**
(iii) Financial Expenses						
Repayment of Term Loan	-	800,000	800,000	800,000	800,000	800,000
Interest on Term Loan	-	480,000	384,000	288,000	192,000	96,000
Value Added Tax	-	1,817,400	1,999,140	2,180,880	2,398,967.5	2,398,967.5
Corporate Tax	-	60,636	144,112.8	227,589.6	329,449.8	340,969.8
Sub total	-	**3,158,036**	**3,327,253**	**3,496,470**	**3,720,417**	**3,635,937**
Total cash payment (ii)-(iii)	**1,926,750**	**29,587,264**	**32,271,467**	**34,955,670**	**38,122,551**	**38,207,031**
Net cash flow c/f	1,926,750	29,587,264	32,271,467	34,955,670	38,122,551	38,207,031

APPENDIX XIV
BALANCE SHEET PROJECTION

Year of comm. Operation	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
ASSETS	N'000	N'000	N'000	N'000	N'000	N'000
(i) Fixed assets						
Machinery and Equipments	1,817,500	-	-	-	-	-
Utility equipment	150,000	-	-	-	-	-
Office Equipment	250,000	-	-	-	-	-
Vehicle	2,200,000	-	-	-	-	-
Value at Acquisition	-	4,417,500	4,417,500	4,417,500	4,417,500	4,417,500
Less Cumulated Depreciation	-	883,500	1,767,000	2,650,500	3,534,000	4,417,500
Net fixed assets	**4,417,500**	**3,534,000**	**2,650,500**	**1,767,000**	**883,500**	**0**
(ii)Current Assets/ liability						
Stock of Raw Materials	1,200,000	4,786,526	6,320,323	8,399,118	10,168,481	11,352,889
Debtors /prepayment	-	1,453,000	2,098,000	3,308,000	4,139,000	5,653,000
Bank and Cash Balances	726,750	1,150,024	2,160,031	3,170,539	4,180,674	5,180,741
Creditor / accruals	-	(4,074,000)	(6,039,000)	(8,947,000)	(11,013,000)	(13,785,000)
Company Tax	-	(60,636)	(144,112.8)	(227,589.6)	(329,449.8)	(340,969.8)
Net current assets	**1,926,750**	**3,254,914**	**4,395,241**	**5,703,067**	**7,145,705**	**8,060,660**
TOTAL NET ASSETS	**6,344,250**	**6,788,914**	**7,045,741**	**7,470,067**	**8,029,205**	**8,060,660**
(ii) FINANCED BY						
Equity Capital	2,344,250	2,344,250	2,344,250	2,344,250	2,344,250	2,344,250
P&L	-	444,664	1,056,827	1,668,990	2,415,965	2,500,445
Retained Profit	-	-	444,664	1,056,827	1,668,990	2,415,965
SHAREHOLDERS FUND	**2,344,250**	2,788,914	3,845,741	5,070,067	6,429,205	7,260,660
Long Term Loan	4,000,000	4,000,000	3,200,000	2,400,000	1,600,000	800,000
TOTAL EQUITY & LIABILITY	**6,344,250**	6,788,914	7,045,741	7,470,067	8,029,205	8,060,660