PREFEASIBILITY STUDY

ON SETTING UP PAPER ENVELOPES MANUFACTURING UNIT IN NIGERIA

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DISCLAIMER

ACKNOWLEDGMENT

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ABOUT THIS REPORT

This prefeasibility study is designed to provide potential and startups entrepreneurs' valuable information on setting up envelop paper manufacturing business 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 envelop paper business show 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 on setting paper envelop where it is most suitable in any part of the country.

Paper envelopes are stationery products that can easily be marketed as the users and consumers are very many such as government organizations, schools, courier organizations and individual consumers.

In the location of the factory, the entrepreneur should consider majorly access to market for the finished products, given that the project has little requirement for electricity among others.

The production is projected based on 5,000 pieces of paper envelopes daily which translates to 1,560,000 per annum, working 312 days per year at 60% capacity utilization.

The establishment of this project requires total investment costs of N2,275,900, capital cost of N869,000 and working capital of N1,200,000. Nevertheless, the scale of the investment depends on the amount available for the project.

1.1 SUMMARY OF TOTAL PROJECT COST

S/N	DESCRIPTION	COST TO BE INCURRED	COST TO BE INCURRED	TOTAL
1	Land & Building	-	200,000	200,000
2	Machinery & Equipments	-	128,020	519,000
3	Office Equipment	-	150,000	150,000
	TOTAL CAPITAL COST	-	**478,020**	**869,000**
4	Working capital	-	1,200,000	1,200,000
5	10% Contingencies & preliminary expenses	-	206,900	206,900
	Total project cost	-	**1,884,920**	**2,275,900**

1.2 FINANCIAL ACCOUNTING RATIOS ANALYSIS

PERFORMANCE RATIOS AVERAGES

(a) Return on Sales =15%

(b) Return on Equity = 5,468%

(c) Return on Investment =663%

(d) Positive NPV = ₦53,666,121

(e) IRR =46%

(f) ARR =633%

(g) Payback Period = 9 months

PART II
MARKET ANALYSIS

2.1 INTRODUCTION

Paper envelopes play an important role as a stationery material in any type of correspondence. The basic raw material is paper. Mostly, white or brown papers are utilized for this purpose. These are used in post offices, commercial centres, advertisements and in sampling. It is estimated that the consumption is on higher side in comparison to present production.

2.2 MARKET AREA ANALYSIS

An envelope is a flat, flexible container, made of paper or similar material that has a single opening and a flap that can be sealed over the opening. The envelope is usually sealed by wetting an area of the flap. Some envelopes are sealed with a metal fastener. Others are sealed with a piece of string that wraps around flat, circular pieces of cardboard attached to the envelope. A recent development in envelopes is a thin strip of plastic, which is removed to reveal an area of the flap with an adhesive that does not need moistening.

2.3 DEMAND AND SUPPLY ANALYSIS

Currently the demand for envelop are surged following the increase in literacy level. Similarly, envelop products have a high demand by many institutions such as: schools, Government bodies, Stationery shops, NGOS and individual buyers.

The demand is expected to grow on account of an anticipated pick-up from the education sector with improving literacy rates and growing enrolment as well as increasing number of schools and colleges.

2.4 TARGET MARKET ANALYSIS

The market for envelop is wide as it is used by many organization mostly official purpose, therefore, the market exist in every part of the country. Nevertheless, the entrepreneur needs to engage distributors and marketer that will place bulk order on a regular basis for the product.

PART III
TECHNICAL ANALYSIS

3.1 PRODUCT DESCRIPTION

Envelopes are almost always rectangular, but they exist in a wide range of sizes. The two main styles used are banker envelopes, which have the opening on the long side, and pocket envelopes, which have the opening on the short side. In Nigeria, standard sizes range from *size* 10″ x 13″ or 9″ x 12″. To insert A5 contents, you may choose *envelopes* with *size* 6″ x 9″. For A4 contents folded into 3 panels, the common *size* of *envelopes* would be 4.5″ x 9.7″ or 4.75″ x 9.5″. Some envelopes have one or more windows cut into the front to allow addresses written on sheets inside to be seen. These windows may be covered with a transparent material.

3.2 LOCATION ANALYSIS

Given the nature of the paper envelop as it serves as necessitate to every organization for official documentation and presentation, the product has less market presence in the rural areas compare to metropolitan cities where many offices and institutions are location. Therefore, the location of the factory would be best located near the city in any part of the country.

3.2 RAW MATERIALS

Most envelopes are made from paper. Paper used for most envelopes is made from wood. Modern technology allows the wood to come from almost any kind of tree. Paper used to make very high quality envelopes, such as those used to enclose formal invitations, may be made partly or completely from cotton or linen.

3.3 PRODUCTION CAPACITY

Production costs assumed daily capacity of producing 5,000 pieces of paper envelopes which translates to 1,560,000 per annum, working 312 days per year at 60% capacity utilization.

3.4 TECHNOLOGY & PROCESS

A paper cutting machine is used to cut different paper pieces to sizes as wanted by the operator for the type and size of envelopes to be produced. Binding glue is then applied to the cut sides of the paper and later they are joined together. Labeling can be done thereafter. The envelopes are then packed ready for distribution.

3.5 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, 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.

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. Production costs assumed daily capacity of producing 5,000 pieces of paper envelopes which translates to 1,560,000 per annum, working 312 days per year at 60% capacity utilization.
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 53,666,121**

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 **46.2%.** 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 **663%.**

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	200,000	200,000
	Sub total	**1**	**200,000**	**200,000**
	MACHINERY & EQUIPMENTS			
2	Paper Cutting machine	1	125,000	125,000
3	Rulers	100	200	20,000
4	Pencils	300	20	6,000
5	Glue Sticks	125	800	100,000
6	Scissors	34	2,000	68,000
7	Other tools	-		200,000
	Sub total		**128,020**	**519,000**
	OFFICE EQUIPMENT			
8	Furniture & fittings	1	150,000	150,000
	Sub total	**2**	**150,000**	**150,000**
	TOTAL CAPITAL COST		**478,020**	**869,000**
9	Working capital		1,200,000	1,200,000
10	10% Contingencies & preliminary expenses		206,900	206,900
	Total project cost		**1,884,920**	**2,275,900**

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	1,000	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	-	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	275,900	-	275,900
Term loan from	-	2,000,000	2,000,000
Total project cost	**275,900**	**2,000,000**	**2,275,900**
% Contribution	**15%**	**75%**	**100%**

APPENDIX IV
TERM LOAN REPAYMENT SCHEDULE

LOAN AMOUNT: 2,000,000 (Two Million Naira Only)
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	2,000,000	400,000	240,000	640,000
2	1,600,000	400,000	192,000	592,000
3	1,200,000	400,000	144,000	544,000
4	800,000	400,000	96,000	496,000
5	400,000	400,000	48,000	448,000
Total		**2,000,000**	**720,000**	**2,720,000**

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**	**120**	**180**	**2,160**
INDIRECT LABOUR				
Accounts/ Admin	1	50	50	600
Marketing Officer	2	40	80	960
Sub total	**4**	**130**	**170**	**1,560**
Total on staff (1st year)	**8**	**280**	**350**	**4,720**

APPENDIX VI
ESTIMATE OF ANNUAL DEPRECIATION ALLOWANCE
N'

ITEMS	INITIAL VALUE	DEPRECIATION (20%)
Utility Equipment	519,000	103,800
Office Equipments	150,000	30,000
TOTAL	**669,000**	**133,800**

APPENDIX VII
ESTIMATION OF ADMINISTRATIVE / OVERHEAD EXPENSES
N'

COST ITEM	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Selling and Distribution	3,800	4,180	4,560	5,016	5,016
Advert & publicity	1,800	2,680	3,560	4,616	3,616
TOTAL	**5,600**	**6,860**	**8,120**	**9,632**	**8,632**

APPENDIX VIII
ESTIMATION OF PRODUCTION AND OPERATION COSTS

Cost Item	Units	@	Qty/ day	Pdn. cost/day	Pdn cost/ mth	Pdn cost/Yr
Direct Costs						
Wall Paper Samples	Mtrs	750	20	15,000	390,000	4,680,000
Bonded Paper	Mtrs	1,000	34	34,000	884,000	10,608,000
Decorative Paper	Mtrs	5,000	22	110,000	2,860,000	34,320,000
Printer Paper	Reams	750	10	7,500	195,000	2,340,000
Glue	Ltrs	2,000	3	6,000	156,000	1,872,000
Old Calendars Pictures	Mtrs	1,000	5	5,000	130,000	1,560,000
Other materials		0	-	0	60,500	726,000
Sub-total		**10,500**	**143**	**177,500**	**4,675,500**	**56,106,000**

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					
Envelop paper (grms)	780,000	858,000	936,000	1,029,600	1,029,600
Total output	**780,000**	**858,000**	**936,000**	**1,029,600**	**1,029,600**
2. Cost of Production	**N'**	**N'**	**N'**	**N'**	**N'**
Envelop paper (grms) @N71.9	56,106,000	61,716,600	67,327,200	74,059,920	74,059,920
Total cost of production	**56,106,000**	**61,716,600**	**67,327,200**	**74,059,920**	**74,059,920**
3. SALES					
Envelop paper (grms) @N120	93,600,000	102,960,000	112,320,000	123,552,000	123,552,000
TOTAL SALES/ TURNOVER	**93,600,000**	**102,960,000**	**112,320,000**	**123,552,000**	**123,552,000**

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	93,600,000	102,960,000	112,320,000	123,552,000	123,552,000
VAT @ 5%	11,232,000	12,355,200	13478400	14,826,240	14,826,240
Net Revenue	**82,368,000**	**90,604,800**	**98841600**	**108,725,760**	**108,725,760**
2. **OPERATION COST**					
Cost of Raw materials consumed	56,106,000	61,716,600	67,327,200	74,059,920	74,059,920
Staff and labour	4,720,000	5,192,000	5,664,000	6,230,000	6,230,000
Admin. & Overhead Expenses	5,600,000	6,860,000	8,120,000	9,632,000	8,632,000
Depreciation	133,800	133,800	133,800	133,800	133,800
Total Operating Cost	**66,559,800**	**73,902,400**	**81,245,000**	**90,055,720**	**89,055,720**
3. **OTHER COSTS**					
Interest on Term Loan (12%)	240,000	192,000	144,000	96,000	48,000
Loan Repayment	400,000	400,000	400,000	400,000	400,000
Total (Other Costs)	**67,199,800**	**74,494,400**	**81,789,000**	**90,551,720**	**89,503,720**
Profit Before Tax	15,168,200	16,110,400	17,052,600	18,174,040	19,222,040
Corporate Tax @ 12%	1,820,184	1,933,248	2,046,312	2,180,884.8	2,306,644.8
Profit after tax (NET PROFIT)	**13,348,016**	**14,177,152**	**15,006,288**	**15,993,155**	**16,915,395**
% Return on Sales	0.16	0.16	0.15	0.15	0.15
% Return on Equity	48.38	51.38	54.39	57.96	61.30
% Return on Investment	5.86	6.23	6.59	7.03	7.43

APPENDIX XI

FORECAST HIGH RATE AND LOW RATE COMPUTATION

Year	C/F	DF 12%	NPV
	N'		N'
0	**(2,275,900)**	1	**(2,275,900)**
1	13,348,016	0.893	11,919,778.2
2	14,177,152	0.797	11,299,190.1
3	15,006,288	0.712	10,684,477.0
4	15,993,155	0.636	10,171,646.5
5	16,915,395	0.567	9,591,028.9
Total Profit	**75,440,006**		**53,666,121**
Average Profit	**15,088,001.2**		

Year	C/F	DF 60%	NPV
	N'		N'
0	**(2,275,900)**	1	**(2,275,900)**
1	13,348,016	0.625	8,342,510
2	14,177,152	0.3906	5,537,595
3	15,006,288	0.2441	3,663,034
4	15,993,155	0.1526	2,440,555
5	16,915,395	0.0954	1,613,728
Total Profit	**75,440,006**		**21,597,425**
Average Profit	**15,088,001**		

APPENDIX XII

FORECAST IRR AND ARR COMPUTATION

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

Where

$a = 12\%$

$b = 60\%$

$A = 53{,}666{,}121$

$B = 21{,}597{,}425$

$$12\% + \frac{53{,}666{,}121}{60{,}168{,}747 + 21{,}597{,}425} (60-12)$$

$$12\% + 34.2$$

$$\underline{46\%}$$

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

$$ARR = \frac{15{,}088{,}001}{2{,}275{,}900} * 100$$

$$\underline{663\%}$$

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	275,900	-	-	-	-	-
Term Loan	2,000,000	-	-	-	-	-
Gross Revenue	-	82,368,000	90,604,800	98841600	108,725,760	108,725,760
Total Receipts	**2,275,900**	**82,368,000**	**90,604,800**	**98841600**	**108,725,760**	**108,725,760**
B) CASH PAYMENTS						
Capital Payment						
Utility Equipment	519,000	-	-	-	-	-
Office equipments	150,000	-	-	-	-	-
TOTAL	**669,000**	-	-	-	-	-
(ii) Operating Expenses						
Depreciation	-	133,800	133,800	133,800	133,800	133,800
Change in working capital	1,606,900	66,426,000	73,768,600	81,111,200	89,921,920	88,921,920
Sub total	**1,606,900**	**66,559,800**	**73,902,400**	**81,245,000**	**90,055,720**	**89,055,720**
(iii) Financial Expenses						
Repayment of Term Loan	-	400,000	400,000	400,000	400,000	400,000
Interest on Term Loan	-	240,000	192,000	144,000	96,000	48,000
Value Added Tax	-	11,232,000	12,355,200	13478400	14,826,240	14,826,240
Corporate Tax	-	1,820,184	1,933,248	2,046,312	2,180,884.8	2,306,644.8
Sub total	-	**13,692,184**	**14,880,448**	**16,068,712**	**17,503,125**	**17,580,885**
Total cash payment (ii)-(iii)	**1,606,900**	**52,867,616**	**59,021,952**	**65,176,288**	**72,552,595**	**71,474,835**
Net cash flow c/f	1,606,900	52,867,616	59,021,952	65,176,288	72,552,595	71,474,835

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						
Utility equipment	519,000	-	-	-	-	-
Office Equipment	150,000	-	-	-	-	-
Value at Acquisition	-	669,000	669,000	669,000	669,000	669,000
Less Cumulated Depreciation	-	133,800	267,600	401,400	535,200	669,000
Net fixed assets	**669,000**	**535,200**	**401,400**	**267,600**	**133,800**	**0**
(ii)Current Assets/ liability						
Stock of Raw Materials	1,200,000	15,379,876	29,713,885	31,906,513	33,815,754	36,842,354
Debtors /prepayment	-	1,453,000	2,098,000	3,308,000	4,139,000	5,653,000
Bank and Cash Balances	406,900	4,150,024	5,160,031	6,170,539	7,180,674	7,180,741
Creditor / accruals	-	(4,074,000)	(6,039,000)	(8,947,000)	(11,013,000)	(13,785,000)
Company Tax	-	(1,820,184)	(1,933,248)	(2,046,312)	(2,180,884.8)	(2,306,644.8)
Net current assets	**1,606,900**	**15,088,716**	**28,999,668**	**30,391,740**	**31,941,543**	**33,584,450**
TOTAL NET ASSETS	**2,275,900**	**15,623,916**	**29,401,068**	**30,659,340**	**32,075,343**	**33,584,450**
(ii) FINANCED BY						
Equity Capital	275,900	275,900	275,900	275,900	275,900	275,900
P&L	-	13,348,016	14,177,152	15,006,288	15,993,155	16,915,395
Retained Profit	-	-	13,348,016	14,177,152	15,006,288	15,993,155
SHAREHOLDERS FUND	**275,900**	**13,623,916**	**27,801,068**	**29,459,340**	**31,275,343**	**33,184,450**
Long Term Loan	2,000,000	2,000,000	1,600,000	1,200,000	800,000	400,000
TOTAL EQUITY & LIABILITY	**2,275,900**	**15,623,916**	**29,401,068**	**30,659,340**	**32,075,343**	**33,584,450**

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