Pre-Feasibility Study

SOFTWARE HOUSE



Small and Medium Enterprises Development Authority

Ministry of Industries & Production Government of Pakistan www.smeda.org.pk

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TABLE OF CONTENTS

1	DIS	SCLAIMER	. 3
2	EX	ECUTIVE SUMMARY	. 4
3	INT	RODUCTION TO SMEDA	. 4
4	PU	RPOSE OF THE DOCUMENT	. 5
5	BR	IEF DESCRIPTION OF PROJECT & PRODUCT	. 5
	5.1	Process Flow of Services	. 6
	5.2	Installed & Operational Capacities	6
6	CR	ITICAL FACTORS	. 7
7	GE	OGRAPHICAL POTENTIAL FOR INVESTMENT	. 7
8	РО	TENTIAL TARGET MARKETS	. 8
9	PR	OJECT COST SUMMARY	. 8
	9.1	Project Economics	8
	9.2	Project Financing	. 8
	9.3	Project Cost	. 9
	9.4	Office Equipment Requirement	. 9
	9.5	Furniture and Fixture Requirements	IC
	9.6	Space Requirement	IC
	9.7	Human Resource Requirement	11
	9.8	Revenue Generation	11
	9.9	Other Costs	12
10) CO	NTACT DETAILS	12
11	I US	EFUL LINKS	12
12	2 AN	NEXURES	14
	12.1	Income Statement	14



12.2	Balance Sheet	15
12.3	Cash Flow Statement	16
13 KE	Y ASSUMPTION	17
13.1	Operating Assumptions	17
13.2	Revenue Assumprions	17
13.3	Financial Assumptions	17



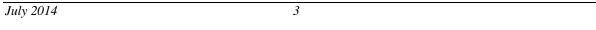
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2 EXECUTIVE SUMMARY

After great recession foreign-based companies have entered a recovery phase and seeing the cost benefits have started outsourcing their multiple services to the IT and IT-enabled companies of various countries. Pakistan has potential to grab its share in IT-enabled services market as well as contribute towards providing software applications to various developed countries. The demand is expected to flourish in the upcoming years. Many countries prefer outsourcing from Pakistan because of the lower cost of manpower and advanced technological infrastructure. It enables the IT sector to bring in good investment opportunities in the country as well as to create of more job opportunities in Pakistan.

This pre-feasibility study provides information on key aspects of establishing a software house that will cater to both local and export markets and can be located in any big city of Pakistan. The software house will offer a wide range of consulting services and cost-effective development of customized application software. In addition to this, the focus of the firm will be to become a multi-dimensional technology company deriving revenue and customer satisfaction from a variety of Information Technology services and customized software offerings including Technology Outsourcing, Systems Integration, Application Development, Processes Consulting, Business Intelligence Consulting, and Information Security Consulting among others.

The estimated cost of the project is Rs.6.34 million out of which Rs. 4.47 million would be capital investment and remaining Rs. 1.88 million would be for working capital. The project is proposed to be financed through 50% debt and 50% equity. The project NPV is around Rs. 8.48 million, with an IRR of 42% and payback period of 2.93 years. The project will provide employment opportunities to 13 people including owner manager. The legal business status of this project is proposed as 'Sole Proprietorship'.

3 INTRODUCTION TO SMEDA

The Small and Medium Enterprises Development Authority (SMEDA) was established in October 1998 with an objective to provide fresh impetus to the economy through development of Small and Medium Enterprises (SMEs).

With a mission "to assist in employment generation and value addition to the national income, through development of the SME sector, by helping increase the number, scale and competitiveness of SMEs", SMEDA has carried out 'sectoral research' to identify policy, access to finance, business development services, strategic initiatives and institutional collaboration and networking initiatives.

Preparation and dissemination of prefeasibility studies in key areas of investment has been a successful hallmark of SME facilitation by SMEDA.



Concurrent to the prefeasibility studies, a broad spectrum of business development services is also offered to the SMEs by SMEDA. These services include identification of experts and consultants and delivery of need based capacity building programs of different types in addition to business guidance through help desk services.

4 PURPOSE OF THE DOCUMENT

The objective of the pre-feasibility study is primarily to facilitate potential entrepreneurs in project identification for investment. The project pre-feasibility may form the basis of an important investment decision and in order to serve this objective, the document / study covers various aspects of project concept development, start-up, production, marketing, finance and business management.

The purpose of this document is to facilitate potential investors in **Software House** business by providing them a general understanding of the business with intention of supporting potential investors in crucial investment decisions.

The need to come up with pre-feasibility reports for undocumented or minimally documented sectors attains greater imminence as the research that precedes such reports reveal certain thumb rules; best practices developed by existing enterprises by trial and error and certain industrial norms that become a guiding source regarding various aspects of business set-up and it's successful management.

Apart from carefully studying the whole document, one must consider critical aspects provided later on, which shall form the basis of any investment decision.

5 BRIEF DESCRIPTION OF PROJECT & PRODUCT

The pre-feasibility study provides information on two of the main sub sectors of software development industry in Pakistan; namely Database Development and Animations. These sub sectors offer aspiring entrepreneurs a compelling opportunity to establish business in one of the top export oriented sectors of Pakistan. Easy and sustained access to highly trained professionals coupled with availability of required infrastructure makes this sub sector an attractive opportunity for entrepreneurs to venture into software development in Pakistan.

This project mainly focuses on potential investment opportunity in the area of software development and more precisely data base development and animation creation. However, other products and services related to various sectors such as finance, insurance, human resource etc. can also be offered under the project, without any additional equipment.

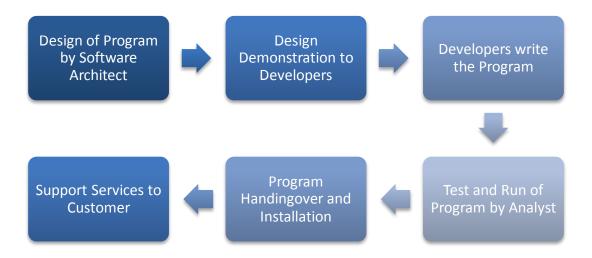


The proposed software house is based upon two divisions, each consisting of a software architect, an analyst and two developers working on an 8 hour shift and generating around 3,936 value hours for customers with an initial capacity utilization of 50% efficiency level during the first year. Overall, the business will provide direct employment opportunity to thirteen (13) individuals including the owner manager. The business will be setup in rented premises, having covered area of approximately 1,550sqft.

The total cost of the proposed business venture is estimated at Rs. Rs.6.34 million, with 50% debt and 50% equity financing basis.

5.1 Process Flow of Services

The process flow of software house services mainly entails the following sequence of activities:



5.2 Installed & Operational Capacities

This pre-feasibility is based on Two (2) parallel project teams; comprising of one (01) software architect, one (01) software analyst and two (02) developers working on 8 hours single shift daily. Total number of value hours to serve customers is 3,936. However, it is assumed that employees would work at 50% efficiency level during first year of operation with 1,968 value hours.

The maximum efficiency level of customer hours achieved by a software house is expected as 60%, accordingly the proposed venture will be able to achieve the maximum efficiency level of customers hours (i.e. 2,362 hours @ 60%) by the third year.



6 CRITICAL FACTORS

Following are the factors critical for the success of this business venture;

Background knowledge and technical qualification of the entrepreneur and key staff.

- > Thorough understanding of international regulations related to piracy and copyright protection.
- Hiring and retention of competent and trained manpower
- Higher return on investment and a steady growth of business is closely associated with regular training and capacity building of the entrepreneur and key staff.
- Stringent supervision of the development process at every level.
- Continuous flow of exports orders through aggressive marketing (website & social media) and international networking.
- Formulation and implementation of customer follow up and feedback systems
- Make effective use of facilitation agencies like P@SHA, PITB and PESB etc.

7 GEOGRAPHICAL POTENTIAL FOR INVESTMENT

The recommended location for establishing a software house is a commercial plaza of any large metropolitan city of Pakistan due to the easy availability of required labor and IT infrastructure.

In this regard, Pakistan Software Export Board (PSEB) has established Software Technology Parks (STPs) in Islamabad, Karachi, and Lahore to facilitate the IT and IT-enabled Services (ITeS) companies operating in Pakistan. Designed with a view to getting business ventures up and running in the shortest possible time, these STPs provide office space with all the modern conveniences in prime business locations in these major cities. These dedicated premises provide a comfortable working environment, high-speed international data connectivity, and an uninterrupted power supply, with minimal regulatory overheads and paperwork, to its registered companies.

Additionally, STPs in all these cities have facilities for conferences/seminars, business centers, adequate security arrangements, and ample parking space. Investors can lease out office space in an existing Software Technology Park (STP).

8 POTENTIAL TARGET MARKETS

In local market there is great trend towards automation of business processes and a lot of small, medium and large organizations are converting their processes from paperpencil methodology to IT based processes.

Whereas, in export market, United States of America is the largest buyer of Pakistan ITenabled services followed by UK, Australia, Canada, Thailand, UAE and others countries.

9 PROJECT COST SUMMARY

A detailed financial model has been developed to analyze the commercial viability of Software House. Various costs and revenue related assumptions along with results of the analysis are outlined in this section.

The projected Income Statement, Cash Flow Statement and Balance Sheet are also attached as annexure.

9.1 Project Economics

This project has capacity to generate 3,936 value hours, which would be utilized at 50% efficiency in first year and a maximum of 60% efficiency in subsequent years.

The following table shows Internal Rate of Return (IRR), Payback Period and Net Present Value (NPV).

Table 1: Project Economics

Description	Details
Internal Rate of Return (IRR)	42%
Pay Back Period	2.93 Years
Net Present Value (NPV)	Rs. 8,483,301

Returns on the scheme and its profitability are highly dependent on acquiring and maintaining export orders, adhering to the schedules. Quality assurance and adherence to international standards are other considerations.

9.2 Project Financing

Following table provides the details of required equity and variables related to bank loan;

Table 2: Project Financing

Description	Details
Total Equity (50%)	Rs. 3,171,113
Bank Loan (50%)	Rs. 3,171,113



Annual Markup to the Borrower– Long Term Loan	16%
Tenure of the Loan (Years)	5

9.3 Project Cost

Following fixed and working capital requirements have been identified for operations of the proposed business.

Table 3: Project Investment

Capital Cost	Amount Rs.
Office Equipment	2,476,600
Furniture and Fixtures	1,705,900
Pre-operating Cost	269,032
Training Costs	14,000
Total Capital Cost	4,465,532
Working Capital	
Building Rent	651,000
Cash	1,225,694
Total Working Capital	1,876,694
Total Project Cost	6,342,226

9.4 Office Equipment Requirement

Following tables provides list of office equipment required for setting-up an average size software house.

Table 4: Office Equipment

Description	Quantity	Unit Cost (Rs.)	Total Cost (Rs.)
Laptop (Window Based)	4	104,400	417,600
Laptop (iOS Based)	5	161,400	807,000
Computer Server (Refurbished)	1	1,000,000	1,000,000
Multipurpose Machine (Printing/Scaning/Coping/Fax)	2	55,000	110,000
Desktop PCs	2	44,000	88,000
Telephone	7	2000	14,000
Thumb Impression Device	1	30,000	30,000



Telephone exchange	1	10,000	10,000
Total			2,476,600

9.5 Furniture and Fixture Requirements

The details of required furniture and fixture for the proposed software house are provided in the following table:

Table 5: Furniture and Fixture Required

Description	Quantity	Unit Cost	Total Cost
		(Rs.)	(Rs.)
CEO Office	1	147,000	147,000
Fixtures Including Renovation	1	250,000	250,000
Presentation Equipment	1	70,000	70,000
Analysts & Architects Office Sets	4	100,500	402,000
Carpeting	1,125	28	31,500
Developers Work Stations	4	39,600	158,400
Lighting and Allied Equipment	1	100,000	100,000
Conference Room Furniture Set	1	165,000	165,000
Reception Furniture	1	182,000	182,000
Air Conditioner (1.5 ton Split)	4	50,000	200,000
Total			1,705,900

9.6 Space Requirement

The proposed software house will be set-up in a rental premises. In this regard office space may be acquired in a commercial plaza or existing Software Technology Parks in any of the metropolis city of Pakistan. An estimated covered area of 1,550 sqft will be required for the proposed venture; this space requirement has been calculated on the basis of proposed manpower and other official engagements. Following table provide the details of space requirement:

Table 6: Space Requirement

Space Requirement	Covered Area Sq. ft
CEO Office	200
Analysts Area	150
Architects Area	150
Developers Area	200
Reception	425



Conference Room	425
Total Area	1,550

The estimated rent of required office space in a commercial plaza or Software Technology Parks in a large city is assumed at Rs. 70 per sqft per month with back-up electricity, i.e. Rs. 108,500 per month for the proposed software house.

9.7 Human Resource Requirement

Following table provides details of human resource required for the project along with monthly salaries:

Table 7: Human Resource Requirement

Description	No. Of Employees	Salary per Employee Per Month (Rs)
CEO	1	200,000
Software Architect	2	150,000
Analysts	2	100,000
Developers	4	50,000
Accountant	1	25,000
Receptionist	1	20,000
Office Boy	1	12,000
Security guard	1	15,000
Total	13	

The CEO will focus on export marketing, monitoring products along with overall management of the unit. Whereas, business operations and other responsibilities will be managed by respective project staffs. Salaries of all employees are estimated to increase at 10% annually.

9.8 Revenue Generation

Following table provide assumption for revenues and generation of the proposed software house during first year of operation:

Table 8: Revenue Generation in First Year

Product Description	Unit	Sales Price (Rs./Unit)	First Year Sales Quantity (Hours)	First Year Sales Revenue (Rs)
Value Hours (50% Efficiency)	Hour	9,000	1,968	17,712,000



Total Sales Revenue				17,712,000
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9.9 Other Costs

Other essential costs to be borne by the company are; promotional expenses equal to 10% of revenue and communication expenses of 240,000 per annum due to the export orientation of the business.

10 CONTACT DETAILS

Contact Details of Institutions

Pakistan Software Houses Association for IT & ITES (P@SHA)

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Pakistan Software Export Board (PSEB)

Islamabad - Head Office 2nd Floor, Evacuee Trust Complex, F-5, Islamabad

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11 USEFUL LINKS

Small and Medium Enterprises Development Authority	www.smeda.org.pk		
Government of Pakistan	www.pakistan.gov.pk		
Ministry of Industries & Production	www.moip.gov.pk		
Government of Punjab	www.punjab.gov.pk		
Government of Sindh	www.sindh.gov.pk		
Government of Khyber Pakhtunkhwa	www.khyberpakhtunkhwa.gov.pk		
Government of Balochistan	www.balochistan.gov.pk		
Government of GilgitBaltistan	www.gilgitbaltistan.gov.pk		
Government of Azad Jamu & Kashmir	www.ajk.gov.pk		
Trade Development Authority of Pakistan (TDAP)	www.tdap.gov.pk		



Federation of Pakistan Chambers of Commerce and Industry (FPCCI)	www.fpcci.com.pk
Pakistan Software Export Board	www.psebi.org.pk
Pakistan Software Houses Association for IT and ITEs	www.pasha.org.pk



12 ANNEXURES

12.1 Income Statement

Calculations										SMEDA
Income Statement										
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Devianie	Year 1 17,712,000	Year 2 21,431,520	Year 3 25,717,824	Year 4	Year 5	Year 6 34,230,424	Year 7 37,653,466	Year 8	Year 9	Year 10 50,116,763
Revenue	17,712,000	21,431,520	25,/1/,824	28,289,606	31,118,567	34,230,424	37,053,400	41,418,813	45,560,694	50,116,763
Cost of sales										
Operation costs 1 (direct labor)	10,800,000	11,851,503	13,005,382	14,271,605	15,661,108	17,185,896	18,859,139	20,695,292	22,710,214	24,921,313
Operating costs 3 (direct electricity)	360,000	396,000	435,600	479,160	527,076	579,784	637,762	701,538	771,692	848,861
Total cost of sales	11,160,000	12,247,503	13,440,982	14,750,765	16,188,184	17,765,680	19,496,901	21,396,830	23,481,906	25,770,174
Gross Profit	6,552,000	9,184,017	12,276,842	13,538,842	14,930,383	16,464,744	18,156,565	20,021,983	22,078,788	24,346,589
General administration & selling expenses										
Administration expense	864,000	948,120	1,040,431	1,141,728	1,252,889	1,374,872	1,508,731	1,655,623	1,816,817	1,993,705
Administration benefits expense	86,400	94,812	104,043	114,173	125,289	137,487	150,873	165,562	181,682	199,371
Building rental expense	1,302,000	1,432,200	1,575,420	1,732,962	1,906,258	2,096,884	2,306,572	2,537,230	2,790,953	3,070,048
Electricity expense	60,000	66,000	72.600	79,860	87,846	96,631	106,294	116,923	128,615	141,477
Water expense	60,000	66,000	72,600	79,860	87,846	96,631	106,294	116,923	128,615	141,477
Softwares updation, purchase and Licencing renewal expenses	257,000	275,000	302,500	332,750	366,025	402,628	442,890	487,179	535,897	589,487
International Travelling expense	708,480	857,261	1,028,713	1,131,584	1,244,743	1,369,217	1,506,139	1,656,753	1,822,428	2,004,671
Communications expense (phone, fax, mail, internet, etc.)	240,000	264,000	290,400	319,440	351,384	386,522	425,175	467,692	514,461	565,907
Office expenses (stationary, entertainment, janitorial services, etc.	43,200	47,406	52,022	57,086	62,644	68,744	75,437	82,781	90,841	99,685
Insurance expense	-15,200	-77,100	52,622	-	02,011	-	-	02,701	70,011	-
Professional fees (legal, audit, consultants, etc.)	177,120	214,315	257,178	282,896	311,186	342,304	376,535	414,188	455,607	501,168
Depreciation expense	665,910	665,910	665,910	665,910	665,910	802,758	802,758	802,758	802,758	802,758
Amortization of pre-operating costs	53,806	53,806	53,806	53,806	53,806	002,730	002,750	002,750	602,750	002,730
Amortization of legal, licensing, and training costs	2,800	2,800	2,800	2,800	2,800	_				
Subtotal	6,291,916	7,130,783	8,090,205	8,823,817	9,630,483	10,597,719	11,573,043	12,645,494	13,824,743	15,121,429
Operating Income	260,084	2,053,234	4,186,636	4,715,025	5,299,900	5,867,025	6,583,522	7,376,489	8,254,044	9,225,160
Gain / (loss) on sale of office equipment	-	-	-	-	990,640	-	-	-	-	
Gain / (loss) on sale of Furniture & Fixtures	-	-	-	-	-	-	136,472	-	-	
Earnings Before Interest & Taxes	260,084	2,053,234	4,186,636	4,715,025	6,290,540	5,867,025	6,719,994	7,376,489	8,254,044	9,225,160
Interest on short term debt	-	-	-	-	-	-	-	-	-	-
Interest expense on long term debt (Project Loan)	338,763	284,680	221,410	147,394	60,805	-	-	-	-	-
Interest expense on long term debt (Working Capital Loan)	142,369	119,640	93,050	61,944	25,554		<u> </u>	<u> </u>	_	
Subtotal	481,132	404,320	314,460	209,338	86,359	-	-	-	-	-
Earnings Before Tax	(221,048)	1,648,914	3,872,176	4,505,687	6,204,181	5,867,025	6,719,994	7,376,489	8,254,044	9,225,160
Tax	_	177,283	690,544	874,206	1,393,963	1,282,607	1,574,497	1,804,271	2,111,415	2,451,305
NET PROFIT/(LOSS) AFTER TAX	(221,048)	1,471,632	3,181,632	3,631,481	4,810,219	4,584,418	5,145,497	5,572,219	6,142,629	6,773,855

12.2 Balance Sheet

Calculations											SMEDA
Balance Sheet											
	¥7 0	\$7 1	¥7 2	W 2	¥7 4	¥7	V (¥7 #	¥7 0	Year 9	¥7 10
Assets	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Current assets											
Cash & Bank	1,225,694	481,960	1,999,045	5,041,035	8,443,459	9,762,082	14,922,342	20,620,989	26,721,398	33,364,760	42,297,671
Accounts receivable	1,223,054	727,890	804,319	968,822	1,109,742	1,220,716	1,342,787	1,477,066	1,624,773	1,787,250	1,965,975
Pre-paid building rent	651,000	716,100	787,710	866,481	953,129	1,048,442	1,153,286	1,268,615	1,395,476	1,535,024	1,703,773
Total Current Assets	1,876,694	1,925,950	3,591,074	6,876,338	10,506,329	12,031,240	17,418,416	23,366,670	29,741,647	36,687,034	44,263,647
	, ,		<u> </u>								
Fixed assets											
Furniture & fixtures	1,705,900	1,535,310	1,364,720	1,194,130	1,023,540	852,950	682,360	511,770	341,180	170,590	-
Office equipment	2,476,600	1,981,280	1,485,960	990,640	495,320	3,160,839	2,528,671	1,896,503	1,264,336	632,168	-
Total Fixed Assets	4,182,500	3,516,590	2,850,680	2,184,770	1,518,860	4,013,789	3,211,031	2,408,273	1,605,516	802,758	
Intangible assets											
	269.032	215,225	161 410	107.612	53,806						
Pre-operation costs	269,032 14,000	11,200	161,419 8,400	107,613 5,600	2,800	-	-	-	-	-	-
Legal, licensing, & training costs Total Intangible Assets	283,032	226,425	169,819	113,213	56,606			-		-	
TOTAL ASSETS	6,342,226	5,668,966	6,611,573	9,174,321	12,081,796	16.045.029	20,629,447	25,774,944	31,347,162	37,489,792	44,263,647
TOTAL ASSETS	0,342,220	5,008,900	0,011,573	9,174,321	12,081,790	10,045,029	20,029,447	25,774,944	31,347,102	31,469,192	44,203,047
Liabilities & Shareholders' Equity											
Current liabilities											
Accounts payable		-	-	-	-	-	-	-	-	-	-
Total Current Liabilities	-	-	-	-	-	-	-	-	-	-	_
Other liabilities											
Long term debt (Project Loan)	2,232,766	1,914,365	1,541,882	1,106,128	596,358	_	_	_	_	_	_
Long term debt (Working Capital Loan)	938,347	804,535	647,995	464,864	250,627		_	_			
Total Long Term Liabilities	3,171,113	2,718,901	2,189,876	1,570,992	846,985						
	-, -,	772	, ,	7 7							
Shareholders' equity											
Paid-up capital	3,171,113	3,171,113	3,171,113	3,171,113	3,171,113	3,171,113	3,171,113	3,171,113	3,171,113	3,171,113	3,171,113
Retained earnings		(221,048)	1,250,584	4,432,216	8,063,697	12,873,916	17,458,334	22,603,831	28,176,049	34,318,679	41,092,533
Total Equity	3,171,113	2,950,065	4,421,697	7,603,329	11,234,810	16,045,029	20,629,447	25,774,944	31,347,162	37,489,792	44,263,647
TOTAL CAPITAL AND LIABILITIES	6,342,226	5,668,966	6,611,573	9,174,321	12,081,796	16,045,029	20,629,447	25,774,944	31,347,162	37,489,792	44,263,647

12.3 Cash Flow Statement

Calculations											SMEDA
Cash Flow Statement											
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Operating activities											
Net profit		(221,048)	1,471,632	3,181,632	3,631,481	4,810,219	4,584,418	5,145,497	5,572,219	6,142,629	6,773,855
Add: depreciation expense		665,910	665,910	665,910	665,910	665,910	802,758	802,758	802,758	802,758	802,758
amortization of pre-operating costs		53,806	53,806	53,806	53,806	53,806	-	-	-	-	-
amortization of training costs		2,800	2,800	2,800	2,800	2,800	-	-	-	-	-
Accounts receivable		(727,890)	(76,428)	(164,503)	(140,920)	(110,974)	(122,072)	(134,279)	(147,707)	(162,477)	(178,725)
Pre-paid building rent	(651,000)	(65,100)	(71,610)	(78,771)	(86,648)	(95,313)	(104,844)	(115,329)	(126,861)	(139,548)	1,535,024
Cash provided by operations	(651,000)	(291,522)	2,046,110	3,660,875	4,126,430	5,326,448	5,160,260	5,698,647	6,100,408	6,643,362	8,932,912
Financing activities											
Project Loan - principal repayment		(318,401)	(372,484)	(435,753)	(509,770)	(596,358)	-	-	-	-	-
Working Capital Loan - principal repayment		(133,812)	(156,541)	(183,131)	(214,237)	(250,627)	-	-	-	-	-
Additions to Project Loan	2,232,766	-	-	-	-	-	-	-	-	-	-
Additions to Working Capital Loan	938,347	-	-	-	-	-	-	-	-	-	-
Is suance of shares	3,171,113	-	-	-	-	-	-	-	-	-	-
Purchase of (treasury) shares											
Cash provided by / (used for) financing activities	6,342,226	(452,212)	(529,025)	(618,884)	(724,007)	(846,985)	-	-	-	-	-
Investing activities											
	(4.465.522)					(2.160.920)					
Capital expenditure	(4,465,532)	-	-	-	-	(3,160,839)	-	-	-	-	-
Acquisitions	(4.465.522)					(2.160.920)					
Cash (used for) / provided by investing activities	(4,465,532)	-	-	-	-	(3,160,839)	-	-	-	-	-
NET CASH	1,225,694	(743,735)	1,517,085	3,041,991	3,402,423	1,318,623	5,160,260	5,698,647	6,100,408	6,643,362	8,932,912

13 KEY ASSUMPTION

13.1 Operating Assumptions

Working hours per day	8
Days operational per year	246

13.2 Revenue Assumprions

Starting capacity utilization	50%
Annual Installed Capacity (lines)	3,936
Annual Operational Capacity	1,968
Price per hour (Rs.)	9,000

13.3 Financial Assumptions

Project Life	10 Years
Debt	50%
Equity	50%
Debt Tenure	5 Years
Interest rate	16%

