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FINANCIAL VIABILITYON IMPLEMENTING NEW MACHINE TO K-TECH ENGINEERING PVT LIMITED, COIMBATORE

by

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Under the guidance of

Assistant Professor

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A PROJECT REPORT

submitted

In partial fulfilment of the requirements

for the award of the degree

of

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Department of Management Studies

Kumaraguru College of Technology

(An autonomous institution affiliated to Anna University of Technology, Coimbatore)

Coimbatore – 641 049

November 2011

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BONAFIDE CERTIFICATE

Certified that this project report titled **"FINANCIAL VIABILITYON IMPLEMENTING NEW MACHINE TO K-TECH ENGINEERING PVT LIMITED, COIMBATORE"** is the bonafide work of **Miss. Sowbashini. B, 10MBA55** who carried out the project under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

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Submitted for the summer Project viva-voce examination held on ..18/11/11.....

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PROJECT COMPLETION CERTIFICATE *

This is to certify that, Miss. B. Sowbashini Roll No. 10MBA55,a student of KCT Business School, Kumaraguru College of Technology, and Coimbatore had undergone a Project entitled

Financial Viability on Implementing New Machine to K-Tech Engineering, Coimbatore
Between 27.06.11 and 06.08.11

During the tenure, her performance was **Very Good**

for K-tech engineering

Manager

Signature of the
Organization Guide

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I am deeply obliged to **Mr. R. JAGADESAN** (MANAGER) for his exemplary guidance and support without whose help this project would not have been success.

I would like to place on record my sincere gratitude and appreciations to my project guide Asst. Prof. Sangeetha. S (Sr) KCT Business School, for his kind cooperation and guidance which enabled me to complete my project.

EXECUTIVE SUMMARY

Financial viability is about being able to generate sufficient income to meet operating income ,debt commitments and where applicable , to allow while maintaining service levels.

Assessment of Financial Viability is an integrated process. The main objective of this project is to analyse the financial viability on implementing "FASTENER HEADING AND THREADING MACHINE" to K-TECH ENGINEERING COMPANY and to give suggestions for the implementation.

The secondary data has been used for the analysis. The tools used for the analysis are Financial Tools.

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INTRODUCTION

Screw Threading and heading machine is used for manufacturing screws for wooden houses and construction. Screw heading used for the manufacturing of screws using wire of Aluminium and Threading for that finished screws has been done in the Threading machine. The checking of correctness measurements has been checked in Vernier Calliper and later it has been in Quality Control Machine.

MAJOR PROCESS:

- δ BOLT
- δ SCREWS
- δ RIVETS
- δ TAPER ROLLER & HEADING

MACHINE SPECIFICATION:

The premium quality "HARDNER SCREW HEADING AND THREADING MACHINE" that gives high-volume production. The Heading Machine manufactured, exported and supplied, is extremely durable as it is made from high grade raw material. It is designed using the advanced technology; hence it is maintenance free and has long functional life.

ADVANTAGES:

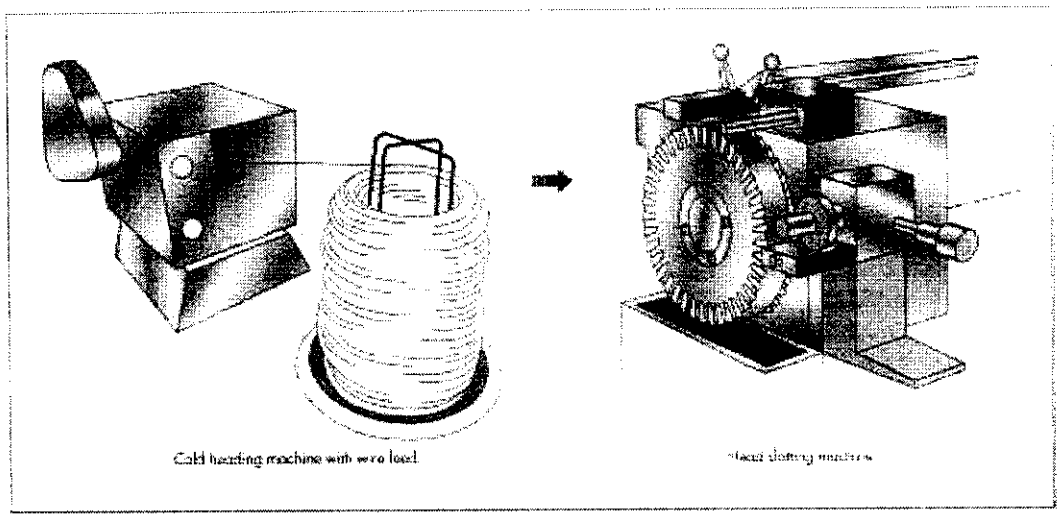
1. The machine is extremely safe to use as the Cut-off and knock-out mechanism has various safety devices. Hence, even in the case of any irregular functioning, it avoids the accidents.
2. The heading slide has a mobile design that carries two heading punches for the processes of straightening and finishing.
3. The two punches & dies are easily adjustable at the accessible points and can be operated manually.
4. The machine has the vertical wire straightening bearing rollers designer equipment that enables straight wire feeding facilitating the processing of long bolt.
5. The various parts of the machine such as all rollers, roller pins, cames and are made high grade steel which is properly heat-treated and grounded.

MAJOR RAW MATERIALS:

- SS WIRE
- COPPER WIRE
- STAINLESS STEEL
- NICKEL
- BRASS

PROCESS:

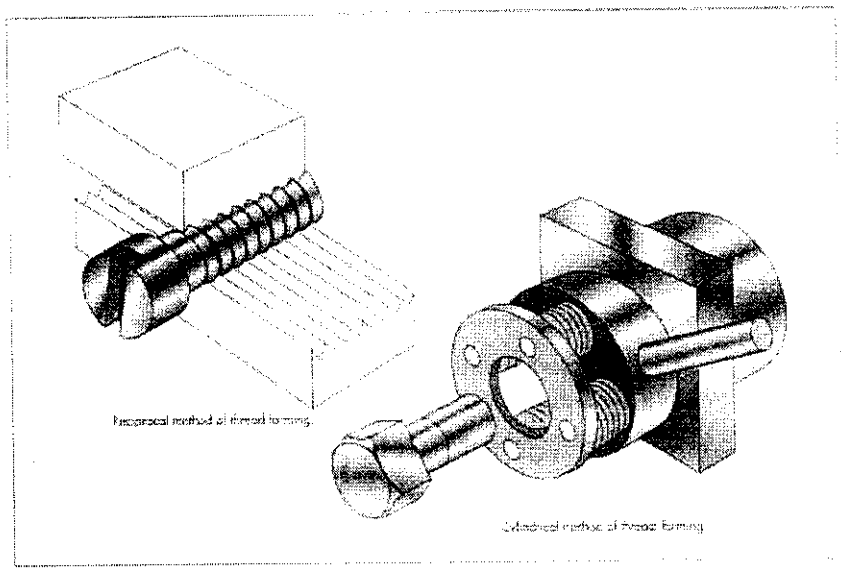
Raw material is got from the suppliers Screws are generally made from low to medium carbon steel wire, but other tough and inexpensive metals may be substituted, such as stainless steel, brass, nickel alloys, or aluminum alloy. Quality of the metal used is of utmost importance in order to avoid



The cold heading machine cuts a length of wire and makes two blows on the end, forming a head. In the head slotting machine. A circular cutter slots the screws as the wheel revolves.

THREAD ROLLING:

- Once cold headed, the screw blanks are automatically fed to the thread-cutting dies from a vibrating hopper. The hopper guides the screw blanks down to the dies.
- The blank is then cut using one of three techniques. In the reciprocating die, two flat dies are used to cut the screw thread. One die is stationary, while the other moves in a reciprocating manner, and the screw blank is rolled between the two.When a centerless cylindrical die is used, the screw blank is rolled

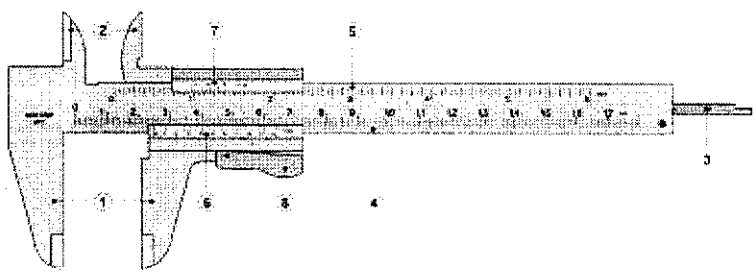


- Between three round dies in order to create the finished thread. The final method of thread rolling is the planetary rotary die process. It holds the screw blank stationary, while several die-cutting machines roll around the blank.

QUALITY INSPECTION:

Quality assistant duty is to check the screws quality. Random samples are taken at equal intervals from the output and checked its diameter and length using Vernier Caliper. Incase of any defects corrections are done in the process and made sure of producing good quality screws according to customer specifications.

VERNIER CALIPER:



Then the screws are been polished using mould polishing kit machine. Polishing is done for avoiding rust forming in screws. After the polishing, screws are kept in open air for drying. Then screws are packed in wooden boxes and supplied to the customer.

REVIEW OF LITERATURE:

Ray Martin in the article "Internal Rate of Return Revisited" explains IRR Yields the same decision as does NPV except under some circumstances the present few limitations in practice. They are best used together NPV and IRR gives consistent answers if handled and viewed properly. Together both gives indication of risk as well as return. IRR is not affected by the size of cash flows. IRR is not affected by the size of cash flows.IRR is useful alone in virtually all time value of money problems.

Richard S. Ruback in the article "Capital cash flows: A simple approach to valuing Risky cash flows" explains Capital Cash Flow(CCF)methods of valuing risky cash flows. The CCF method is substantially easier to apply and a result is less prone to error because CCF method puts the interest tax shields in the cash flows and discounts by a before-tax cost of assets. The method is closely related to the adjusted present value method.

Madhav V.Rajan,Stefan Reichelstein,Mark T Sosiman in the article "Conservatism, Growth and Return on Investment" explain s Return on Investment(ROI) is widely regarded as a key measure of firm profitability. The accounting literature has long recognized that ROI will generally not reflect economic profitability, as determined by internal rate of return (IRR) of a firm's investment projects. In particular, it has been noted that accounting conservatism may result in an upward bias of ROI, relative to the underlying IRR. Examining both theoretically empirically the behaviour of ROI as a function of two variables: past growth in new investments and accounting conservatism. Higher growth is shown to result in lower levels of ROI provided the accounting is conservative, while the opposite is generally true for liberal accounting policies. Conversely, more conservative accounting will increase ROI provided growth in new investments grew at sufficiently high rates. Taken together, conservatism and growth are "substitutes" in their joint impact on ROI.

Appuhami,B.A Ranjith in their project "The impact of firms capital expenditure on working capital management : An Emperical Study across industries in Thailand" have explained the purpose of this research is to investigate the impact of firm capital expenditure on their working capital management. The author used the data collected from listed companies in the Thailand stock exchange. The study used shulman and cox's(1985) Net liquidity balance and working capital measurement and developed multiple regression models. The empirical research found that firms capital expenditure has a significant impact on the working capital management, which is consistent with findings of previous similar researches. The findings enhance the knowledge base of working capital management and will help companies manage working capital effectively in growing situations associated with capital expenditure.

Wayne Guay, S.PKothari, Susanshu in their article "Properties of implied cost of Capital using analysis forecasts" explains the influence of measurement error in analysts' forecasts on the accuracy of implied cost of capital estimates from various implementation of the "implied cost of capital" approach relies on analysis short and long term earnings forecasts as proxies for the implied discount rate that equates the present value of the expected future payoffs to the current stock price. The predictable error in the implied cost of capital estimates resulting from analysts forecasts that are sluggish with respect to information in past stock returns. And purpose two methods to mitigate the influence of sluggish forecasts on the implies cost of capital estimates. These methods substantially improve the ability of the implied cost of capital estimates to explain cross sectional variation in future stock returns, which is consistent with the corrections being effective in mitigating the error in the estimates due to analysts sluggishness.

STATEMENT OF THE PROBLEM:

To Analyze the Financial viability on "Implementing New Machine" to K-TECH Engineering Company and assess the resource rephrase and its relative cost benefit analysis.

PROFILE OF K-TECH ENGINEERING COMPANY:

The beginning of K-TECH ENGINEERING in 1988 first attempt in producing Tools Components and Equipments using an limited facility. Currently they are manufacturing multiple products with greater customer satisfaction.

The Company always keeps pace with the changing scenario and seldom fails in coming up with outstanding solutions every time. The unerring teamwork, which goes into the manufacture of every product, has brought in impeccable recognisation for the company as well as its products – worldwide.

TURN OVER:

The Sales Turnover of Financial Year 09-10 is RS 100cr.

CHAIRMAN:

Mr.R.Nanda Kumar- MBA

VISION:

To be the industry leader providing best class in class of their quality products to individual and institutional customers and societies in choosen markets.

QUALITY POLICY:

K-TECH ENGINEERING COMPENY strives to achieve customer satisfaction by supplying the best quality &cost effective products on a timely manner by continously improving quality systems with effective team work.

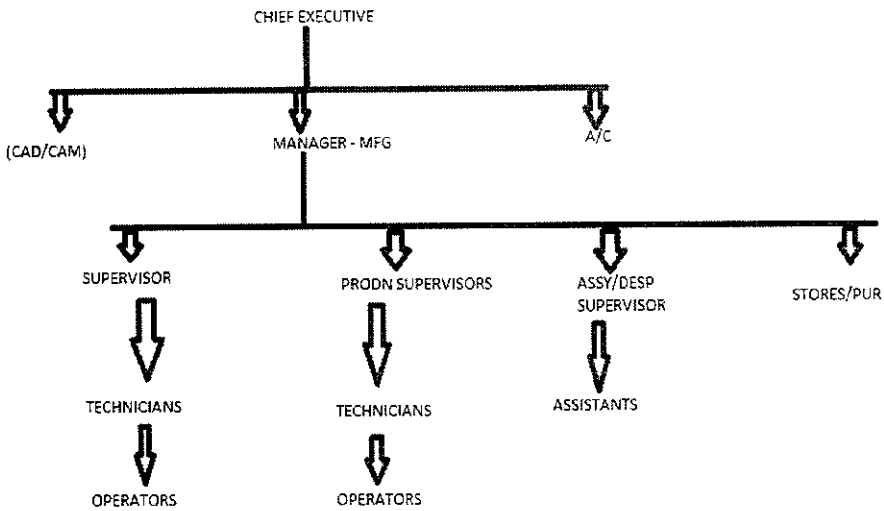
QUALITY OBJECTIVE:

They set the specific and quantitative goals for several activities like

- Zero Rejections
- 100% Schedule adherence
- Multi skill
- 100% Customer Satisfaction

ORGANIZATION STRUCTURE:

- φ Chief Executives
- φ Assistants
- φ Supervisors
- φ Managers
- φ Accountant
- φ Technicians
- φ CAD
- φ Solid Work
- φ Labourers
- φ Assistant Supervisors
- φ Operators



EMPLOYEES:

K-TECH has a strong people oriented work culture that can be seen and felt across all its member concerns. At k-TECH people across the group were companies were very much interactive getting to know each other individually share their common experiences. There are 60 employees in their manufacturing sector.

Recruitment process is through Internal References and Advertisements.

PLANT CAPACITY:

The company designed such a way each department section is clearly divided with sufficient space without any inconvenient to the systems persons and machines.

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PRODUCTS:

- Manufacture of press tools
- Pressure Die Cast Dies
- Production of Pressed Parts
- Deep Drawn Components
- Machined Die Cast Shells
- Injection moulds and plastic components
- Telecom Connectors and
- Tea leaf harvesting machines

AWARDS:

An ISO: 9001:2000 certified for quality control of their products

FUTURE PROSPECTS:

- To manufacture coffee leaf harvester
- To manufacture Black Screws.

SPECIALISATION OF THE EXISTING MACHINE:

ADVANTAGES:

- It was a manual correction machine.
- Per Day its capacity of producing was 25000 screws
- The Machine Which Produce both Heading and Threading Screws.
- In This Machine the life cycle of Die was 1 lakh.
- The accuracy level can be checked through Vernier calliper and Quality Control Machine.
- It does not create any hazards to the workers
- For Past 3 Years the machine has produced 25, 00,000 Screws were produced.
- The machine earned 75,00,0000 lakh profits to the company.

DISADVANTAGES:

- Daily during production there will be some problem that were exist
- While Power gets OFF the production process gets over
- POWER ON the worker has to assemble the parts again it takes more than 30 mints for recovery.
- Only the experts who have more experience able to correct and make Recovery.
- Some Times it makes Gauges in screws it affects the production.
- The main problem was it was a man made so the possibility of error is high.
- Someone should always be available.

SPECIALISATION OF THE NEW MACHINE:

ADVANTAGES:

- IT was a CNC machine.
- Full of computer Installated Machine.
- Per Day the capability of producing was 75,000 screws.
- Per hour it can able to produce 9000 screws.
- When Power Off and Power On it won't spoil the production.
- The accuracy level been installed so need for checking in Quality Control and Vernier Calliper.
- Rate of Recovery is soon
- NO need For Plating
- Plating has been done without Guages.

DISADVANTAGES:

- It takes 1 Hp Electricity.
- Per Day It costs Rs. 100 for Electricity.
- The cost of the Machine is High
- Once Power off While Power On have to install the Accuracy Once Again.
- Being A CNC machine very sensitive to handle.
- Once the problem occurs it needs high cost for Recovery.

OBJECTIVES OF THE STUDY

PRIMARY OBJECTIVE:

To study the Financial Viability on Implementing New Machines for K-Tech Engineering Company.

SECONDARY OBJECTIVES:

- To analyse whether the implementation of new machine .will be productive.
- Comparing the existing machine and implementation of new machine.
- To compare and analyse the cost and productivity of existing and new machinery.
- To analyse whether changes will adopt to the new machinery.

SCOPE OF THE STUDY:

SCOPE OF THE STUDY:

Financial Viability is examining the income generating capabilities of the project. It also considers to an extent of financial obligations to be met by an organisation.

ASSUMPTIONS:

The study limits to 12.75% as interest for existing and new machinery.

INTRODUCTION TOOLS:

FINANCIAL VIABILITY:

Financial viability is the ability of an entity to continue to achieve its operating objectives and fulfil its mission over the long term. It is about being able to generate sufficient income to meet operating payments, debt commitments and where applicable to allow growth while maintaining service levels.

TOOLS FOR ANALYSIS:

NET PRESENT VALUE:

The difference between the present value of cash inflows and the present value of cash outflows.NPV is used in capital budgeting to analyze the profitability of an investment or project.

NPV analysis is sensitive to the reliability of future cash inflows that an investment or project will yield.

Net present value = present value of all cash inflows – present value of all outflows.

PROFITABILITY INDEX:

Profitability Index (PI) also known as profit investment ratio (PIR) and value investment ratio(VIR), is the ratio of investment to payoff of a proposed project .It is a useful tool for ranking projects because it allows you to quantify the amount of value created per unit of investment.

The ratio is calculated as follows

$$\text{Profitability Index} = \frac{\text{Present value of cash Inflow}}{\text{Present value of cash outflow}}$$

Assuming that the cash flow calculated does not include the investment made in the project, a profitability index of 1 indicates breakeven. Any value lower than one would indicate that the project's PV is less than the initial investment . AS the value of the profitability index increases, so does the financial attractiveness of the proposed project.

Rules for selection or rejection of a project:

- If PI > 1 then accept the project.
- If PI < 1 then reject the project.

INTERNAL RATE OF RETURN:

The internal rate of return on an investment or project is the annualized effective compounded return rate or discount rate that makes the net present value of all cash flows(both positive and negative) from a particular investment equal to zero.

IRR of an investment is the interest rate at which the net present value of the benefits (positive cash flows) of the investment.

Internal rates of return are commonly used to evaluate the desirability of investments or projects. The higher a project's internal rate of return, the more desirable it is to undertake the project with the highest. IRR would probably consider the best and undertaken first.

A Firm (or individual) should, in theory, undertake all projects or investments available with positive IR Rs. Investment may be limited by availability of funds to the firm and/or by the firm's capacity or ability to manage numerous projects.

PAYBACK PERIOD:

PAYBACK PERIOD is the length of time required for cumulative incoming returns to equal the cumulative costs of an investment usually measured in years.

Other things being equal, the investment with the shorter payback period is considered the better investment. The shorter payback period is preferred because:

- The investment costs are recovered sooner and are available again for further use.
- A shorter payback period, the more uncertain are the positive returns. For this reason, payback period is often used as a measure of risk, or a risk-related criterion that must be met before funds are spent.

RESEARCH METHODOLOGY:

RESEARCH DESIGN:

A research design is arrangement of conditions for collection and analysis of data in a number that aims to combine relevance to the research purpose with economy in produce.

Financial Viability on Implementing New Machines uses Analytical Research Design

.

METHOD OF DATA COLLECTION:

- φ The secondary data has been collected
- φ Secondary data means data that are already available i.e they refers to the data which have already been collected and analyzed by someone else.

TOOLS AND TESTS USED:

The tools for analyzing the data are as follows:

FINANCIAL TOOLS:

- Net present value
- Internal rate of return
- Profitability Index
- Payback Period

DATA ANALYSIS AND INTERPRETATION:

COST OF EXPENDITURE FOR EXISTING MACHINE:

PARTICULARS	UNITS	AMOUNT (Rs)
Cost Of Machine		Rs.1400000
Transportation & Labour Cost		RS.1,00,000
Demo Charges		RS 5000
Interest Rate@12.75%		
Electricity		Rs.100
Shipment	1 TON	Rs.5000
Air Transit	1 TON	Rs. 25000
Salary		Rs.20000
Plating	1 TON	Rs.3000
SS Wire	200 TON	Rs.3000000
Cost of screw		Rs.3

For 1 Kg =100 Screws

1 Ton = 10000 Screws

- Plant capacity of the machine was 100%
- Cost of the screw was Rs.3
- Guaranty for the machine is for 5 Yrs.
- 2000000 screws were produced.

SECONDARY DATA HAS BEEN COLLECTED.

COMPARITIVE COST STATEMENT OF EXISTING MACHINE DURING THE YEAR 2008 - 2011

YEARS	2008		2009		2010		2011	
PARTICULARS	**UNITS (In Tons)**	**TOTAL AMOUNT (In Rs)**	**UNITS (In Tons)**	**TOTAL AMOUNT (In Rs)**	**UNITS (In Tons)**	**TOTAL AMOUNT (In Rs)**	**UNITS (In Tons)**	**TOTAL AMOUNT (In Rs)**
Electricity		36000		36000		36000		36000
Shipment	50	250000	40	200000	50	250000	50	250000
Air Transit							10	250000
Salary		180000		180000		240000		360000
Plating	50	150000	40	120000		1200000	50	150000
Ss Wire	50	500000	40	400000	50	500000	1 60	15000 900000
Total Cost		1200000		1200000		1625000		2400000
NET INCOME		**3840000**		**264000**		**515000**		**4540000**

COST OF EXPENDITURES FOR NEW MACHINE:

PARTICULARS	UNITS (In Tons)	TOTAL AMOUNT (In Rs)
Cost Of Machine		2500000
Interest Rate@12.75%		
Electricity(Per Day)		100
Shipment	1	5000
Air Condition	1	50000
Salary		10000
Plating	NIL	NIL
SS Wire	1	15000
Cost of 1 screw		3

- Production of Screws per Hour 9000 screws.
- The Warranty for this machine was 10 Years.
- The production was double times greater than the existing machine
- Interest rate at 12.75%
- CNC machine fully computer Installated programme.

NET INCOME OF IMPLEMENTATION OF NEWMACHINE:

PARTICULARS	UNITS (In Tons)	2012 TOTALAMOUNT (In Rs)	2013 TOTAL AMOUNT (In Rs)
Electricity		360000	360000
Shipment	70	350000	350000
Air Transit	-	-	-
Salary		240000	240000
Plating	70	-	-
Ss Wire	70		350000
Cost Of Screw		2800000	2800000
NET INCOME		**1850000**	**1850000**

PARTICULARS	UNITS (In Tons)	2012 TOTALAMOUNT (In Rs)	2013 TOTALAMOUNT (In Rs)
Electricity		360000	360000
Shipment	70	350000	350000
Air Transit	-	-	-
Salary		240000	240000
Plating	70	-	-
SS Wire	70		350000
Cost Of Screw		2800000	800000
NET INCOME		**1850000**	**1850000**

TABLE SHOWING NET PRESENT VALUE (NPV) IN EXISTING MACHINE:

YEAR	DISCOUNT RATE @ 12.75%	NET INCOME (In Rs)	PRESENT VALUE OF CASH INFLOWS (In Rs)
1	0.885	580000	513300
2	0.783	264000	206712
3	0.693	515000	356895
4	0.613	454000	278302

TABLE SHOWING THE VALUES OF NET PRESENT VALUE IN IMPLEMENTATION OF NEW MACHINE:

YEAR	DISCOUNT RATE @ 12.75%	NET INCOME (In Rs)	PRESENT VALUE OF INFLOWS (In Rs)
1	0.885	1850000	1637250
2	0.783	1850000	1448550

For Existing Machine:

Net Present Value = Present Value of Cash Inflows - Present Value of Cash Outflows

= Rs1355209 - Rs1500000

= Rs - 1447910

For New Machine:

Net Present Value = Rs 3085800 – Rs 2500000

NPV = Rs 585800

INFERENCE:

The above table shows that the Net Present Value for the Implementation of New Machine is Positive so it is suggested for the Company to Implement the New Machine.

TABLE SHOWING THE VALUES OF PROFITABILITY INDEX ON EXISTING MACHINE

YEAR	Discount Rate @12.75%	Net Income (In Rs)	CASH INFLOWS (In Rs)
2008	0.885	580000	513300
2009	0.783	264000	206712
2010	0.693	551000	356895
2011	0.613	454000	278302

TABLE SHOWING THE VALUES OF PROFITABILITY INDEX IN IMPLEMENTATION OF NEW MACHINE

YEAR	Discount Rate @ 12.75%	Net Income (In Rs)	Cash Inflows (In Rs)
2012	0.885	1850000	1637250
2013	0.783	1850000	1448550

Existing Machine:

$$\text{PROFITABILITY INDEX} = \frac{\text{PRESENT VALUE OF CASH INFLOW}}{\text{PRESENT VALUE OF CASH OUTFLOW}}$$

$$= \frac{1355209}{1500000}$$

PROFITABILITY INDEX = 0.9 times

New Machine:

$$\text{PROFITABILITY INDEX} = \frac{\text{PRESENT VALUE OF CASH INFLOW}}{\text{PRESENT VALUE OF CASH OUTFLOW}}$$

$$= \frac{3085800}{2500000}$$

$$= 1.2 \text{ times}$$

INFERENCE:

The above table shows the Profitability Index greater than 1 so it is advisable for the company to implement the new machine.

TABLE SHOWING THE VALUES OF PAYBACK PERIOD IN EXISTING MACHINE:

YEARS	NET INCOME (In Rs)	CUMULATIVE INCOME (In Rs)
2008	580000	580000
2009	264000	844000
2010	515000	1359000
2011	454000	1813000

TABLE SHOWING THE VALUES OF PAYBACK PERIOD IN IMPLEMENTING NEW MACHINE

YEARS	NET INCOME (In Rs)	CUMULATIVE INCOME (In Rs)
2012	1850000	1850000
2013	1850000	3700000

Payback period = Minimum no. of years + Preceding and succeeding cash flow

Current Year of Cash Flow

EXISTING MACHINE:

Pay Back Period = 4+ [141000 / 4154000]

= 4 year 3 months

IMPLEMENTING NEW MACHINE:

Pay Back Period = 2+ [650000 / 1850000]

= 2 years 4 months

INFERENCE:

The above Table Shows That the Investment can be taken for the Existing Machine after 4 Years 4 Months and for the Implementation of New Machine can be taken after 2 Years 4 Months.So it is advisable for the company to implement the New Machine.

TABLE SHOWING THE VALUES OF INTERNAL RATE OF RETURN FOR EXISTING MACHINE

YEAR	DISCOUNT RATE @ 5%	NET INCOME (In Rs)	PRESENT VALUE (In Rs)
1	0.952	5800000	552220
2	0.907	264000	206712
3	0.864	515000	356895
4	0.823	454000	278302

YEAR	DISCOUNT RATE @ 10%	NET INCOME (In Rs)	PRESENT VALUE (In Rs)
1	0.909	527220	527220
2	0.783	206712	206712
3	0.693	356895	356895
4	0.613	278302	278302

TABLE SHOWING THE VALUES FOR INTERNAL RATE OF RETURN FOR IMPLEMENTING NEW MACHINE:

YEAR	DISCOUNT RATE @ 35%	NET INCOME (In Rs)	PRESENT VALUE (In Rs)
1	0.741	1850000	1370850
2	0.549	1850000	1015650

YEAR	DISCOUNT RATE @ 30%	NET INCOME (In Rs)	PRESENT VALUE (In Rs)
1	0.769	1850000	1422650
2	0.549	1850000	1095200

$$IRR = r + \frac{\text{(present value- Investment)}}{\text{PVout-PVout2}}$$

EXISTING MACHINE:

IRR = 12.4%

NEW MACHINE:

IRR = 39.5%

INFERENCE:

The above table shows that the Internal Rate of Return of New Machine gives more than Existing Machine Of 39.5%

NET PRESENT VALUE:

For Existing Machine:

Net Present Value = Present Value of Cash Inflows - Present Value of Cash Outflows

= Rs1355209 - Rs1500000

= Rs - 1447910

For New Machine:

Net Present Value = Rs 3085800 – Rs 2500000

NPV = Rs 585800

INFERENCE:

NPV shows the positive values to the New Machine so the advice for the company to implement the New Machine.

PROFITABILITY INDEX:

Existing Machine:

$$\text{PROFITABILITY INDEX} = \frac{\text{PRESENT VALUE OF CASH INFLOW}}{\text{PRESENT VALUE OF CASH OUTFLOW}}$$

$$= \frac{1355209}{1500000}$$

PROFITABILITY INDEX = 0.9 times

New Machine:

$$\text{PROFITABILITY INDEX} = \frac{\text{PRESENT VALUE OF CASH INFLOW}}{\text{PRESENT VALUE OF CASH OUTFLOW}}$$

$$= \frac{3085800}{2500000}$$

= 1.2 times

INFERENCE:

Profitability Index shows greater than 1 in New- Machine and Profitability Index shows lesser than 1 Existing Machine So it is Advisable for the Company to Implement the New Machine.

PAY BACK PERIOD:

$$\text{Payback period} = \text{Minimum no. of years} + \frac{\text{Preceding and succeeding cash flow}}{\text{Current Year of Cash Flow}}$$

EXISTING MACHINE:

Pay Back Period = 4+ [141000 / 4154000]

= 4 year 3 months

IMPLEMENTING NEW MACHINE:

Pay Back Period = 2+ [650000 / 1850000]

= 2 years 4 months

INFERENCE:

It takes 2 years 4 months to get back their investments so suggesting the company to implement this new Machine.

INTEREST RATE OF RETURN:

$$IRR = r + \frac{(\text{present value} - \text{Investment})}{PVout - PVin}$$

EXISTING MACHINE:

IRR = 12.4%

NEW MACHINE:

IRR = 39.5%

INFERENCE:

The Company has to earn at least the minimum of 39.5% in order to meet its obligations while Implementing New Machine.

FINDINGS:

- As the Net Present Value is positive with net cash flow of Rs.585800, it is suggested the company to implement the new machine.
- As the Profitability Index shows values greater than 1 it is advisable for the company to go for the Implementation of New Machine.
- It takes 2years four months for the company to get back their Investments.
- Profitability will be triple times higher than the Existing Machine so it is advisable for the company to implement the New Machine to the Company.
- Plating is not necessary for this New Machine.
- The Relative Cost Benefits have been analyzed.
- The Rate of Productivity is more so it able to meet the demands for the screws.
- Checking Control of Screws in Quality control and Vernier Calliper are not necessary for new machinery.

SUGGESTIONS:

The project is Financially Viable for the Organization. Since the finance tools that are used shows the positive implications towards the installation of the project the company should definitely aim at achieving rate of return more than 39.5% as the Internal Rate of return is prescribed Rate.

Though Net Present Value is positive the extent of benefit in the Third Year is very marginal for which the company can attain more customers and the production process will be more charges for plating will not incur in addition.

CONCLUSION:

The project will be a milestone for the company. IMPLEMENTATION OF NEW MACHINE is Financially Viable .The Company can firmly decide on implementing this machine by keeping in mind the constraints like consistency in rate the productivity will be triple times higher than the Existing Machine. Being

CNC machine increase the productivity.

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