BIJUPATNAIK INSTITUTE OF IT & MANAGEMENT STUDIES

SUMMER INTERNSHIP REPORT 2021

STUDENT NAME –
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BPUT REGD. NO –
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FACULTY GUIDE-

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Associate Professor(OM)

Biju Patnaik Institute of Information Technology & Management Studies

BIITM

Estd. 1999

"STUDY AND IMPLEMENTATION OF ERP MODEL IN PROJECT MANAGEMENT SOFTWARE."

BY
MIR SAFKAT ALI

UNDER THE GUIDANCE OF
PROF ANANTA PRASAD NANDA.
Associate Professor (OM)
SUBMITTED TO
BIJU PATNAIK INSTITUTE OF IT & MANAGEMENT
YEAR 2020-2022

Biju Patnaik Institute of Information Technology & Management Studies

Estd. 1999

<u>DECLARATION</u>

I hereby declare that the Summer Internship project entitled **"STUDY AND IMPLEMENTATION OF ERP MODEL IN PROJECT MANAGEMENT SOFTWARE "** submitted by me as a partial fulfilment for the award of Master of Business Administration to **Biju Patnaik Institute of information technology and Management** , Bhubaneswar is original and genuine work carried out by me**.**

Date:

Place: Bhubaneswar

MIR SAFKA ALI

INTERNAL GUIDE

CERFITICATE

This to certify that the repot of the project submitted is the outcome of the project work entitled "**STUDY ON ERP MODULE OF MANUFACTURING SECTOR**" "carried out by **MIR SAFKAT ALI** bearing 2006258114 carried by under my guidance and supervision for the award of Degree in Master of Business Administration of **BIJU PATTNAIK INSTITUTION OF IT & MANAGEMENT STUDIES , BHUBANESWAR.**

To the best of my knowledge the report

       I.   Embodies the work of the candidate himself,

     II.   Has duly been completed,

   III.   Fulfils the requirement of the ordinance relating to the MBA degree of the University and

   IV.   Is up to the desired standard for the purpose of which is submitted.

PLACE :   PROF. ANANTA PRASADNANDA

                                  Associate Professor(OM)

DATE:

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BIJU PATTNAIK INSTITUTE OF INFORMATION TECHNOLOGY AND MANAGEMENT PATIA, BHUNABESWAR

CERTIFICATE

This is to certify that the project report entitled **"STUDY ON ERP MODULE OF MANUFACTURING SECTOR."** was prepared by **MIR SAFKAT ALI** under the guidance and supervision of **Mr. ANANTA PRASAD NANDA, (Professor in Operations),** BIITM, Bhubaneswar during the session of 2020-2022 for the partial fulfillment of Masters in   Business Administration.

.

Place: Bhubaneswar   **Dr. Pratap Kumar Tripathy**

Date: **Principal   BII**

CERTIFICATE

ESPARSE MATRIX SOLUTIONS PVT LTD
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Gurudwara Colony,Nigadi,
Pune,Maharashtra-411033
sparsematrix196@gmail.com
www.sparsematrix.co.in
CIN:U72900PN2019PTC187436

Date: 17th August,2021

INTERNSHIP COMPLETION CERTIFICATE

TO WHOM IT MAY CONCERN

This is to certify that **Mir Safkat Ali** has successfully completed his internship programme for 2 Months duration from 03rd June, 2021 to 14th August, 2021 at Esparse Matrix Solutions Private Limited as a Operation Intern.

During this period of internship, we found his very meticulous, Sincere, curious, analytical, hard-working and result orientated. He was very much interested to learn new technologies, and also willing to put his best efforts and get in to depth of the subjects to understand it better.

His Association with us was very fruitful and we wish him all the best in his future endeavours.

Thanking

You,With

Regards,

Human Resource Team

Esparse Matrix Solutions Pvt. Ltd

Biju Patnaik Institute of Information Technology & Management Studies

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Estd. 1999

ACKNOWLEDGEMENT

Apart from my own efforts, the success of any project depends largely on the encouragement and guidelines of many others. I take this opportunity to express my gratitude to the people who have been instrumental in the successful completion of this project.

 I would thank the entire **Management of Esparse Matrix Limited** for giving me the wonderful opportunity to work on a 60 Days internship project in their esteemed organization.

 I am highly obliged to **Miss. Swatee Singh deo(HR)** for giving me this project and guiding me throughout my summer internship research. Their encouragement, time and effort motivated me to work sincerely in this project. I would like to thank, **Mr. Vishal Singh Rajput(Operation Head),** BIITM for giving me chance to gain an exposure in the corporate world.

 I would like to thank my project faculty guide **Prof. Ananta Prasad Nanda,Associate Professor(OM)** BIITM Bhubaneswar for his constant follow-up, support, encouragement and guidance to complete this project within the allotted time frame.

Thanking you

MIR SAFKAT ALI

Biju Patnaik Institute of Information Technology & Management Studies

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Executive summary

This study is intended to help esparse matrix decide upon the steps to be taken care for customer satisfaction so that the growth of the company keeps on improving. Primary data have been used for analysis. However, secondary source have yielded preliminary information. Research conducted was descriptive in nature. Descriptive research helped me to develop the concept to clearly establish priorities, to divulge adequate information which helps me indecision making and thus essential for making the study a success.

A structured questionnaire was used to obtain required information and to assess the customer satisfaction level and to find the ways through which the company can come up to the expectation of customer so that the optimum satisfaction level can be achieved. I have used random sampling for my survey. Care was taken that the respondents were as diversified as possible. A sample size of 30 respondents was taken from indiamart. I collected data and analysed them. I have critically analysed each and every question in the questionnaire and then given the managerial implication. This analysed data was later converted into bar diagrams for convenience. This also made it easy to draw a conclusion based research and provide a presentable format for the report.

Later on the information were compiled to form a presentable report. Along with this I also learn the operation of manufacturing module. A better strategy to satisfy customer is only the way to gain customer attention and pricing of product.

Index

Introduction to topic

As any business grows, the workload of its administrators also grows exponentially. Initially, companies will make-do with spreadsheets and e-mail, eventually the tediousness of manual logistics will take its toll. Being unable to keep up with customer demand could derail any business during a key growth phase.

Investing in Enterprise Resource Planning (ERP) software can help organizations bring together disparate activities under a single integrated application, thereby streamlining processes and increasing agility. Multi-faceted ERP software utilize a unified database that greatly speeds up response times to clients, increases operational efficiency and ensures customer success.

What is ERP?

Enterprise resource planning (ERP) refers to a type of software that organizations use to manage day-to-day business activities such as accounting, procurement, project management, risk management and compliance, and supply chain operations. A complete ERP suite also includes enterprise performance management, software that helps plan, budget, predict, and report on an organization's financial results.

ERP systems tie together a multitude of business processes and enable the flow of data between them. By collecting an organization's shared transactional data from multiple sources, ERP systems eliminate data duplication and provide data integrity with a single source of truth.

Today, ERP systems are critical for managing thousands of businesses of all sizes and in all industries. To these companies, ERP is as indispensable as the electricity that keeps the lights on.

The business value of ERP

It's impossible to ignore the impact of ERP in today's business world. As enterprise data and processes are corralled into ERP systems, businesses can align separate departments and improve workflows, resulting in significant bottom-line savings. Examples of specific business benefits include:

- Improved business insight from real-time information generated by reports

- Lower operational costs through streamlined business processes and best practices

- Enhanced collaboration from users sharing data in contracts, requisitions, and purchase orders

- Improved efficiency through a common user experience across many business functions and well-defined business processes

- -Consistent infrastructure from the back office to the front office, with all business activities having the same look and feel

- Higher user-adoption rates from a common user experience and design

- Reduced risk through improved data integrity and financial controls

- Lower management and operational costs through uniform and integrated systems

<u>Objectives of the study</u>

1. To study the need & implementation of erp software in manufacturing industry.
2. Provide a user friendly erp software at a cheaper price for small startup/manufacturing sector

Scope of study

This project study is helpful in following aspects:

1. It will be helpful to the professionals of eSparse Matrix to know the Need erp software through out the market.

2. It will be helpful in knowing the demand level about erp softwares offered by esparse matrix.

3. It will be helpful to know the satisfaction level of user.

PROJECT MANAGEMENT STRUCTURE DESIGN FOR MANUFACTURING INDUSTRY

PROJECT MANAGEMENT:

Project management can be defined as the discipline of applying specific processes and principles to initiate, plan, execute and manage the way that new initiatives or changes are implemented within an organization. Project management is different to management of business as usual activity, which is an ongoing process, as it involves creating new work packages to achieve agreed ends or goals.

Key components of Project Management are:

• Time – the intended duration of the work

• Cost – the budget allocated for the work

• Scope – what innovations or changes will be delivered by the project?

• Quality – the standard of the outcome of the project.

Key points:

• A project organization is a structure that facilitates the coordination and

Implementation of project activities.

• Its main reason is to create an environment that fosters interactions among the team members with a minimum amount of disruptions, overlaps and conflict.

• One of the important decisions of project management is the form of organizational structure that will be used for the project.

• Each project has its unique characteristics and the design of an organizational

Structure should consider the organizational environment, the project

Characteristics in which it will operate, and the level of authority the project

Manager is given.

• A project structure can take on various forms with each form having its own

Advantages and disadvantages.

• One of the main objectives of the structure is to reduce uncertainty and confusion that typically occurs at the project initiation phase.

• The structure defines the relationships among members of the project management and the relationships with the external environment.

• The structure defines the authority by means of a graphical illustration called an organization chart.

Project Management in Manufacturing Industry:

Project management is a system originally developed within the construction

Industry for controlling schedules, costs, and specifications of large multitask projects. In recent years, manufacturers have discovered that project management's time-tested techniques dovetail neatly with the current thinking on quality control and management in a highly competitive global marketplace. The system has been increasingly recognized for its suitability in the manufacturing process and is now applied in virtually every area of production. In the manufacturing industries, projects routinely use shared resources. This draws the project manager and the line managers of functions into continual negotiations over the performance of work. The current trend to downsizing and flattening of organizations has only heightened the tension and led both project and function managers to compete with each other for power and authority. This unpleasant issue needs to be examined and discussed thoroughly.

The project management discipline cut its teeth in the aerospace and construction industries, proving to be invaluable in mega-projects. But in more recent decades, project management has become the province of a wider variety of industries and applications, from marketing and events planning to publishing, information technology, and the film industry.

In particular, proponents of agile project management have made their mark in software development, a project-based creative field where innovation, speed and accuracy are of the essence.

Steps:

➢ Plan

• Target Setting

• Setting Milestones

• Master Schedule

➢ Performing

➢ Checking

➢ Acting

Process of Project Management:

Dividing the Project Management efforts into five phases can help give our efforts structure and simplify them into a series of logical and manageable steps.
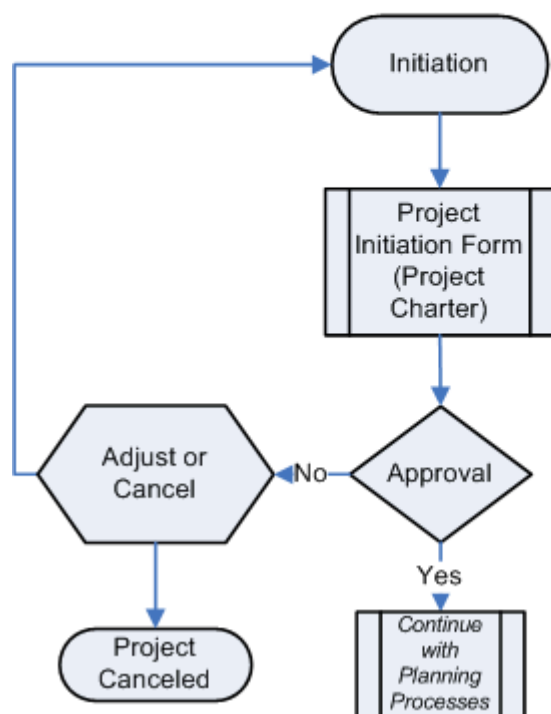
1. Project Initiation:

Initiation is the first phase of the Project lifecycle. This is where the project's value and feasibility are measured. Project managers typically use two evaluation tools to decide whether or not to pursue a project:

Business Case Document – This document justifies the need for the project, and it includes an estimate of potential financial benefits.

Feasibility Study – This is an evaluation of the project's goals, timeline and costs to determine if the project should be executed. It balances the requirements of the project

with available resources to see if pursuing the project makes sense. Teams abandon proposed projects that are labelled unprofitable and/or unfeasible. However, projects that pass these two tests can be assigned to a project team or designated project office.

Initiation Processes

Initiation

Project
Initiation Form
(Project
Charter)

Adjust or
Cancel ◀No— Approval

Yes

Project
Canceled

Continue
with
Planning
Processes

2. Project Planning:

Once the project receives the green light, it needs a solid plan to guide the team, as well as keep them on time and on budget. A well-written project plan gives guidance for obtaining resources, acquiring financial and procuring required materials/The project plan gives the team direction for producing quality outputs, handling risks, creating acceptance, and communicating benefits to stakeholders and managing suppliers. The project plan also prepares teams for the obstacles they might encounter over the course of the project, and helps them understand the cost, scope and timeframe of the project.
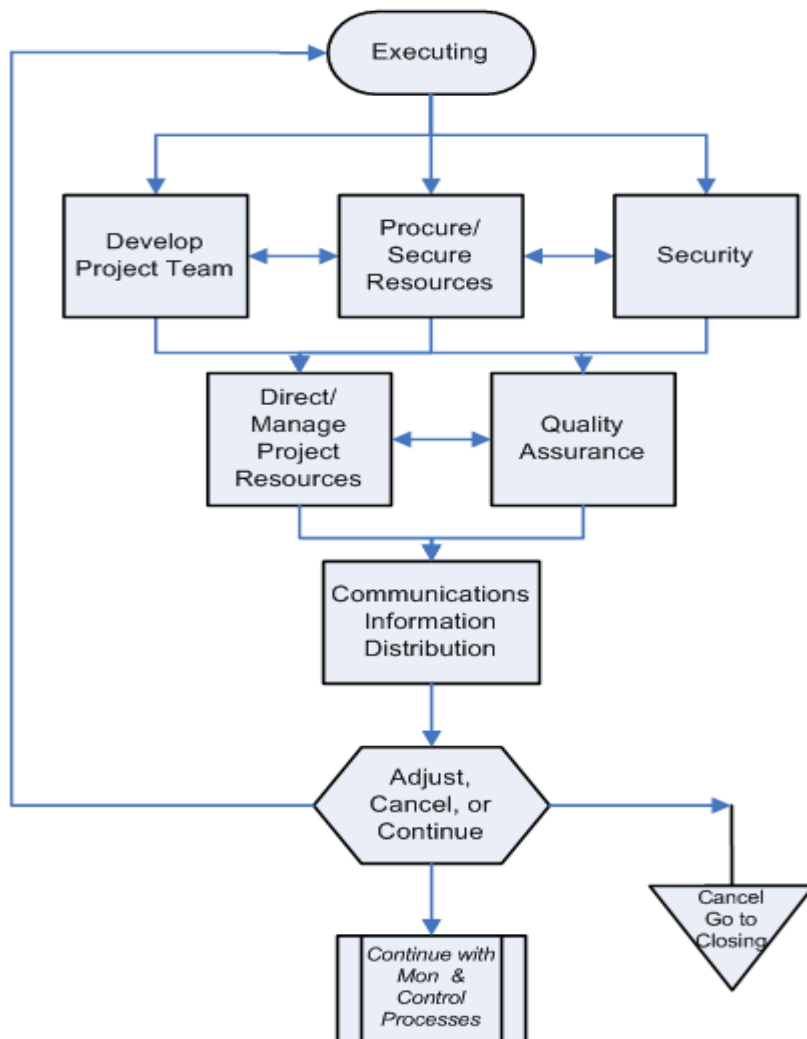
Planning Processes
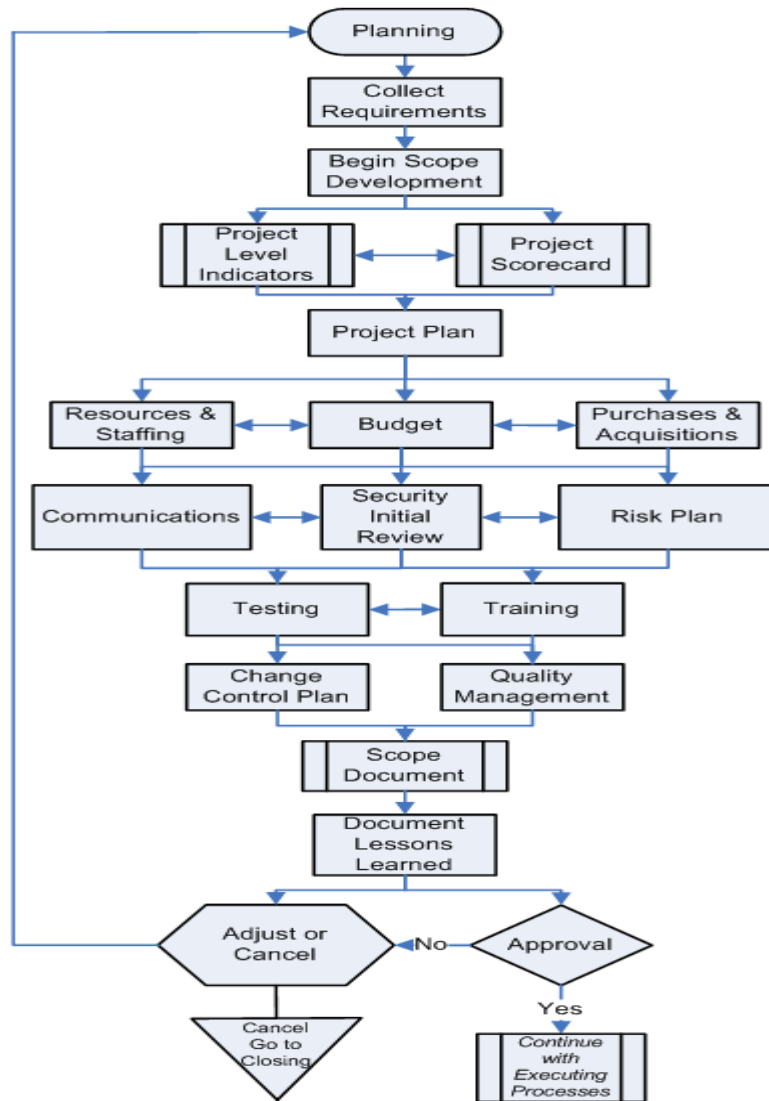
3. Project Execution:

This is the phase that is most commonly associated with project management.

Execution is all about building deliverables that satisfy the customer. Team leaders make this happen by allocating resources and keeping the members focused on their assigned tasks. Execution relies heavily on the planning phase. The work and efforts of the team during the execution phase are derived from the project plan.

Executing Processes

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                        │  Executing  │
                        └─────────────┘
                               │
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          ▼                    ▼                     ▼
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  │   Develop    │◄──►│  Procure/    │◄────►│              │
  │ Project Team │    │   Secure     │      │   Security   │
  │              │    │  Resources   │      │              │
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     │   Manage     │◄────►│   Quality    │
     │   Project    │      │  Assurance   │
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          └────────────────────────┘        Closing
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                     ▼
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          │   Continue with        │
          │   Mon & Control        │
          │   Processes            │
          └────────────────────────┘
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4. Project Monitoring and Control:

Monitoring and Control are sometimes combined with execution because they often occur at the same time. As teams execute their project plan, they must constantly monitor their own progress. To guarantee delivery of what was promised, teams must monitor tasks to prevent scope creep, calculate key performance indicators and track variations from allotted cost and time. This constant vigilance helps keep the project moving ahead smoothly.
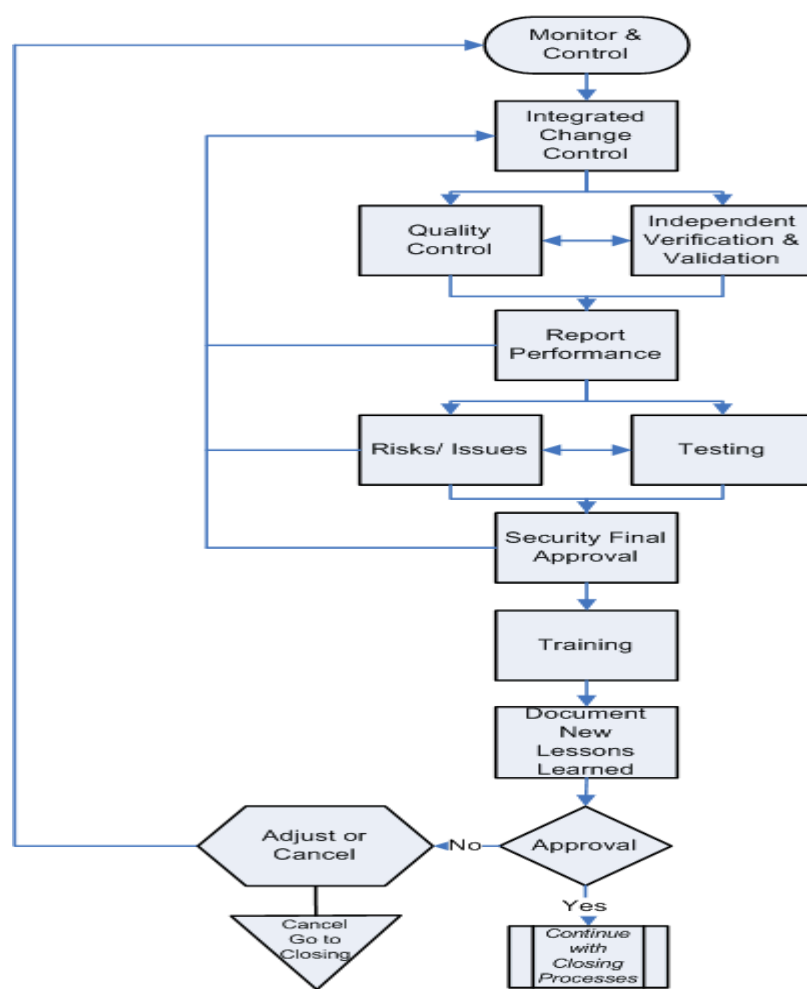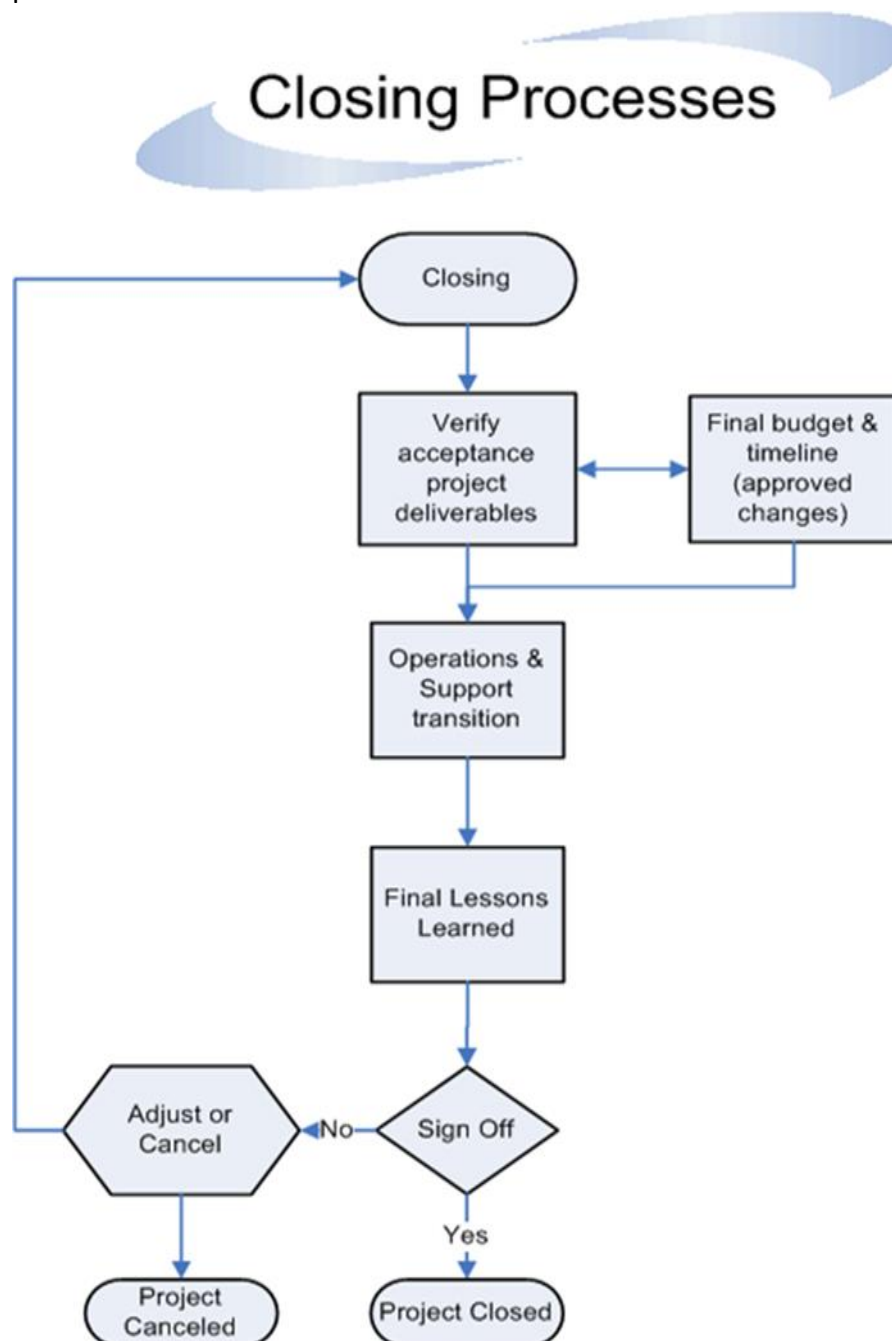
5. Project Closure:

Teams close a project when they deliver the finished project to the customer,

Communicating completion to stakeholders and releasing resources to other projects. The vital step in the project lifecycle allows the team to evaluate and document the project and move on the next one, using previous project mistakes and successes to build stronger processes and more successful teams**.**

Closing Processes

Closing

Verify acceptance project deliverables

Final budget & timeline (approved changes)

Operations & Support transition

Final Lessons Learned

Adjust or Cancel

No

Sign Off

Yes

Project Canceled

Project Closed

Implementation of Software in Project Management of Manufacturing Company

In production sector, generally main concept is converting raw material to useable or saleable goods. It comes across various processes. Most of the time these processes are complex by nature. So doing it in conventional way becomes difficult to manage. From handling the Teams who are running the entire setup to making sure that the machines are in right shape and what not, there's so much that goes around in a manufacturing firm. There is no denying that all this cannot be handled unless we have access to the right technology.

This is exactly a project management software for manufacturing firms that helps them become more efficient. All the people, and units brought together at one plan all team members in the tool and assign a Custom role to them. It is this custom role that will define the things they can access in the tool.

In fact, we can have separate custom roles for Clients, Unit managers, and Team members. It brings hierarchy within the working system, and at the same time avoids irrelevant information being shared with irrelevant individuals.

Create a project plan:

Planning is an integral part of every business. When we run a manufacturing firm, we need to plan things from ground up. When is the manufacturing process going to start? From where are you going to get the raw materials? Who is going to head the first stage of the process? These are some of the common questions that pop- up, and they require planning.

Manufacturing process in a flow to make sure there are no confusions in the way everyone needs to work, Dividing Manufacturing process into stages:

Track time and deliver consignments on time

A manufacturing unit can succeed only if it delivers the consignments on time.

We can set an estimated time for each task, so that the person has a fair idea as to when he or she is supposed to deliver the task. This is important a sometimes tasks are dependent and beginning of one task is dependent upon completion of the task.

Write notes, upload files and keep all the information intact managing the manufacturing requirements shared by Client. Saving sample design files for the products and what not.

There is a lot of documentation involved in manufacturing firms. Losing or misplacing any one such file can put the entire project in risk of failure.

Keep an eye on how teams are performing analysing how teams are performing and how each unit of the manufacturing firm is working is the most important aspect of a manufacturing company. After all, we need to keep an eye on which team is doing what task, how many hours is the manufacturing unit working and similar other factors. Add a Project manager to keep things always under ultimate control Just to make sure that things never slip out of cracks in the manufacturing projects.

The Project Manager gets real-time updates, and a project progress report that helps in iterating plans, and making sure that things are always under ultimate control.

Importance of Manufacturing Project Management:

Manufacturing project management can improve the chances of success. Teams and individuals have clearly defined roles with a good understanding of their responsibilities. Risk Planning is always a part of the process. This can improve delivery times and the company's bottom line. Delivery processes are well defined and happen quickly with less overhead.

eSparse matrix

- eSparse Matrix Solutions provides a one-stop solutions for all customer IT service needs. It is a software development company based in India and offers services in variety field including app development, all types ERP,CRM,web development and digital marketing. It mainly focuses on ERP development.

- The company was established in the year 2019, with the goal to provide high quality cost effective services to the businesses. Today they have a team of of experienced and skillfull team of professional's software engineers, technology enthusiasts with creative designers. Within a short time span, we have successfully delivered over 50+ projects to clients worldwide

- sparse Matrix Solutions Private Limited is a Private incorporated on 23 October 2019. It is classified as Non-govt Company and is registered at Register of Companies, Pune. Its authorized share capital is Rs. 100,000 and its paid up capital is Rs. 10,000. It is involved in other computer related activities [for example maintenance of websites of other firms/ creation of multimedia presentations for other firms etc.

- Directors of Esparse Matrix Solutions Private Limited are Vishalsingh Dhirajsingh Rajput and Krishna Pralhad Tayade.

Esparse matrix provides different types of services related to information technology sector, but they are mainly focused on erp module. They provides various types of erp module for different industry. Those are:

School erp

School ERP is a collection of computer instructions, specially designed to manage the day-to-day administrative tasks of schools. School management software allow schools to digitally monitor the daily activities along with managing all the resources and information on a single platform.

In contemporary, most of schools are using school management's software to increase efficiency, productivity, and hence saving a lot of time involved to carry out various administrative operations.

It provides data such as

- Admission management
- Student management
- Attendance
- Fees
- Timetable
- Event and activity
- Employee
- Payroll
- Hostel
- Stock
- Library

HRMS

sparse HRMS Solutions has developed a formidable reputation for delivering customised HRMS solutions. Esparse HRMS is a one-stop shop for all HR needs, including recruiting, employee database management, leave tracking, payroll management, preparation, and success management. Since each client is different in terms of team size, processes, and specifications, each HRMS Module is customised to meet the specific needs of the client customers.
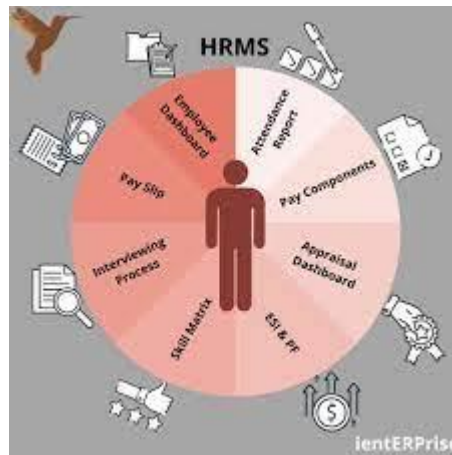
HRMS's Solutions Key Features

Human resources are unique and provide a significant competitive edge to every business. In today's demanding climate, attracting and keeping the best workforce has been the most difficult task. The Esparse HRMS allows smooth incorporation between departmental, intra-departmental, and entity levels

Features are

- Recruitment
- Performance
- Employee self-services
- Leave
- Training
- Help desk

ESPARSE CRM

Esparse CRM software creates new tasks for your team. Automate everything from appointment reminders to follow-up emails by putting your calendar online. With complete contact views, deal tracks, real-time DATA, and other features, you can achieve a significantly higher ROI. In the Sales CRM, the contact timeline contains all of the relevant details about the customer's progress

Esparse CRM Key Features

- Contact management
- Sales pipeline
- Reporting
- Sales quotation
- User roles and profiles

Satisfied customer

- Trading gyan
- Ecobugy solution
- Kanthak solar energy ltd
- Spectrum academy
- Sportszeal system
- Raj transport

Competitor analysis

Competition analysis aims at identifying your brand's main competitors and determining the best ways to surpass them. The purpose of competition analysis is to help you determine why your target audience chooses their brand and what type of unique value proposition could prompt them to buy from you instead.

Enterprise Resource Planning (ERP) was previously not an option for Small Businesses because of the cost of On-Premise ERP. On-Premise ERP requires a sizeable investment because of the expensive I.T. infrastructure that needed to be in place before the implementation and the recurring cost in maintaining the system

Small businesses are always sensitive to their bottom lines and are greatly conservative in terms of the Return of Investment (ROI) and risk. esparse matrix present a substantial risk to small businesses because of the initial cost involved, the time needed, and the potential disruption to day-to-day operations of the business.

Esparse matrix has multiple competitors in market they also provide erp Softwares used for project management in production sector. Those companies are-

ZohoProjects

Project Management Software is a widely used technology, and many people are seeking time saving, high quality software solutions with dependencies, resource allocation, and recurring tasks. Other important factors to consider when researching alternatives to Zoho Projects include user interface and project management.

Starting Price:₹288Month/User (upto50users) if billed annually

Pros: low price   cons: complex ui

Focus9

Focus 9 is a web-based ERP solution. It is an intelligent application with simplified IT infrastructure that modernizes and accelerates business operations. It gives companies the tools to automate their critical processes, allowing management to focus on the new market opportunities. Whether an advanced financial accounting or real-time customer response or skilled human resource or beyond, Focus 9 includes end-to-end tools that can drive growth through innovation

Starting Price: Available on Request

Pros: user friendly   cons: price varies on add on

Jira

JIRA breaks down the project into tasks, with its ticket model. You, as the project manager, are thinking about your project in terms of individual tasks. That in turn pushes the team to complete tasks without thinking about how those tasks fit into the project

Starting Price: ₹720 Per Month

Pros: highly customizable   cons: high price

WebWork Time Tracker

WebWork Time Tracking Software tracks the **working time**, activity level of keyboard strokes and mouse clicks, captures screen (optional screenshot modes) and the data goes to web, where the user will have tidy reports of screenshots, timesheet, statistics and detailed activity reports.

Starting Price: ₹215.28 User/Month

Pros: low price   cons: poor interface and complex design

Taskworld

taskworld is a cloud-based collaboration platform created by Fred Mouawad. The SaaS (software as a service) is designed to facilitate project and task management, collaboration, delegation, communication, knowledge management, measure progress and provide performance metrics for evidence-based evaluations within teams. It allows team members to assign and receive tasks, add followers, record comments, and share and store unlimited files and organize project

Starting Price: ₹359.28 License/Month

Pros: good with info graphics   cons: poor service

eResource Scheduler

eResource Scheduler has been designed for organizations that schedule human (employees, contractors etc.) and non-human (equipment, meeting rooms etc.) resources on projects. Main features: Cloud & Installed versions Collaborative multi-user software Configurable, fields, forms, views Drag & drop scheduling Informative dashboard Email notifications Utilization & Availability reporting Flexible user access rights Fast performance Secure & Robust architecture Personalized support

Starting Price: ₹360PerResource/Monthly

Pros: good for every domain   cons: requires high end graphics

Customer analysis

Target consumer is defined as the specific group of consumers who are the focus of a company's advertisements. This focus is communicated through media and the use of television, movies, audio, and print capabilities. The target consumer is similar to target market; however, the notable difference is the target consumer is a specific group within the target market.

Here this erp module can be used by multiple manufacturing sector. So our main target consumer is mainly small scale industry.

As the company is building erp module for production/manufacturing sector. So the primary target is who manufacturer's small spare parts of bigger machinery.

The target consumer are

*small manufacturing industry

*company age maximum 5yrs (production)

*capital 500000rs-1000000rs

*conducting assembly of various parts

Depends what system you are implementing, though the core questions to ask will revolve around these:

- Try to know their existing process for which the system is being implemented.
- Know the pain areas for which implementing the system was considered in the first place.
- Do a proper GAP analysis of what the system has and what is required by the client. Share the gaps with your product manager or the technical team.
- Assess the level of competence of the end users, this will give you a fair idea of how much time they would take getting comfortable with the system.
- Clearly inform them to have a single point of contact for handling all the communication during the implementation.

We gathered most number of customers data from **indiamart.**as a number of manufactures sold their goods here.some of them follow traditional operating system and some of them follow advanced technology.

Our main target customers are small parts manufacturer so our operation team analysed the whole situation and made cold call on various manufacturers. Most of the manufacturer's data we got from India mart.

The companies are

*various slipper manufacturing machine

*paper cup/plate manufacturing machine

*bike/car spare parts manufacturers

*electric equipments

*battery manufacturing company

Expected questions from customer

Company should be prepared to clarify all questions/doubts of customer so that customer loyalty will increase.

The Questionaries' are

- How many successful ERP installations have you performed?
- Who is your ideal customer?
- Describe your consulting resources. How many full-time consultants do you employ, and are they qualified?
- How will I know if the software will fit my business requirements?
- What's your guarantee/warranty?
- What kind of training and support do you offer?
- How is the software licensed
- How do you ensure customer satisfaction?
- What do you do to ensure each project comes in on time and on budget?
- Is the software customizable and can it be integrated with my other systems?
- Can you give me references?
- Are you and your software recognized in your industry?
- How does your software support the extended enterprise?

Industry analysis

Enterprise Resource Planning (ERP) Market Statistics: 2027

The global ERP market size was valued at $39,340.00 million in 2019, and is projected to reach $86,303.00 million by 2027, growing at a CAGR of 9.8% from 2020 to 2027. Enterprise resource planning (ERP) is a modular software system primarily designed to integrate major functional areas of an organization's business processes into a unified system. An ERP system includes core software components, often called modules, which focus on essential business areas such as finance and accounting, human resource (HR), production & materials management, customer relationship management (CRM), supply chain management, and others. Organizations choose which core modules to use based on the business importance. Enterprise resource planning solutions enables efficient resource management and integration of organizational activities, and its implementation enhances the operational efficiency, thus providing competitive edge to enterprises.

On the basis of component, the software segment dominated the ERP market share in 2019, and is expected to maintain its dominance in the upcoming years. This is attributed to the introduction of low-cost ERP systems such as resource ERP. Furthermore, the adoption of ERP software has increased among smaller industries, which is opportunistic for the ERP market. In addition, in the developing economies such as India and China, the adoption of ERP software is high in industries such as automotive, consumer durables, steel, engineering, and manufacturing, which depicts that these industries represent the highest potential. In addition, the services segment is expected to witness highest growth rate in the upcoming years, owing to increase in adoption of services such as consulting, training, and others, as these services reduce the time and costs associated with optimizing systems in the initial phase of deployment. As these services help to deploy and integrate distinct IT solutions in an enterprise ecosystem, they work as an important part of an organization.

By deployment model, the on-premise segment garnered the largest ERP market share in 2019, and is expected to maintain its dominance in the upcoming years, as on-premise deployment mode is considered widely useful in large enterprises as the software can be implemented on the IT infrastructure of the company itself and it provides more security as compared to the cloud. However, the cloud segment is expected to witness the highest growth, owing to a paradigm shift in the deployment methods from on-premise to cloud-based models. This has been the major factor driving the adoption of cloud-based ERP models among SMEs and some large-scale organizations. In addition, leading market vendors of ERP market have introduced strategies to help enterprises move their on-premise ERP model to cloud-based models, which further fuels the growth of the segment. For instance, in January 2018, SAP SE, a German multinational software corporation, introduced Upgrade2Success, a program to help clients with on-premise SAP ERP Human Capital Management (HCM) solutions transition and expand into the cloud

Enterprise Resource Planning (ERP) Market

By Deployment Type
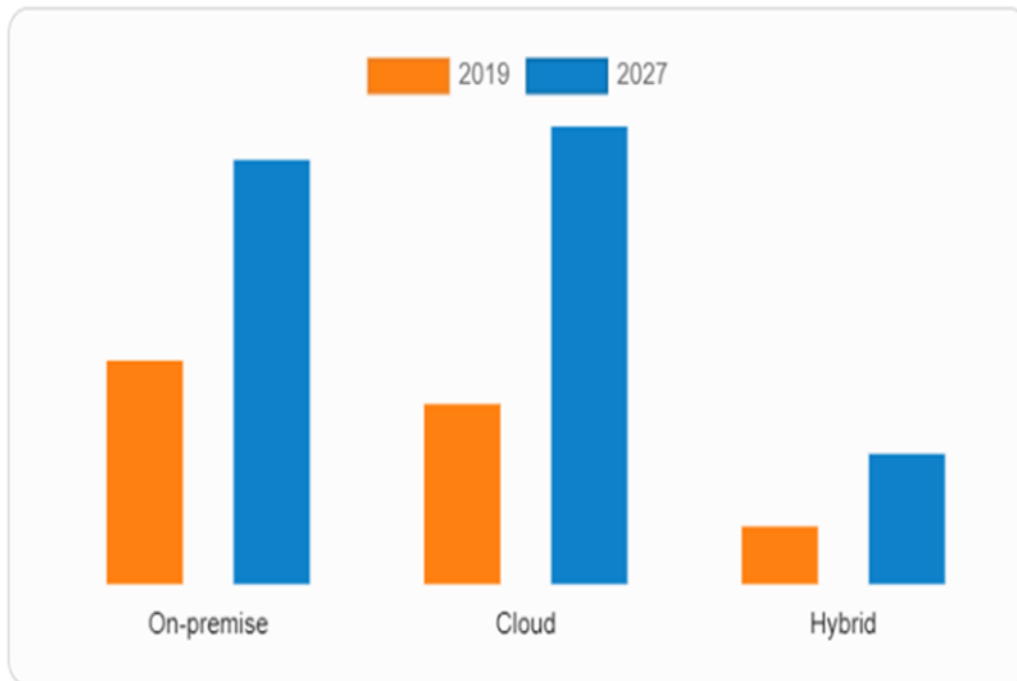
Cloud segment is projected as one of the most lucrative segments.

North America dominated the overall ERP market share in 2019, attributed to number of factors such as penetration of new industries and improvement in economy. Moreover, businesses in this region are transitioning from on-premise to cloud-enabled ERP software, owing to its low-cost implementation and maintenance. Presence of large number of cloud ERP solution vendors across the U.S. and Canada is expected to provide lucrative opportunities for the market. However, Asia-Pacific is expected to grow at the highest rate during the ERP market forecast period, due to the wide presence of small- and medium-scale enterprises, which are turning toward the hosted ERP solutions to efficiently manage their business processes, particularly in the developing countries such as China, India, and Singapore.

Enterprise Resource Planning (ERP) Market

By Industry Vertical
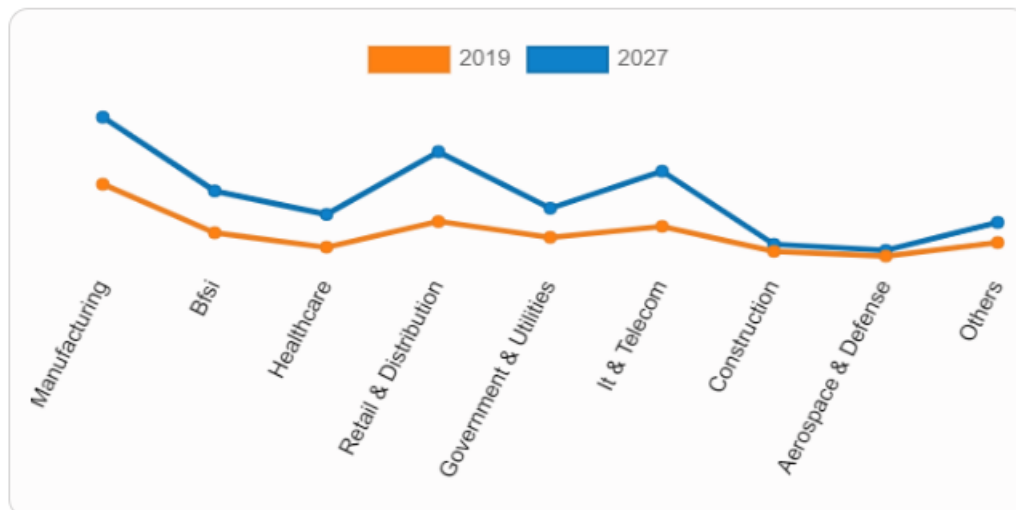
Healthcare industry is projected as one of the most lucrative segments.

The report focuses on the growth prospects, restraints, and ERP market analysis. The study provides Porter's five forces analysis of the ERP industry to understand the impact of various factors such as bargaining power of suppliers, competitive intensity of competitors, threat of new entrants, threat of substitutes, and bargaining power of buyers on the ERP market trends

Segment review

The enterprise resource planning market is segmented into component, deployment model, business function, industry vertical, end user, and region. Depending on component, the market is bifurcated into software and services. By deployment mode, the market is categorized on-premise, cloud, and hybrid. On the basis of business function, it is classified into finance, human resource (HR), supply chain, customer management, inventory management, manufacturing module, and others. As per end user, it is segregated into large enterprises, medium enterprises, and small enterprises. The industry verticals covered in the study include manufacturing, BFSI, healthcare, retail & distribution, government & utilities, IT & telecom, construction, aerospace and defence, and others...

Top impacting factors

The global ERP software market is expected to exhibit robust growth during the forecast period. The key factors impacting the growth of the enterprise resource planning market include rise in need for operational efficiency & transparency in business processes, surge in adoption of cloud & mobile applications, and increase in demand for data-driven decision-making. In addition, surge in demand for cloud-based ERP during the COVID-19 pandemic is anticipated to influence the ERP market growth. Furthermore, higher investment and maintenance costs and availability of open source applications are expected to affect the market growth during the ERP market forecast period. Moreover, increase in demand for ERP among small & medium enterprises and technological advancements in ERP are likely to have a notable effect on the global market. However, each of these factors is anticipated to have a definite impact on the overall market growth during the forecast period.

Surge in adoption of cloud & mobile enterprise resource planning applications during COVID-19 pandemic

During the COVID-19 pandemic, upsurge in demand for cloud-based ERP software supported businesses to sustain during disruptions. In addition, the ERP software solution played a vital role in keeping the entire business processes efficiently operating through various features such as remote access, digital data exchange, automated reporting, and real-time work floor control. In addition, the pandemic has forced businesses around the globe to shift their physical offices into the remote working setups. This factor has led to surge in demand for ERP software, thereby fuelling growth of the ERP market

Technological advancement in ERP

Traditional ERP technology has been deployed since several decades; however, increased adoption of advanced technologies such as IoT, AI, and big data analytics have led toward the growth of the industry. Increase in technological innovations in Asia-Pacific countries, such as India, China, Australia, and Singapore is expected to create several opportunities for the enterprise resource planning market. The integration of ERP with IoT-based devices allows organizations to identify and eliminate issues such as unnecessary assets. In addition, automation of processes by IoT technology keep the plant operations running on time without any human intervention. Similarly, multiple benefits of integrating ERP software with wearable technology, such as real-time information transmission, minimized errors, real-time access to data, and faster decision-making are creating several opportunities for the ERP market.

Key Benefits For Stakeholders

- This study includes the ERP market analysis, ERP market trends, and future estimations to determine the imminent investment pockets.
- The report presents information related to key drivers, restraints, and ERP market opportunity.
- The ERP software market size is quantitatively analysed from 2019 to 2027 to highlight the financial competency of the industry.

- Porter's five forces analysis illustrates the potency of buyers & suppliers in enterprise resource planning market

Key Market Segments

By Component

- Software
- Services

By Deployment Model

- On-premise
- Cloud
- Hybrid

By Business Function

- Finance
- Human Resource (HR)
- Supply Chain
- Customer Management
- Inventory Management
- Manufacturing Module
- Business Intelligence
- Other

By Industry Vertical

- Manufacturing
- BFSI
- Healthcare
- Retail & Distribution
- Government & Utilities
- IT & Telecom
- Construction
- Aerospace & Defense
- Others

By End User

- Large Enterprises
- Medium Enterprises
- Small Enterprises

SWOT ANALYSIS

Initially, the team must analyse the need of ERP, and then have to finalize the solution for ERP. Before or after finalizing the solution, the main tool for analysis is SWOT analysis.

The basic Intention of SWOT Analysis is to find the Strengths, Weaknesses, Opportunities and Threats in the system. It is used to focus the different factors affecting the working of organization which is developed to full fill mission .

When the top level management gets ready to implement the ERP in their organization they call the meeting with the all concern people who have direct and indirect influence on ERP implementation from different level of organization like Board Members, Managers, Head of Departments, Technical Staff, and Supervisors. The meeting gives the idea about the vision and mission of the institute and the aim of organization which can be achieved with ERP implementation. The meeting also elucidates the role of individual and groups in implementation process.

When everyone is cleared with their role in the process, the management starts collecting the information about the current status of the in-house and outside situation of the organization. On basis of this information, organization starts to create a list of factors which will influence the ERP implementation. Once the list get finalize about the factors affecting on ERP implementation, the organization starts to divide the factors into two major categories in-house factors and Outside Factors. In-house Factors are manageable and inside the organization environment. Outside Factors influences on the organization from the outside world, which are mostly not controllable from the organization. Further the in-house factors are distributed into two sub groups, Strengths & Weaknesses of the organization. The Outside Factors are gets distributed in Opportunities and Threats. The next step in the SWOT analysis is to create the matrix called as "SWOT matrix" The matrix consists the list of factors which comes under the Strengths, Weaknesses, Opportunities and Threats of the organization. Once the matrix is ready, the organization can study all factors affecting the working of organization. The factors may affect in various ways which can be advantageous or disadvantageous to the system

Strengths:

They are factors that give a stand to organization in the market. The Strengths depends upon the organization can go for ERP Implementation some of the factors are listed in the matrix like Robust System, Involvement to e-campus, Scheduling, Well ordered and skilled staff and last long-term mission & vision. The organization having strong financial hand can prepare a Robust System in the organization with ERP Implementation. ERP implementation process last for long time so, it required more time schedule for better implementation in organization. It is easier to implement ERP if the organization have better infrastructure, otherwise it will take more time to create new setup for implementation. Human Resources are the main strength of the organization. And if the organizations have the well-ordered and skilled staffs, the thing are get easily accepted and implemented perfectly in most of the cases. Above all the strengths of the organization has the vital and long-term mission and vision in Top level management of the organization which will always stand as supporting referendum for the ERP development team to achieve the goals and objective.

Weaknesses:

They are factors that can be destructive if used against the organization by its competitors or it can be detriments relative to internal environment of the organization. During the ERP implementation the role and support of Top level management plays a vital role and if decision making is having any Inflexible nature of the Top level management during the implementation the staff on other level of organization may not have confidence on the Top level and it may affect very badly on the ERP implementation. Sometime all the staff of the organization may not be technically sound as compare to the ERP development team. If the people who are ensuring the direct working position on ERP system then they must understand the System. If they botched in understand the System so it will be one of the weakest thing for the organization. The staff of the organization is always denied to change their traditional working atmosphere and they are not in position to attain the new system. Most of the Organization hires the experts for implementation and deployment of the ERP. After finishing the task the experts leave the organization. Here the problem with respect to maintenances of the ERP occurs and if organization don't have staff that have the enough knowledge of ERP System intensely, so again the process get started and it increase the cost of process. Most of the organization is unsuccessful to analyse the necessity of market and customer requirement and by poor knowledge of the market the ERP implementation may get botched

Opportunities:

They are factors or situations which can bring a viable advantage in the market. The organization will never fails in market in achieving their goal if they always look for better opportunities. The main task for organization is to find opportunities in the market while planning ERP implementation. The main part for considering the opportunities in market for organization is customer. The main opportunities by ERP in organization are central control or workflow .The next opportunities for ERP system are to create new strategies for improvement. The Opportunities are always present in market to stand in market at higher level. The higher the stand in market is higher the chances of winning

Threats:

They are factors or un-favourable situations which can destructively affect the business or cause misfortune for organization. The very first factor comes in mind while ERP implementation is security for providing the data. As the data get shared from the different individuals or departments may be at same location or different geographical location needs more security. One of the most costly and important threats for the ERP implementation is Maintenance Cost. It requires continuous observing, time and staff in the process. The next serious threat is slow growth of the organization. The next important threat is Opponent of organization. If the opponent is using more advance technology as compare to organizations technology then it will be more horrible for the organization. After completing ERP implementation, the organization must have some staff who will be technically sound to solve the upcoming problems in ERP system which can decrease the dependency on the ERP development experts which are outsiders for the organization and it will reduce the cost of maintenance

Porter Five Forces for an ERP

Why Porter's five forces analysis is important?

Porter five forces analysis will help you in understanding and providing solution to – nature & level of competition, and how Project Erp can cope with competition. Even though from outside various industries seem extremely different but analysed closely these five forces determines the drivers of profitability in each industry. You can use Porter Five Forces to understand key drivers of profitability of Project Erp

Porter Five Forces model is heavily borrowed from the traditional field of micro economics. The five forces that determine the industry structure of organization in case name case study are -

1. **Threat of new entrants** - if there is strong threat of new entrants then current players will be willing to earn less profits to reduce the threats.

2. **Threat of substitute products and services** - If the threat of substitute is high then Project Erp has to either continuously invest into R&D or it risks losing out to disruptors in the industry.

3. **Bargaining power of suppliers of Project Erp** - If suppliers have strong bargaining power then they will extract higher price from the Project Erp.

4. **Rivalry among existing players** – If competition is intense then it becomes difficult for existing players such as Project Erp to earn sustainable profits.

5. **Bargaining power of buyers of Project Erp** – If the buyers have strong bargaining power then they usually tend to drive price down thus limiting the potential of the Project Erp to earn sustainable profits.

Porter's 5 Forces, Competitive Forces & Industry Analysis

The core objective of strategists and leaders in an organization is to help the organization to build a sustainable competitive advantage and thwart competitive challenges.

Step 1 – Defining relevant industry for Project Erp
Step 2 – Identify the competitors and group them based on the segments within the industry
Step 3- Assess the Porter Five Forces in relation to the industry and assess which forces are strong and which forces are weak.
Step 4 - Determine overall industry structure and test analysis of consistency
Step 5 – Analyse recent and future changes in each forces
Step 6 – Identify aspects of industry structure based on Porter 5 Forces that might be influenced by competitors and new entrants.

How is Porter's five forces framework used in developing strategies?

To achieve above average profits compare to other industry players in the long run, Project Erp needs to develop a sustainable competitive advantage. Industry analysis using Porter Five Forces can help Project Erp in case name case study to map the various forces and identify spaces where Project Erp can position itself.

By doing Industry analysis using Porter Five Forces, An ERP Story: Background (A) can develop four generic competitive strategies.

The four generic competitive strategies that can be pursued in case name case study are -

Cost Leadership

In cost leadership, An ERP Story: Background (A) can set out to become the low cost producer in its industry. How it can become cost leader varies based on the industry forces and structure. In pursuing cost leadership strategy, Project Erp can assess – (pursuit of economies of scale, proprietary technology, supply chain management options, diversification of suppliers, preferential access to raw materials) and other factors.

Differentiation

Project Erp can also pursue differentiation strategy based on the industry forces description in case name case study. In a differentiation strategy Project Erp can seek to be unique in its industry by providing a value proposition that is cherished by buyers. Project Erp can select one or more attributes that can uniquely position it in the eyes of the customers for a specific needs. The goal is to seek premium price because of differentiation and uniqueness of the offering. Industry analysis using Porter Five Forces can help Project Erp to avoid spaces that are already over populated by the competitors.

Focus - Cost Focus & Differentiation Focus

The generic strategy of Focus rests on the choice of competitive scope within an industry. Project Erp can select a segment or group of segment and tailor its strategy to only serve it. Most organization follows one variant of focus strategy in real world.

Data collection

The product or service must satisfy customer needs that's why we gathered multiple requirement from potential customer.

Our main target customers are small parts manufacturer so our operation team analysed the whole situation and made call on various manufacturers. Most of the manufacturers data we gathered from **Indiamart**.
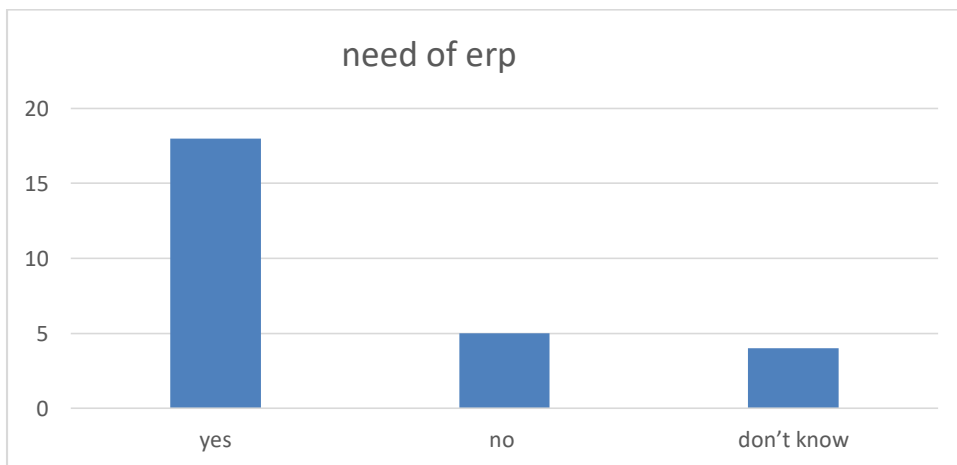
The companies are

*various slipper manufacturing machine

*paper cup/plate manufacturing machine

*bike/car spare parts manufacturers

*electric equipmemts

*battery manufacturing company

Data analysis

We asked multiple questions to customer and analyse the data

- **Do your company need an Erp module?**

Yes	18
No	5
Don't know	7

Analysis

More than 50% of customers are interested in erp module.as they have facing multiple problems so they want to automate. Some of them following traditional operating system so they don't need it.and some are too small company they don't want to purchase.

- **Currently using Erp module**

yes	5
no	13

uses of erp module
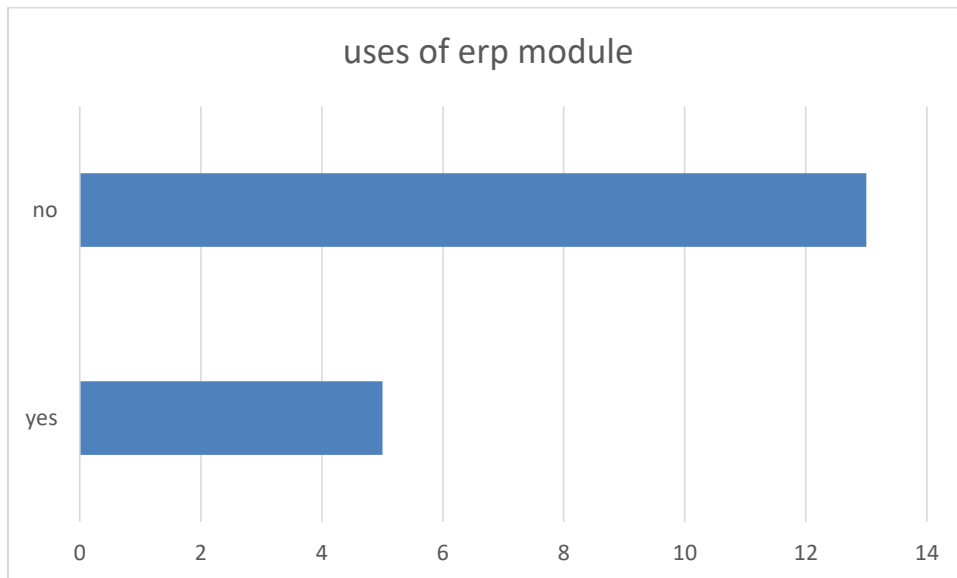
Analysis

Only 5 customers are using erp module in their industry. Although another company have interest but due to certain problem they have not purchased it.they may not like to purchase it.

- **Doubt and query resolved of customers.**

yes	11
no	7
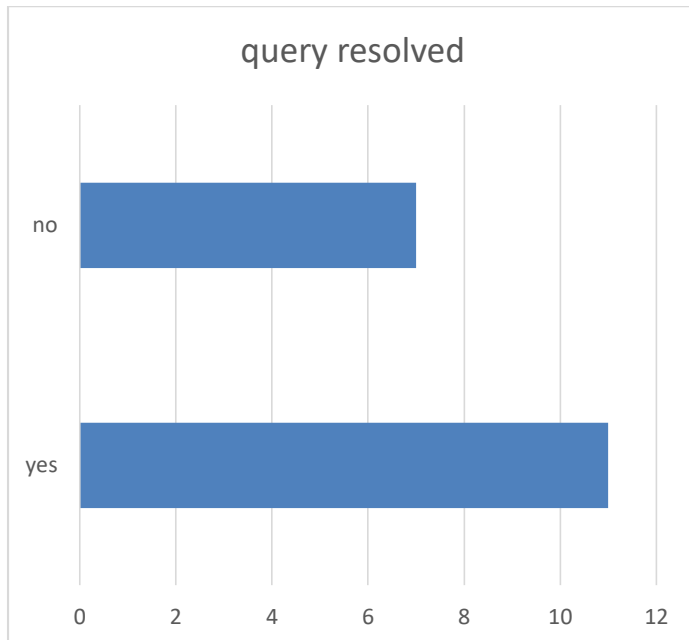
Analysis-

As the developer are not experienced and the product is new to market .queries of 11 customer resolved out of 18.its better to hire experienced developer and operation manager.

3-Do you want customized or integrated Erp module?

Yes	15
no	3
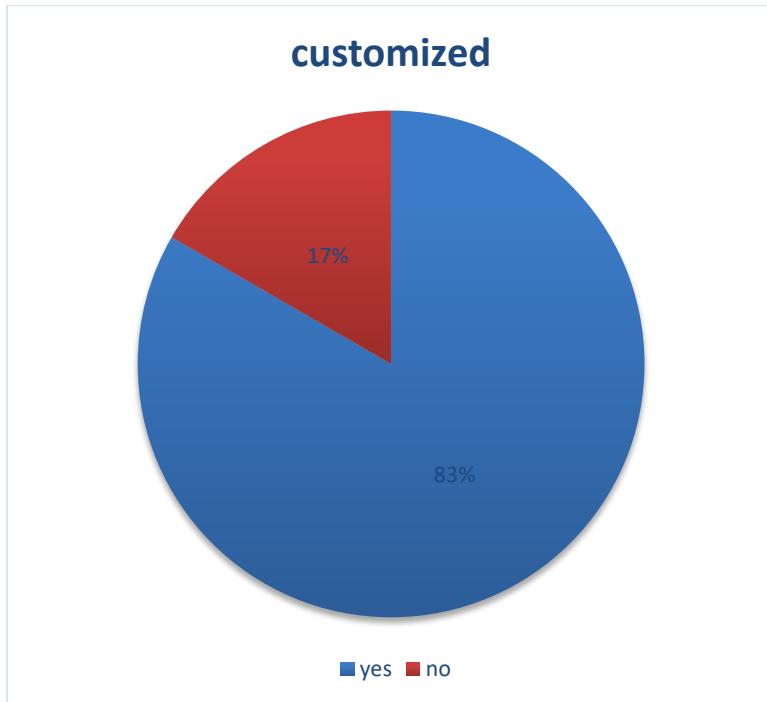
customized

Analysis-

Most of them want customized module or to integrate those erp module with existing one to improve productivity. Very few want our new product. Integrated with harm and manufacturing is high on demand.

- **Customer are happy about which part of Erp module.**

Process operation handling	11
Resource handling	4
Logistic	1
Inventory management	1
forecasting	1

xfactor of erp module

- Process operation handelling
- Resource handelling
- Logistic
- Inventory mangement
- forecasting
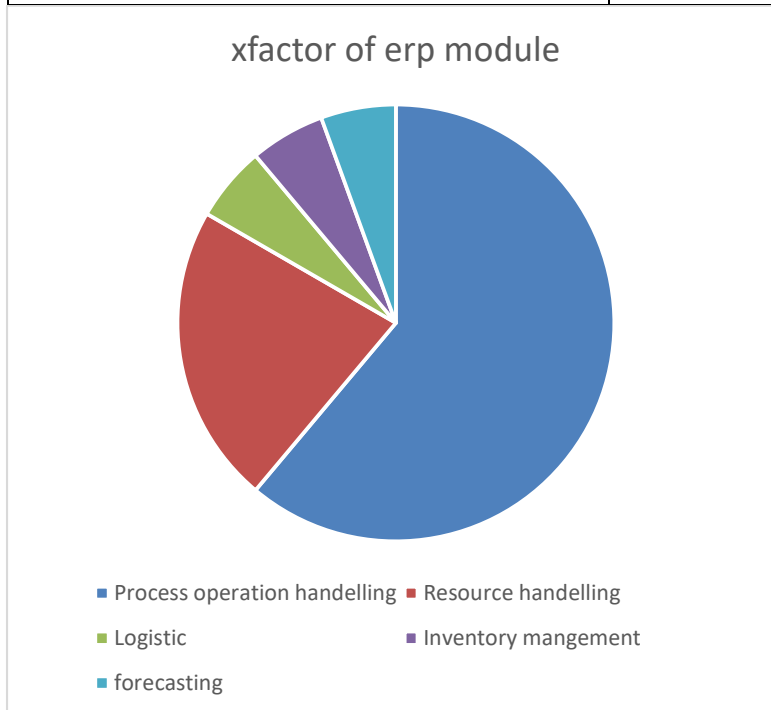
Analysis-

Customers are more satisfied with simplified operation procedures and very few are satisfied with other advanced options like logistics and forecasting.

- **Number of customers willing to buy?**

yes	3
no	15

WILLING TO PURCHASE

■ yes ■ no

17%

83%
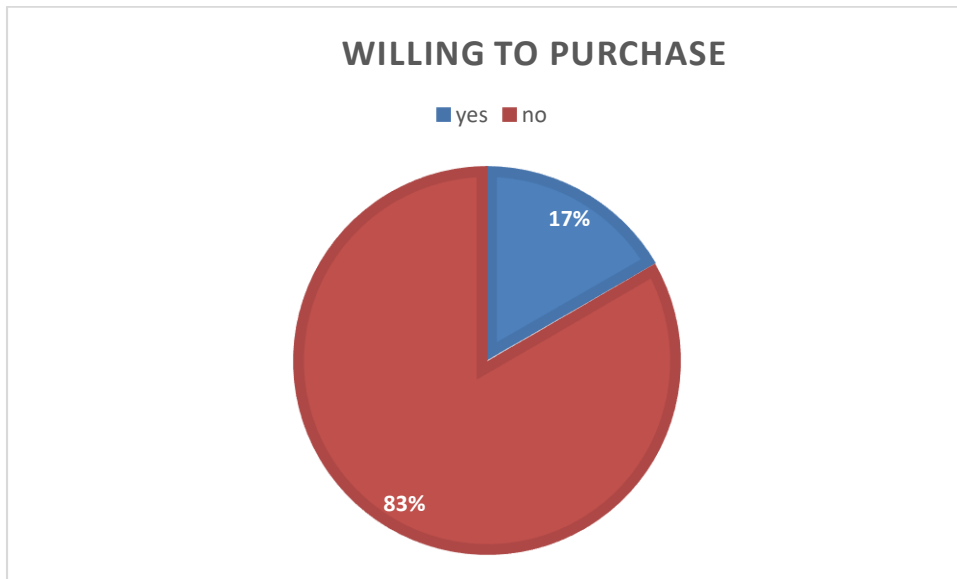
Analysis_

Very few no of customers (17%) are willing to purchase module, another are not interested right now.

Design of new software

By the help of advisor our operation team designed a software app for manufacturing system. The details of app as given below

FrontPage
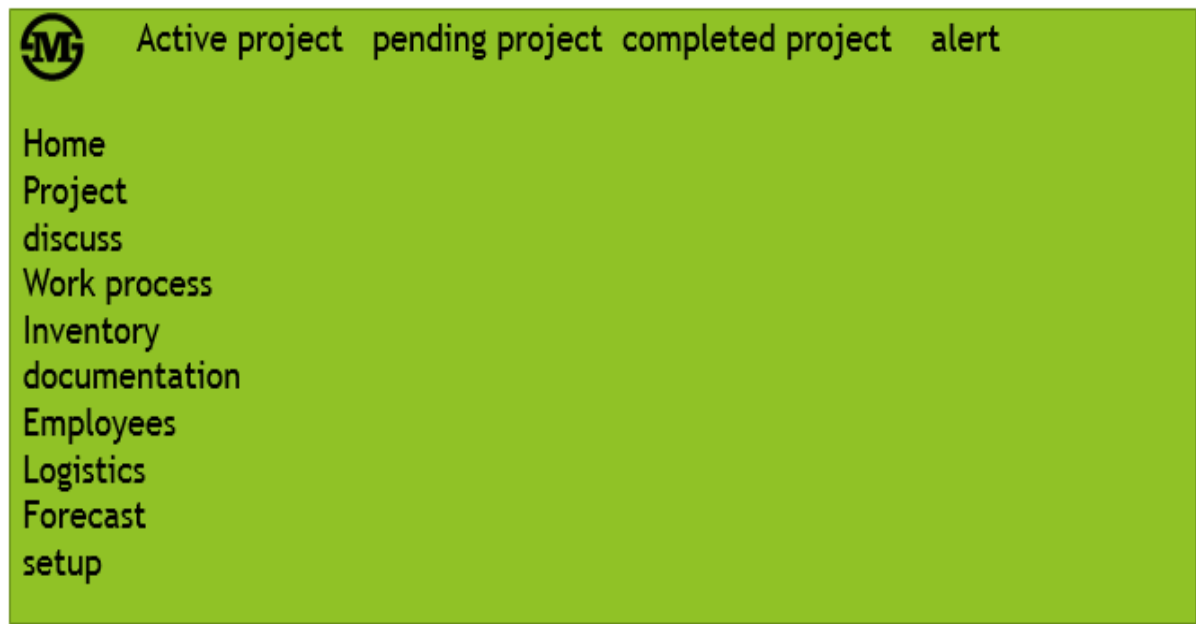
Horizontal bar

▶ Active project-Number of active project

▶ Pending project – Number of project to be completed.

▶ Total project-The total no of project completed by company

▶ Alerts-The alerts mostly come from employee sector or logistic department, which we will discuss later.

Vertical bar

▶ Home

It involves multiple graphs such as pie chart, bar chart, table chart, latter on we can add different charts.

Funds use in different project

Profits from different project

No of people active in different product

• Project

Two tabs-

- existing project
- new one

After clicking new tab will come and

Ask for a particular operation to perform with time limit and person assigned to it.

▶ The project manager can start project only.

operation	time	Assigned to
milling	2-3-2021---4-32021	xxxxxxx
filing	4-3-2021----9-3-2021	yyyyyyyy

- ## **Discuss**

  - It's like to communication between different employees.
  - Project manager can assign task
  - Can resolve issue/alert

- ## **Work progress**

- It contains two charts combined one is water fall model (it defines which work will be done after a certain work) and another is Gantt chart (defines time required for production).

- we can divide 2 charts also
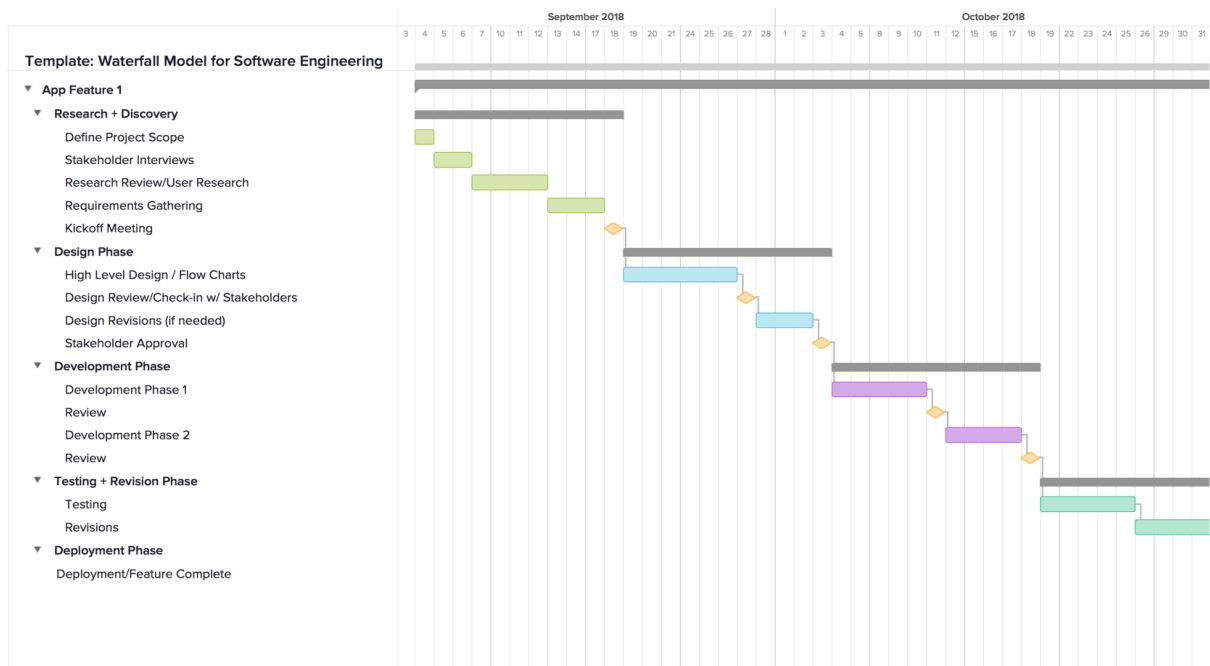
Inventory

▶ It contains 3 points

▶ Amount of stock in inventory

▶ Work on progress

▶ If the stock in inventory goes down to certain data recorder will get red.after placing order supplier provides raw material. There may be different raw material we will use dropdown method to choose raw material.

▶ Reorder automatically

82	62	REORDER
stock	processing	

STEEL ⬇
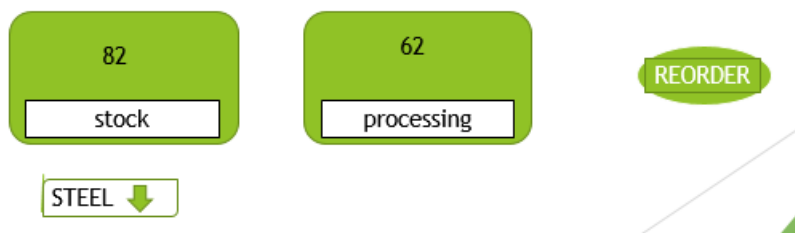
DOCUMENTATION

▶ It includes all business deal records, bonds paper

▶ Also the manuals to handle raw material and specific machineries

Logistics

▶ It is the final part of manufacturing module.

▶ So logistic should be informed before 15 days of work completion with 3 days tolerance, in set up we can customise it.

▶ Logistics should confirm that every product is perfectly packed or not. if not it will create alert in homepage

EMPLOYEE

▶ It is the most crucial part of production management

▶ It indicates no of employee assigned to particular work.

▶ Entry and exit time stamp must be mentioned.

▶ Every day during closing stamp they should maintain feedback form like

questions	yes	no
Quality of raw material good?	✔	✘
Do your machine need maintenance?	✘	✔
Are you going for holidays in next seven days?	✘	✔

By clicking cross sign will create alert in home page, which will alert everyone and project manager will resolve the issue.

Forecast

It needs previous data of project.it must be a regular client's project so we can order our raw material in advance or we can see what will be expected material requirement
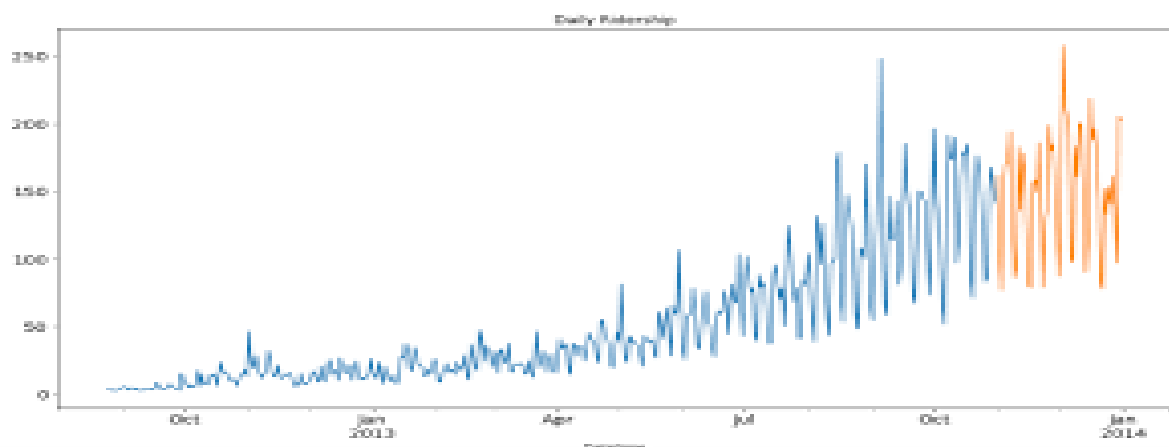
<u>Setup</u>

It decides

- ▶ How much person can be in a group of work

- ▶ Colour background of webpage

- ▶ No of maximum project can be handled

- ▶ No of items of raw material.

- ▶ Logistics advance alert.

- ▶ Types of operations

FINDINGS AND RECOMMENDATIONS

Summary of Findings

- Most of the customers were looking for more well-known company service, where esparse matrix concentrating on their own hrm,crm,school erp module.
- Pricing is low and ui is user friendly in each module..
- All the modules are not perfectly structured.
- Very few experts are in production team so interns cannot explain all the terminology to customers.
- Company depends mostly on interns they have few developers.
- Some customers are asking for the integrated erp module. Due to low capital power they can't provide such type of solutions.
- As it is a start-up. Many customers don't know about the company
- Esparse matrix was spending a small amount of money on promotional activities,

RECOMMENDATIONS

- They should hire more number of developers to build efficient module.
- Integrated module should be created
- Training of basic terminology must provide to new employee
- Customer query should be resolved
- Developer should more focused on customer feedback

Conclusion

The utilization of Enterprise Resource Planning software allows companies to decrease the time it takes the company to get paid for its goods or services after the sale.

 Employing an ERP system allows for increased cash flow. The utilization of the ERP system's integrated system architecture removes the necessity for multiple, different systems to be used within the company and consolidates to the same system across multiple geographies.

Different locations can use and see the same data regardless of the physical geography and eliminates the knees for storing redundant data in multiple physical locations. The ERP system also eliminates the requirement for each location to upload or extract data to and from the central data storage site.

ERP systems increase productivity by integrating data and processes across multiple departments and location which allows our company to move product faster, process orders quicker, invoice customers more aptly and reconcile shipments sooner. Information flow is the lifeblood of any company.

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