RheinBrücke

Buyer's Guide to Choose ERP for Discrete Manufacturing Enterprise

A RheinBrücke eBook

Content

Introduction

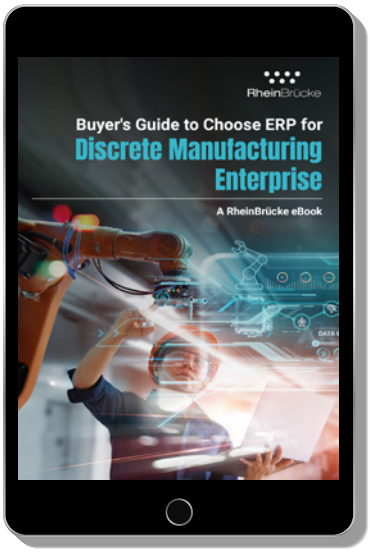
Implementing a new ERP is an important initiative for a discrete manufacturing enterprise. An ERP creates a lasting impact that helps an enterprise reach the next level. It saves costs, helps increase revenues, improves supply chain efficiencies, digitises your business, improves productivity of resources and helps manage business risks.

While the benefits are many, it also involves a significant investment of time, effort and money for the enterprise. It also requires coordination and considerable change management from all the departments and business functions in an enterprise.

Therefore, making this process smooth and beneficial, selecting and working with the right ERP and ERP solution provider is a crucial decision for a discrete manufacturing enterprise.

This e-book is a guide to help you choose the right ERP for a Discrete Manufacturing Enterprise. In this e-book, we have answered some of the questions a discrete manufacturing business may have while evaluating an ERP along with relevant features, functionalities & capabilities that they need to consider.

Some of the questions this e-book answers are:



- When should a Discrete Manufacturing Enterprise Evaluate a New ERP?
- What are the Factors to Consider to Evaluate an ERP for Discrete Manufacturing?
- What should be the Functional Capabilities of ERP for Discrete Manufacturing?
- What are Technical Aspects to Consider while Evaluating the ERP?
- What features in an ERP save Costs & Increase the Revenue Potential?
- Which capabilities of ERP Improve the Productivity of a Discrete Manufacturing enterprise?
- What Aspects of ERP help in Managing Business Risks, including Cyber Risks?

- How to Select the Right ERP Vendor for the Business?
- How to evaluate the Implementation Partner for the ERP implementation?

We are sure these insights will add value and ease your evaluation journey.

When Should A Discrete Manufacturing Enterprise Evaluate A New ERP?

Today, small and large discrete manufacturing enterprises rely on business application software. It could be an accounting software, a custom-built software, a business system, or ERP from a solution provider that manages some of the business functions of an enterprise.

However, there are some compelling reasons or trigger points when a discrete manufacturing company should consider evaluating an ERP solution. Here are a few of them:

Departments & Applications Working in Silos

When departments are working in silos and using separate software or manual processes, the business enterprise has disintegrated inefficient processes and multiple versions of the truth. It also leads to delays in execution, problems in coordination and inadequate information & analysis. A good ERP solves these problems by streamlining processes and real-time information flow across departments with one business software.

Excessive Use of Spreadsheets

When employees rely heavily on spreadsheets for their daily work, it's a sign that it's time to consider implementing an ERP system. Overreliance on spreadsheets can result in inconsistent data, lack of control, information islands, limited access to information, increased business risks and poor business analytics.

Absence of Industry's Best Business Practices

When the business cannot implement the best business practices followed by industry peers such as TQM, Supply chain integration, Lean Manufacturing, ISO compliance and Audit compliance etc., then it is time to consider an ERP solution. A good ERP has built-in processes and templates that help implement the industry's best business practices.

Dependence on Emails and IMs for Day to Day Work

Similarly, suppose departments depend excessively on emails, telephonic conversations and Instant messengers for coordinating day-to-day operations; it is a sure sign that there is inefficient information flow between business functions. This calls for a need to streamline processes and information flow with the help of an ERP for timely and accurate work execution.

Unable to Streamline Costs of Production & Shipments

If a manufacturer cannot streamline and control the cost of production and shipments, it is a sign that it may require an ERP. An ERP helps optimise the inventory and shipment costs with effective demand & supply planning. It reduces the cost and time to produce by capacity planning and resource management. And finally, reduces machine downtime & maintenance costs by efficient asset utilisation and plant maintenance.

Unable to Use Technology for Business Improvement

When your business cannot leverage technology for business improvement and digital transformation initiatives, it is time to upgrade your ERP. Modern ERPs use technologies such as mobile apps, e-commerce or EDI/machine integration, Industry 4.0 tech trends such as IoT, Artificial Intelligence, Machine Learning, Advanced Analytics and Business Simulations, Integration of Supply chain with vendors and customers, etc to bring about digital transformation to the discrete manufacturing business.

Continuous Situation of Excess or Shortage of Inventory

When the business faces inventory excess or shortage continuously, it means that the material planning is not in sync with the customer demand. As a result, the enterprise faces inventory excess or shortage, leading to increased logistics costs or delivery delays. Moreover, money locked in working capital leads to cash flow pressures. Such situations indicate that the business enterprise needs an ERP to help in supply and demand planning and cash flow management.

An ERP helps optimise the inventory and shipment costs with effective demand & supply planning.

Customers Complaining about Deliveries & Quality

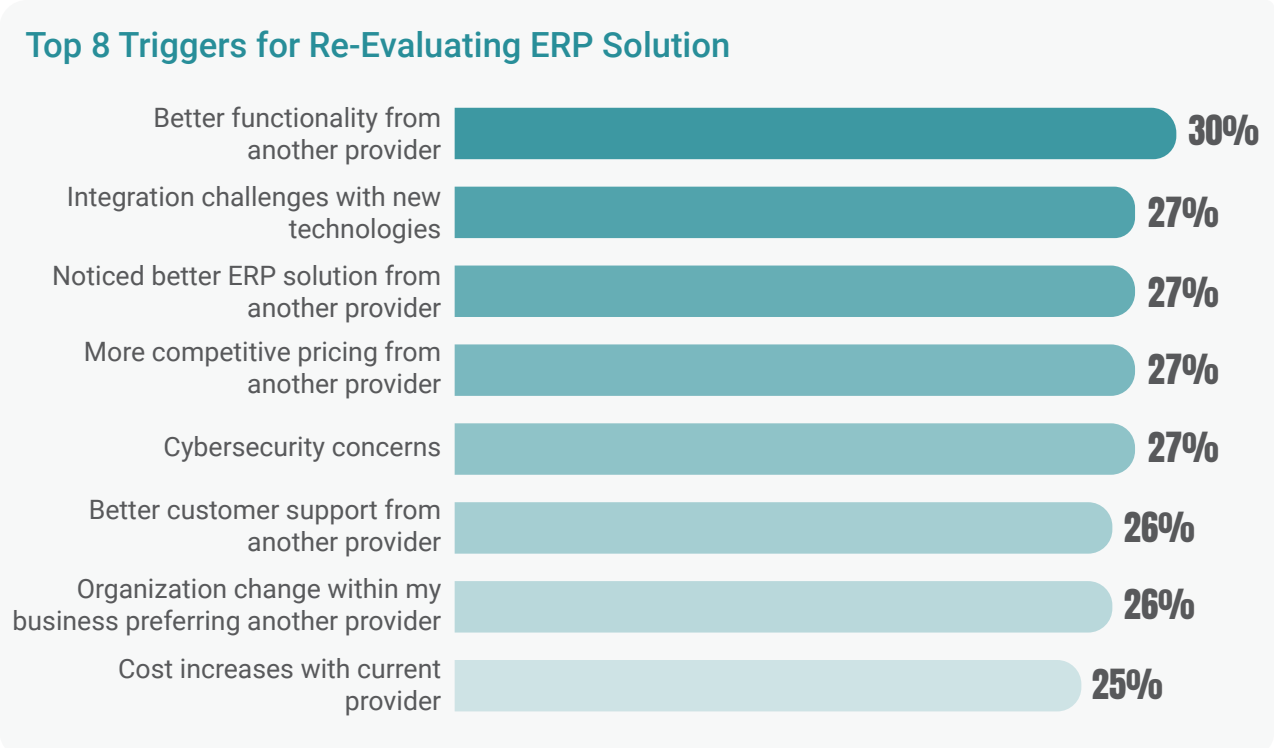
If customers are unhappy about products and services due to quality issues and delivery delays, it is a sign that the enterprise needs to change to a suitable ERP solution. These issues happen when material and production planning or quality management is done incorrectly, leading to delivery delays and the rejection of goods shipped. An ERP solution helps in supply chain planning and quality control.

Request from Investors to Migrate to an ERP

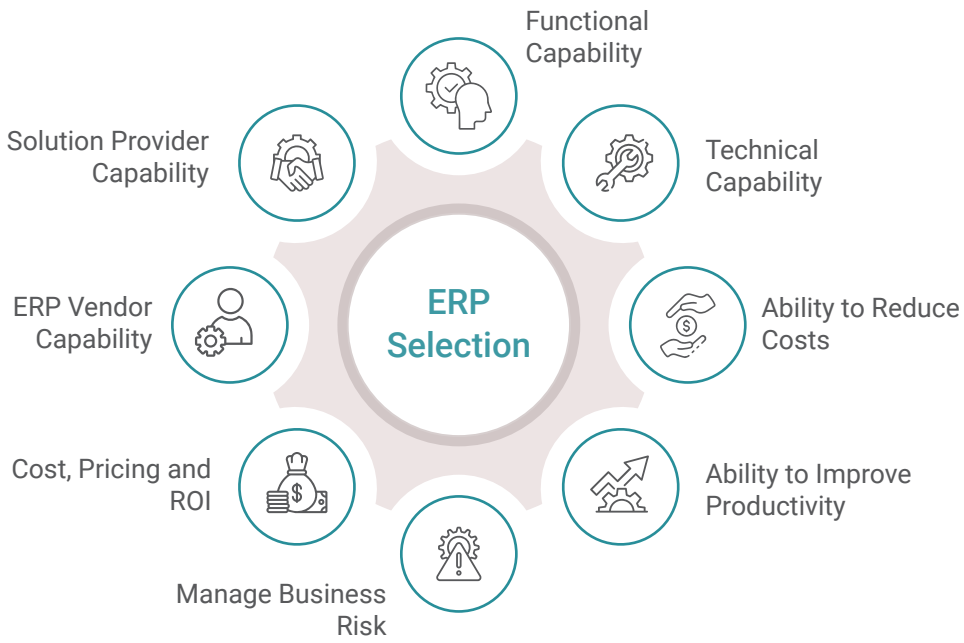
Another compelling reason to migrate to a good ERP is when the investor's investment decision depends on implementing a new ERP system. Investors such as banks, Equity Investors, or Venture Capitalists get better confidence in a manufacturing enterprise witha sound ERP system that proves structured processes and systems are in place.

Factors to Consider to Evaluate an ERP

Evaluating and choosing the right ERP for a Discrete Manufacturing Company requires a multi-faceted approach. To view it from a different perspective, let us look at the Top 8 Triggers, according to *Epicor's Manufacturing Industry Insights Report 2022*, and why manufacturing customers want to evaluate a new ERP for their business:



Based on these insights, we broadly classify the Top 8 Factors to consider while evaluating and selecting ERP. The diagram below gives a quick snapshot of these factors.



Functional Capability

The functional capability of the ERP addresses the business functions and processes of the discrete manufacturing enterprise.

Technical Capability

The technical capability of the ERP is the ability to use today's modern technology to bring business benefits to the enterprise.

Ability to Reduce Costs & Increase Revenue

ERP capabilities that help enterprises save costs across all business functions and increase the revenue potential of the enterprise.

Capability to Manage Business Risk

Organisations face the following types of business risks: Strategic Risks, Compliance Risks, Operational Risks, Reputational Risks and Cyber Risks. While evaluating ERPs, a discrete manufacturing company should look at capabilities and features to help them manage these risks.

ERP Vendor Profile

The use of an ERP typically spans 5 years or more, so it is important to have a detailed understanding of the ERP Vendor to know their commitment toward their customers in that market.

Implementation Partner Profile

Implementation Partners of the ERP provide business enterprises with last mile support for their ERP needs. The implementation partner's quality and commitment are crucial for ERP implementation success, making it a very important aspect to evaluate.

Ability to Improve Productivity

Tools in an ERP that help the business improve the productivity of the 5Ms of an enterprise: Manpower, Machines, Money, Materials and Methods.

Functional Capabilities of ERP for Discrete Manufacturing Industry

The functional capability of an ERP refers to its ability to handle various business functions and processes in a discrete manufacturing enterprise. It spans Financial Accounting, Supply Chain Management (including Manufacturing and Quality Control), Customer Relationship Management, Human Resources Management, Product Engineering, Asset Maintenance and Business Intelligence.

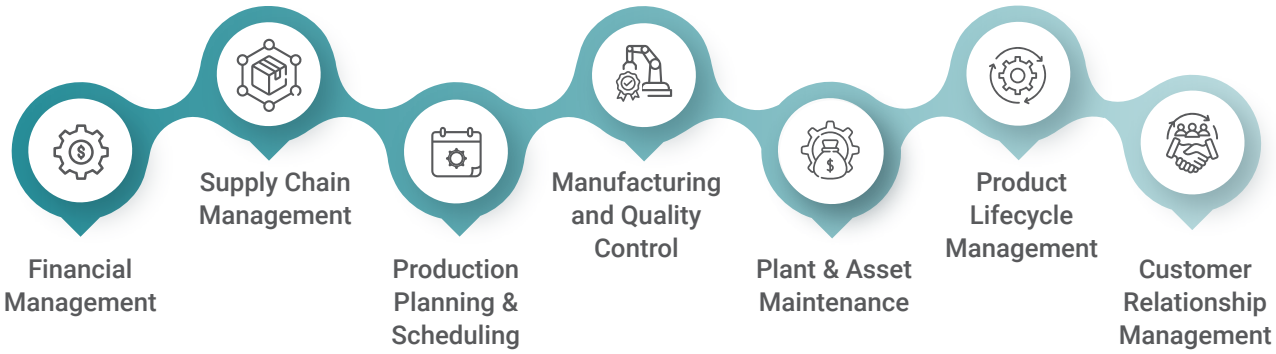
According to Epicor's Manufacturing Industry Insights Report 2022, about 30% of manufacturers evaluate another ERP if the solution lacks capability. As it is a long-term investment for a discrete manufacturing company, it is important to give adequate weightage to the completeness of the functionalityduring evaluation and selection.

Many ERPs may claim the availability of the breadth of these functionalities. But it is important to evaluate the depth of the functionalities they will provide. When the functionalities are offered superficially, it only looks at partial automation or record-keeping. This leads to dissatisfaction and enterprises start re-evaluating ERPs or work with a sub-par ERPs without any significant benefits.

__30%__ of manufacturers evaluate another ERP if the solution lacks capability.

Enterprises can achieve productivity improvement and cost savings only with an ERP that offers capability depth.

This section focuses on some of the value-adding functionalities that provide depth to the discrete manufacturing ERP.



Note: Exhaustive list available as Annexure 1.

To simplify your evaluation process, an exhaustive list of ERP capabilities required for a discrete manufacturing company has been annexed as Annexure 1.

Financial Management

Multi-Company Consolidations

Ability to consolidate different books and companies and merge their balances into a single, consolidated view of financial information. This is especially useful when the enterprise has multiple subsidiary companies and requires financial consolidation.

Statutory Compliance & Country Specific Functionality

The solution should support statutory and tax compliance in the countries the business operates or plans to operate, including electronic reports in multiple formats and statements required by law.

AP Invoice Automation for faster invoice processing

Ability to scan, automatically match & process invoices to speed up the accounts payables process. This comes handy when a company deals with a high load of vendor invoices.

Tools for Financial Planning, Simulations and Analytics

Availability of BI tools with drill-down capabilities, interface with Microsoft Excel and data visualisation capability generate custom-built financial statements, budgeting, forecasting and simulations.

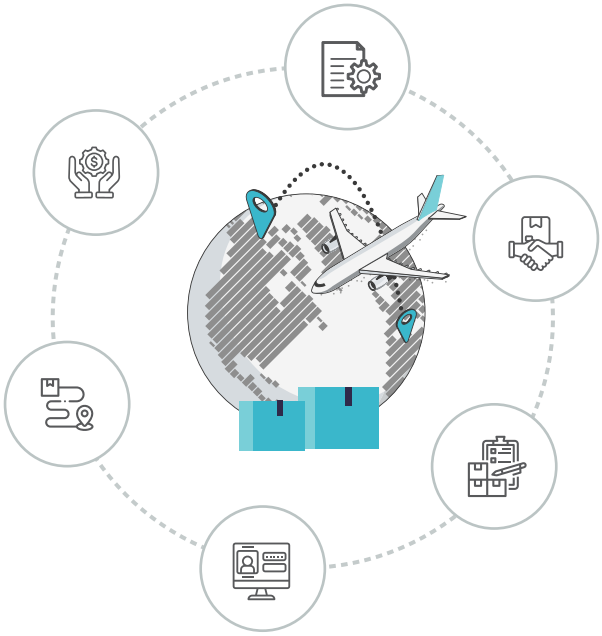
Credit and Collections Management to reduce DSO

Ability to manage credit for customers and customer group accounts. Customer self-service portal helps customers view the invoice and outstanding information. Workflow-based collections management includes automated Receivables and Collections Management and defining collection templates for automated customer communications. Automated collections management recieves outstanding payments faster from customers.

Supply Chain Management

Requisition Management to regulate Procurement Spending

Online workflow and purchase requisition tool provides organizations visibility and regulates procurement spending. It acquires spending data to negotiate bulk purchase discounts from suppliers. It also assigns preferred suppliers for particular products, sets the right spend limits for individuals and assigns the chain of authority for approving purchase orders.



Supplier Relationship Management for Optimising Purchase Costs

Enables procurement staff to efficiently obtain raw materials or subcontract services from one or more suppliers. It includes features like requesting quotes (RFQ), evaluating supplier responses, and selecting vendors based on quantity, price, and delivery requirements.

Supplier Portal for Supplier Integration

A web-based portal for suppliers where suppliers to update their information, answer requests for information and confirm changes to purchasing orders. It improves supplier connections and allows your organization respond faster and more accurately to supply changes.

Tracking Goods in Transit and Manage Landed Costs

Track and manage shipment activities and receipts It includes auto-invoicing on shipment and printing customizable bill of lading forms for shipments. Additionally, it enables tracking customer and supplier shipments and accounting landed costs against relevant parts, to get the true costs of materials, parts or finished goods.

Inventory Planning and Optimisation

Ability to do demand planning, inventory optimization and supply chain analytics helps drive sales and inventory operations planning. It includes forecasting methodologies, optimization techniques and consensus demand and inventory planning.

Tracking Inventory Movement using Barcodes & Wireless terminals

Tracks inventory in real time with complete control and visibility of raw materials and work in process throughout the enterprise. It produces electronic requests for materials, dispatches materials and tracks inventory movements of all inventory—including raw materials and work in process using wireless terminals and bar coding technology.

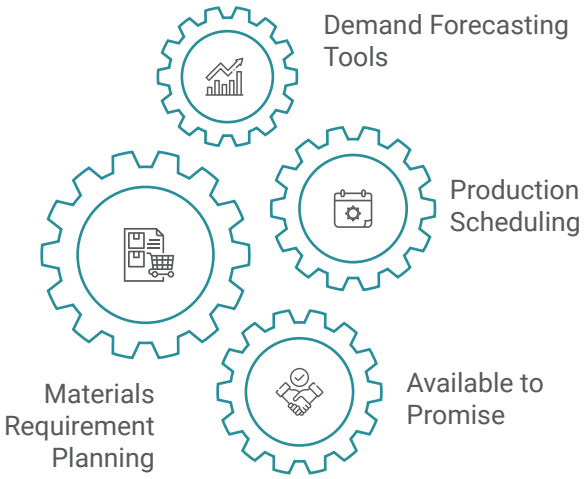
Production Planning & Scheduling

Demand Forecasting Tools to Accurately Demand for MTS Items

The ERP should have demand forecasting tools if a discrete manufacturing company has Make-to-Stock (MTS) items. These tools help forecast the finished goods for the business to produce based on various historical factors: sales, inventory usage, trends, seasonality, promotions & events, etc. Further, if the tools perform statistical simulations automatically, the demand forecasts are more accurate.

Production Scheduling to Plan Production based on Capacity

For Make-to-Stock (MTS) items, Production Scheduling is a useful functionality to finalise the long-range and short-range production plans based on demand forecasts and production capacity constraints.



Available to Promise to Check Demand Fulfilment

Available to Promise is a feature that suggests the availability of finished goods for sale on any given date. It considers projected inventory, planned production and planned deliveries to customers. If the finished goods are unavailable on given dates, it suggests the earliest dates they can be made available.

Materials Requirement Planning (MRP)

The primary function of MRP is to create purchase orders and production order suggestions based on customer orders, demand forecasts and master production schedules. It considers the Bill of Materials (BOM) and the Routing for producing items, available machine and resources capacity, and inventory of raw materials. Based on this information, it suggests the planned purchase and production orders. It also considers the typical lead times from the vendors before making purchase order suggestions.

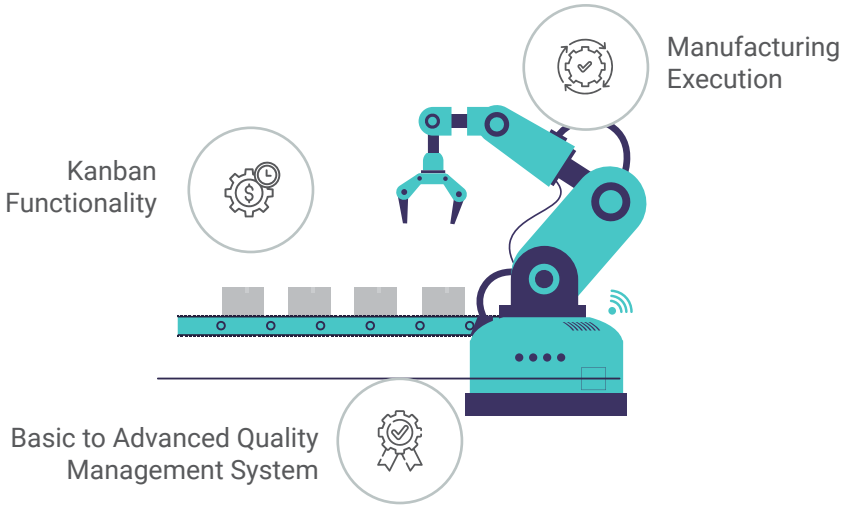
Manufacturing and Quality Control

Manufacturing Execution System (MES) for Production Control

A system with easy-to-use interface (touchscreen, mouse, bar code, or keyboard interface) for the plant floor that records plant-based transactions (production, quality and inventory activities) and provides real-time visibility of the operations in the shop floor. It accurately measures the production activities and streamlines the production operations & costs.

Advanced capabilities in MES utilises Industry 4.0 technology on the shop floor – such as cyber-physical systems, and Internet of Things (IoT) sensors, and

other tools like Statistical Process Control and Statistical Quality Control. Based on this, it collects production-related data directly from machines using sensors, provides intelligence and predictions on machine performance & downtime and prevents the manufacturing of bad parts.



Kanban Functionality for Lean Production Practices

Due to rising competition and the impact of online supply chains, customers now have higher expectations. They seek greater product flexibility, smaller and more frequent deliveries and higher product quality, all while expecting the lowest prices.

Lean Production provides specific functionality to discrete manufacturing companies to meet these challenges and optimize plant floor operations, including adopting Lean Manufacturing Kanban functionality to pull rather than push products through the manufacturing process.

Kanban functionality (i.e., a signal to manufacture or move products) offers the functionality to manage several systems for Kanban control. Inventory levels or order demand require additional products, so manufacturing real-time Kanbans, manufacturing flow Kanbans, purchasing real-time Kanbans and stock replenishment Kanbans are automatically requested. The Kanban manages the stocking and order demand for parts flagged as needing Kanban control. User-defined rules flag parts for Kanban control at the part, warehouse, or individual bin or cell location level.

Capabilities include Manufacturing Without Work Orders (Kanban Flow), Cell-based Inventory, Real-time Stock Replenishment Kanban, Real-time Purchase Kanban, Automated Material Flow and Measuring Production Activity Against Lean Performance Metrics. Additionally, it includes support for Lean Metrics and hybrid approaches to Lean manufacturing.

Basic to Advanced Quality Management System for Quality Control

Basic Quality Assurance helps ensures gaining complete visibility into your quality operations from a top-down view down to the individual item level, tying together all quality functions, such as scrapping end parts, rejecting raw materials or tracking first article inspections.

Basic Quality Assurance also involves handling supplier returns by connecting them to Accounts Payable for automatic debit processing. This ensures that the movement of products in and out of quality control within the plant is easily tracked. Inspectors have a list of items to inspect and take appropriate actions in case of any issues, while plant floor employees quickly identify and mark non-conforming parts.

Advanced Quality Assurance

extends Basic Quality Assurance and manages controlled test plans and the results for products, groups of products, processes, and other testing. It provides the flexibility to define testing elements or attributes, along with corresponding lists of attributes to be tested. These attributes are then measured against testing results, enabling clear pass/fail decision criteria. It includes the Statistical Process Control (SPC) data, which can be readily accessed to build the SPC analysis.

Plant & Asset Maintenance

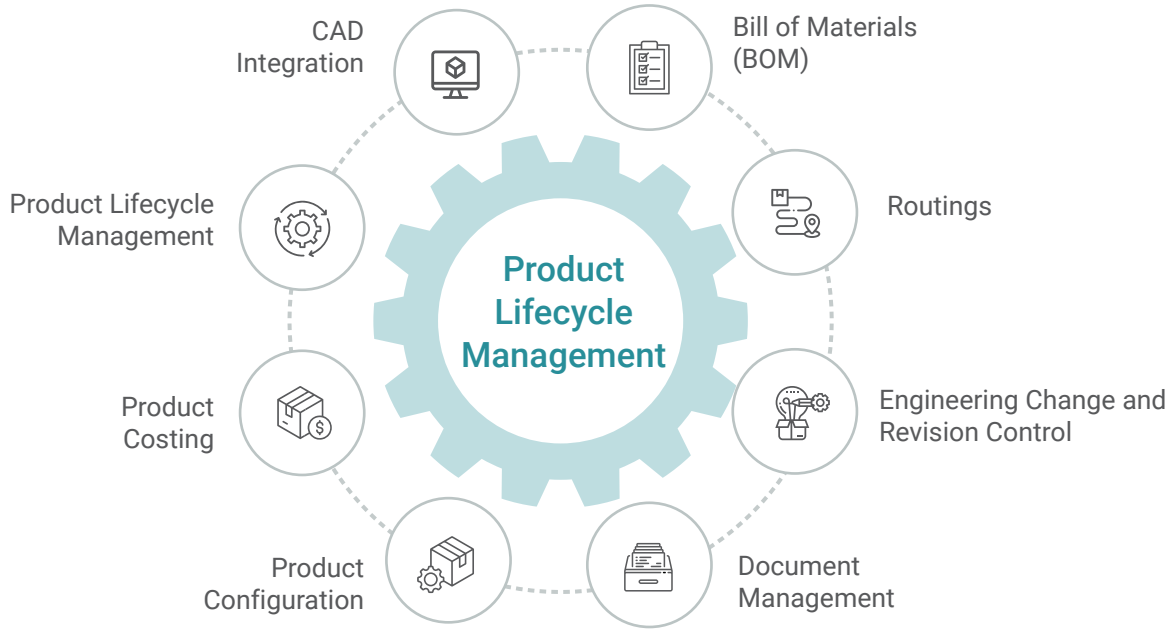
Maintenance Management

Introducing tool sets for maintenance of critical production and facilities equipment. It manages maintenance request processing and enables scheduled preventative maintenance based on predefined schedules. It also supports ad hoc break/fix maintenance for individual equipment items.

The user can schedule facilities and production equipment for maintenance based on a predefined service interval, usage, time, or via manual requests. This includes internal capital equipment, tools, gauges, and fixtures, including items such as air conditioning units, forklifts, shelving and various shop floor tools.

User can schedule facilities and production equipment for maintenance based on a predefined service interval, usage, time, or via manual requests

Product Lifecycle Management



Product Lifecycle Management

The central hub for your process, product data and history. It fosters collaboration and data exchange among enterprise users who interact with your products. This includes product managers, engineers, salespeople, buyers and quality assurance representatives

Product Lifecycle Management (PLM) provides a comprehensive end-to-end solution to manage all aspects of a product's lifecycle, enabling enterprises to control the large volume of electronic documents. It helps you optimize the product lifecycle processes to increase staff efficiency, create better quality products, drive product launches with reduced time and cost, and maximize profits.

It includes: Bill of Materials (BOM), Routings, Engineering Change and Revision Control, Document Management, CAD Integration, Product Lifecycle Management, Product Costing & Product Configuration.

Customer Relationship Management

Marketing & Sales Force Automation

To optimise and manage the company's marketing and sales interaction with its customers and prospects in managing marketing campaigns, lead generation,

opportunity development and order taking.

Mobile CRM

A mobile CRM interface for sales force automation is a big plus to managing activities from the opportunity to order shipment, including managing leads, customers, contacts and quotes.

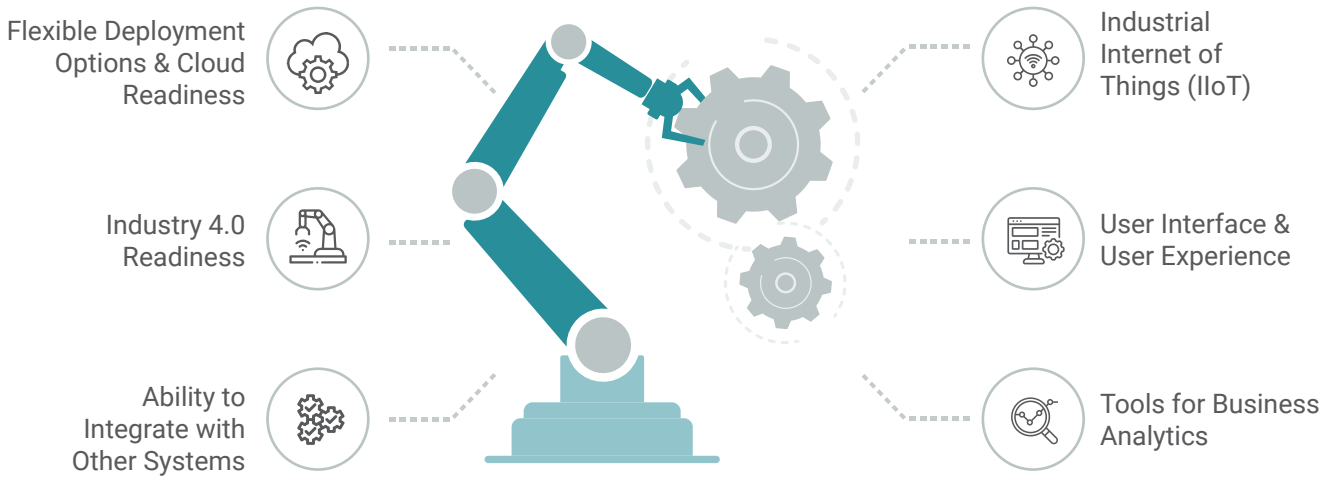
Service Management & Field Service for Better Customer Service

Helps manufacturing organisations optimise customer service and keeps all technicians and customer support personnel informed, responds to customer incidents, and quickly processes returns. It also includes field service management, return material authorisation, service contracts & warranty management, case management, scheduled and break-fix maintenance and mobile field service capability.

E-Commerce Portal to B2B Customers for better customer experience

An E-Commerce portal that delivers a B2C-like customer experience to B2B customers by catering to unique buyer needs through special promotions, price lists, repeat purchases and the ability to pay on account.

Technical Aspects to Consider while choosing an ERP



An ERP to future-proof a business system in adopting and leveraging the upcoming technological changes is important in evaluating an ERP for a discrete manufacturing enterprise.

Here are some technological factors to consider while evaluating ERPs:

Flexible Deployment Options & Cloud Readiness

One critical evaluation criterion for an ERP is flexible deployment options: On Premise, On Cloud or Hybrid.

A discrete manufacturing enterprise should carefully consider adopting a cloud-based ERP solution. Manufacturers have rapidly adopted cloud-based ERP over the last few years, with most businesses now convinced of its many benefits. According to Epicor's Industry Insight Report 2022, 90% of manufacturers find moving to cloud-based ERPs is transformational.

Along with the benefits, they value improved flexibility and adaptability, better security, simple regulatory compliance and enhanced business resilience.

*According to Epicor's Industry Insight Report 2022, **90%** of manufacturers are comfortable with having cloud-based solutions*

However, some business cases may warrant on-premise deployments or hybrid deployments. An ideal ERP should be able to offer flexible deployment options.

Industry 4.0 Readiness

Industry 4.0 refers to a new Industrial Revolution phase focusing heavily on interconnectivity, automation, machine learning, and real-time data. Industry 4.0, with IIoT and smart manufacturing, marries physical production and operations with smart digital technology, machine learning, and big data for a more holistic and better-connected ecosystem for companies focusing on manufacturing and supply chain management.

As these technologies enter the mainstream and become more accessible and affordable, businesses across various industries are adopting them to transform their value chain, gain a competitive edge and improve customer experiences.

Deloitte and Word Economic Forum have launched the Global Lighthouse Network - guiding enterprises in adopting the Fourth Industrial Revolution (4IR) technologies across industries. In a survey by *Deloitte* 94% of executives agreed that AI is crucial for success in the next five years.

To harness the power of Industry 4.0, the ERP system should support the implementation of relevant technologies like IIoT, Big Data, Cloud Computing, Artificial Intelligence and Machine Learning to enhance manufacturing processes and enable smart manufacturing.

*According to a survey by Deloitte, **94%** of executives concur that success over the next five years depends on AI*

It should be able to offer features like Dynamic MRP, AI-Powered Virtual Agents, Supply Chain Traceability, Predictive Maintenance, Analytics using big data generated by supply chain, IoT and machine integration, etc.

Ability to Integrate with Other Systems

Easy integration via standard APIs and the availability of pre-built integrations with popular cloud solutions is one of the critical evaluation criteria for selecting a suitable ERP. In fact, According to Epicor's Industrial Insights Report, 30% of customers are evaluating a change to their ERP solutions due to limiting integration capabilities.

Here are the following aspects to consider while evaluating the integration capability.

*According to Epicor's Industrial Insights Report, **30%** of customers are evaluating a change to their ERP solutions due to limiting integration capabilities.*

Ability to build custom integrations

The availability of a central business integration platform provides a secure workflow orchestration within ERP and Non-ERP applications. As a result, users can automate tasks and streamline processes to promote efficiency across the supply and demand chains.

Plug and Play Integrations

Availability of an Integration Cloud Platform provides readymade integrations with numerous endpoints, including popular applications, databases, data formats, SOA Platforms and other data formats.

Industrial Internet of Things (IIoT)

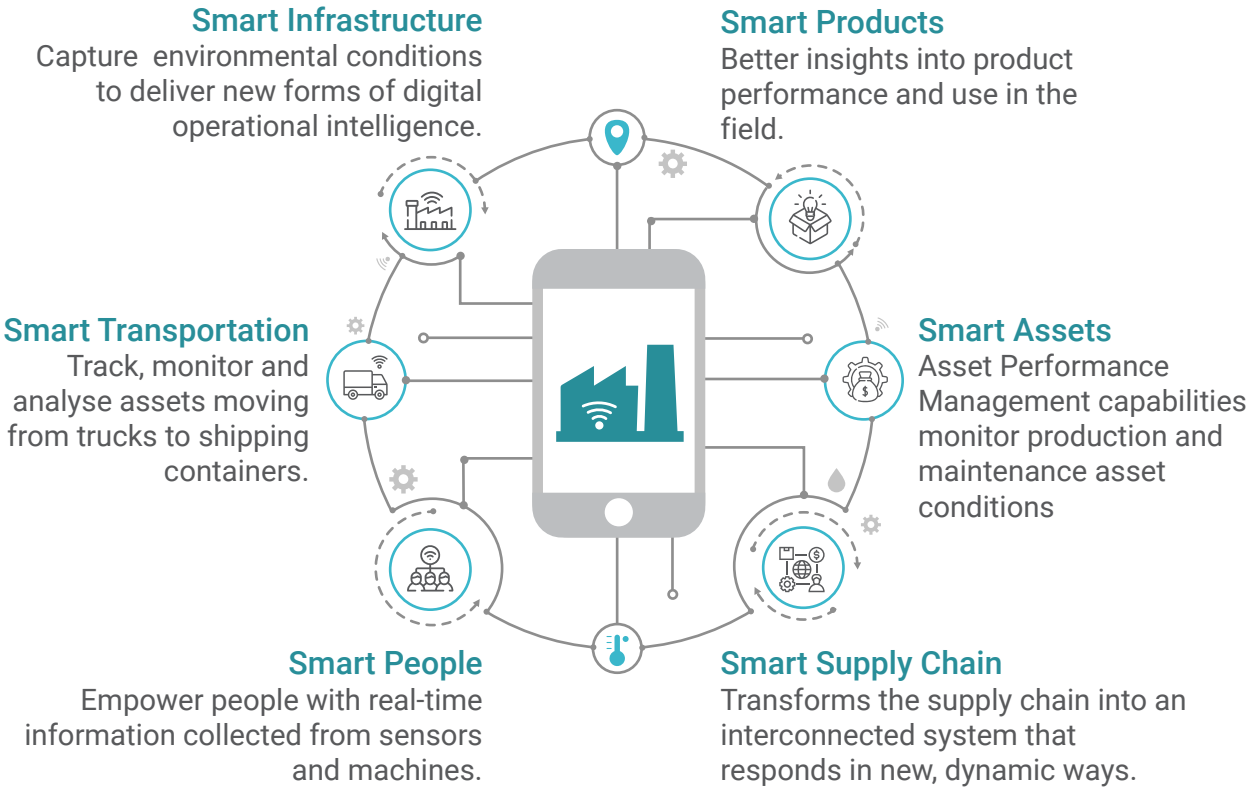
The Industrial Internet of Things or the Industrial Internet is the connection of machines over a network. It's also a considerable part of Industry 4.0. It connects mission-critical machines and devices to how you run your business.

Data collection is the most significant benefit of IIoT giving business owners a crazy amount of accurate, real-time data to make smarter, faster decisions.

With this technology becoming more accessible and affordable, Industrial IoT is gaining rapid adoption with potential use cases across multiple industries. According to *Markets & Markets*, the global IIoT market can reach 106 billion USD by 2026 with an annual growth rate of 7%.

Today, ERPs are building capabilities combining IIoT with the power of Cloud Computing, Artificial Intelligence, Machine Learning and Advanced Analytics for smarter and more intelligent factories and distribution centres.

ERPs with IIoT offer the following capabilities:



User Interface & User Experience

Modern UI & UX for better user adoption

Due to its ability to provide complex capabilities, ERP can become notoriously complex to use. Complexity in usage leads to unutilised features, restricted usage, increased adoption time and investment in user training. Therefore, in selecting an ERP, the enterprise should look at an ERP with easy-to-use modern UI, enables access through modern browsers, is responsive to use across devices and is intuitive with help features across the app.

Collaboration for improved productivity

Another key feature to evaluate is the availability of collaboration and instant messaging features in the ERP, for users to instantly communicate and collaborate with each other.

Mobile Readiness

The days of coming to the office, logging into an ERP system, then leaving it all behind at the end of the day is long gone. Work has moved beyond a PC to multiple devices. In today's always-connected world, users demand access 24/7, with a consistent experience that flows between devices. Support for touch and gestures and the ability to interact with business systems fully beyond simply drilling into analytics is the new normal. Enterprises must consider if the ERP offers mobile responsive screens and mobile applications across devices and platforms.

Virtual Assistants & Enterprise Search

Virtual Agents & Enterprise Search uses bots, search engine technology and natural language processing for quick access to information and accelerate the pace of your business. Easy access to these features via your mobile devices helps in quick decision-making at your fingertips, making this a great value addition to the ERP.

Tools for Business Analytics

Operational Dashboards & Reports

Pre-built reports, dashboards, and trackers are available to help you understand what is happening right now across your entire enterprise.

Machine Monitoring and Reporting

Capturing data directly from machines and operators gives real-time production metrics and analytics in an easy-to-digest, visual manner. This eliminates manual data collection and provides instant alerts for machine conditions, cycle process variations, efficiency and scrap rates. It also enables automated alerts for preventative maintenance and improves overall equipment effectiveness and plant productivity.

Query Wizard to build customised reports and dashboards

The ERP should be able to create operational queries in virtually any area of ERP with a visual drag-and-drop wizard. This helps you build customised reports and dashboards.

Data Visualization Tools

It is ideal for the ERP to have a data visualisation tool with pre-built templates and helps build visually appealing, easy-to-understand charts, graphs and dashboards.

Excel Add-Ins for Excel Based Reporting & Analytics

Most organisations are comfortable using Microsoft Excel or other spreadsheet software for data analysis. Therefore, an ERP with add-ins for Microsoft Excel or any other spreadsheet software is ideal. Users can work on a live ERP database from within the spreadsheet, drill down and analyse information using pivot tables and other analysis tools.

Predictive Analytics

In multiple use cases, ERPs provide intelligent predictions and what-if analytics based on historical data and statistical simulations, IIoT and Machine sensor integration. They are Demand Forecasting, Ideal stock levels, reorder points, lead times, machine maintenance schedules, cash flow forecasting, customer service schedule, etc. It is ideal that an ERP has these intelligent suggestions and predictions help take proactive, positive actions to improve overall business efficiency.

Which Features of ERP will help in Reducing Costs & Increasing Revenue

One of the frequently asked questions when evaluating ERP is- How Can ERP help in optimising costs and improving revenues for the business. Let us explore this aspect in this section.

One of the core objectives of an ERP is helping enterprises save costs across all business functions and enhance revenue potential. Here, let's consider some of the cost elements in a P&L statement and see how ERP capabilities can help optimize these costs or improve revenues.

Optimising the Cost of Production

Fulfilling more production orders

An enterprise can optimise its shop-floor operations based on material and capacity availability with better production and material planning. Moreover, it can also fine-tune its shop-floor plans to accommodate the fulfilment of more production orders.

Reducing the Cost of Raw Materials

With Supplier Relationship Management capability in the ERP, the procurement team evaluates vendors comprehensively and negotiates optimal purchase terms for raw materials and subcontract processes. The ERP also helps monitor contracts, supply chain logistics, incoming quality checks and vendor performance to course correct at the right time. This leads to significant cost savings in purchasing raw materials and subcontracting.

Optimising the Labour Costs

A manufacturing execution system on the shop-floor can optimize labor productivity and reduce labor costs. With a robust MES capability, a manufacturing enterprise provides clear job instructions, work schedules and makes the tools and resources available to the employees for working without disruptions. It can also help in recording their activities, which helps identify the exact cost of production operations.

Reduced Asset Downtime & Maintenance Costs

With a maintenance management system integrated with MES and Planning engine, an enterprise can schedule the maintenance of the machines and other resources to ensure minimal downtimes and disruptions to production. With integration into machine sensors using Industrial IoT, the ERP predicts the time to perform machine maintenance based on their performance and other parameters.

An ERP helps optimise the inventory and shipment costs with effective demand & supply planning.

Reducing the Cost of Sales Rejections & Rework

A strong quality management module in an ERP improves the quality of materials produced, according to the required specifications. A robust quality management system, helps you define the quality control framework and carry out quality control measures during incoming, in-process and pre-despatch activities. This gives a better quality of finished goods, reducing rejections, sales returns and rework.

Improving Revenues & Revenue Potential

An ERP system helps an enterprise make customers for life by consistently giving them positive customer experiences, improving revenues and revenue potential. In this section, let's look at some of these features.

Marketing Automation - to stay connected with prospects & customers

Email campaign tools in an enterprise ERP consistently keep in touch with customers and prospects by sending promotional emails and newsletters. With marketing automation tools, an enterprise can plan and execute digital and physical events with customers and prospects, creating opportunities and enhancing revenue potential for discrete manufacturing enterprises.

Salesforce Automation - helps to sell smarter & close more deals

Salesforce automation tools help an enterprise define sales stages and track opportunities across sales stages. This allows them to plan and manage their sales and pre-sales activities and speed up their sales cycle.

Integrated Product Configuration Tools for customised product offerings

A product configurator walks sales reps and customers through a series of calibrated questions to find the perfect product fit. Triggers and prompts encourage buyers with upsell and cross-sell opportunities with bigger deals that close fast. Through the automatic generation of CAD drawings, files, bills of material, assembly instructions, parts lists, and product renderings, this system sends this information downstream to initiate the ordering, supply chain and production processes.

Available to Promise to commit realistic delivery dates

The Available to Promise capability helps an enterprise commit to realistic delivery dates to customers while order taking. ATP considers projected inventory, planned production and planned deliveries to customers for a specific date before providing recommendations on order fulfilment. If the finished goods are unavailable on the given dates, it suggests the earliest dates they can be made available. Setting the right customer expectations enhances brand reliability and customer satisfaction.

Supply Chain Planning & Optimisation for timely order fulfilment

Enhanced supply chain planning and ERP optimisation help the enterprise meet customer demand on time. With better material planning, tighter production process, optimised capacity utilisation, better coordination with vendors and smarter inventory management, a discrete manufacturing enterprise runs its entire supply chain and production operations in a planned and more efficient manner. This results in a planned output of finished goods and timely deliveries to the customers.

Quality management to make better quality products

A comprehensive quality management system capable of maintaining quality control of incoming, in-process and pre-shipment quality checks can ensure a better quality of finished products. This can lead to better customer satisfaction, enhances the brand image, and gives more reasons for customers to work with the enterprise again.

Customer Service to manage customer calls & service contracts

A strong customer service and field service management module of an ERP helps in responding to customer calls, troubleshooting and solving problems related to your products. With an efficient service contract management and field service system an enterprise can also proactively undertake customer service operations for the customers. This can enhance the customer experience.

Collections Management for reducing invoice outstanding

Inefficient customer recoveries means a greater requirement for working capital and higher interest costs. An ERP with a robust collection management system helps in the timely follow-up of collections from the customers through follow-up reminders, generating and sending them collection letters, emails and customer statements helps in reducing the Days of Sales Outstanding (DSO) and helps collect outstanding invoices from customers faster.

Customer Portal with CPQ to give B2C like E-Commerce Experiences

A customer portal lets customers quickly see and search for product information, place orders, and view shipping, billing, and other account information. Plus, integrating a product configurator with the portal lets buyers choose designs and other attributes, build products on the fly and add them to quotes and orders. This gives customers a great user experience on any device and a faster way to interact with your business for their needs.

Reducing Inventory Carrying Costs

Inventory carrying costs is an accounting term for all the costs associated with financing, storing, and holding unsold or unutilized inventory. It includes:

Storage costs: These expenses are related to renting or owning a warehouse, utilities, and insurance.

Capital costs: This includes interest expenses or opportunity costs incurred while financing the inventory.

Handling costs: These are the costs of labor, equipment and supplies required to handle and move the inventory.

Obsolescence costs: This refers to the expenses incurred when inventory becomes outdated or obsolete.

Cost of theft and damage: These costs arise from the loss or damage of inventory due to theft or other factors.

The carrying cost of high inventory impacts the bottom line of a discrete manufacturing enterprise. An ERP with the following features reduces the inventory carrying costs for a business:

Material Requirements Planning

A strong MRP tool integrated with the purchase module accurately suggests purchase orders in advance to fulfil the production schedule for a particular planning horizon. A "tightly integrated" MRP with the purchase module considers the vendor lead times and suggests the dates of purchase orders, reducing the need for overstocking raw materials required.

Demand Planning Tools

A business enterprise that produces Make-to-Stock items benefits from a demand planning tool that accurately simulates the demand for a forecast period based on historical data and forecasted trends such as seasonality, customer requirements, etc, keeping unsold inventory to a minimum.

Warehouse Management System

A robust warehouse management system in an ERP helps in planning the warehouse layout and inventory storage, managing the inventory movement and utilisation of warehouse resources. This ensures optimal warehouse usage and warehousing cost management.

Inventory Optimisation Tools

These tools optimise inventory parameters like inventory levels, safety stocks, reorder points and reorder quantity based on vendor lead times, holding and handling costs, service level, fill rate, ordering costs and stock-out costs. This maintains optimal inventory levels for smooth production operations minus excess inventory costs for the company.

Integrated Supply Chain Partners

EDI integration or customer and vendor portals in an ERP better connects an enterprise to its customers, subcontractors and vendors. This gives better visibility of the supply chain, faster understanding of supply chain changes and coordinating the consequent corrective actions and reducing the odds of excess or stock-out inventory.

How Does ERP Improve the Productivity of Discrete Manufacturing Enterprise

ERPs help the business improve the productivity of the 5Ms of an enterprise: Manpower, Machines, Money, Materials and Methods. When evaluating an ERP, a discrete

manufacturing company must have a closer look at the tools and features that improve the productivity of these resources.

What is Productivity in Business Context

Productivity is an economic measure of performance that compares the value created (output) with the inputs used to create that value. In business, productivity assesses the value created for the enterprise (e.g., revenue, units produced, intellectual property) by utilizing its resources, including manpower, machinery, materials, methods and money.

Improving Productivity in Business

Introducing a new catalyst helps the enterprise's resources be more productive. Improving productivity in the context of business is the ability to create more value using

the enterprise's resources. Typically, an enterprise resource is productive if it performs the tasks related to the business's goals in a fast, efficient and accurate way.

Focus areas for Improving Productivity

There are 5 focus areas of productivity, called the 5Ms. They are as follows:

Employee Productivity

Employee productivity is assessing value-creating tasks that employees perform in a business. Employees are productive when they consistently work with speed, quality and accuracy, actively contributing to achieving the enterprise's goals. Additionally, they demonstrate productivity by utilising their insights and experience to make informed decisions that benefit the organization. Enhancing employee productivity directly contributes to the success of any organization.

Capital Productivity

Capital productivity measures how well an enterprise's financial investments turn into sales and grow the business. It determines the return on investment invested in tangible and intangible assets. Improving capital productivity ensures enterprise assets are utilised for the business's growth and fulfillment of its objectives.

Equipment, Machine or Resources Productivity

Machines or resources are assets such as factories, machines, tools, robots, suppliers, service providers and technology that convert raw materials into finished goods. Improving the productivity of equipment, machines and resources helps an enterprise utilise them efficiently to produce products, services and solutions.

Method Productivity

Method productivity assesses how the organization's processes run smoothly. Process efficiency helps an organisation assess if its processes help it meet its business objectives. While measuring process productivity determines if the processes have any bottlenecks that cost the enterprise.

Productivity of Materials

Material productivity is the ratio between sales turnover (output) and cost of materials (input).

By optimising its raw materials and semi-finished goods, it delivers finished goods and services. Improved research and development, continuous process improvement, adherence to quality standards and reduced wastage achieves material productivity. Enhancing the productivity of materials reduces the cost of providing its products and services and improves quality for an enterprise.

Improving Employee Productivity with ERP

ERPs help employees stay focused on enterprise goals. With integrated management of processes and data, an ERP helps employees be accurate with business data and information. AI and ML alert and predict potential scenarios to help employees be proactive. It also gives them real-time insights to make decisions confidently and quickly.

Let's examine some of the features that help employees to be productive.

Workflow & Responsibility management to streamline work

A discrete manufacturing company may digitize and configure workflows and processes, manage decisions and obtain end-to-end process visibility with ERP workflow management. The responsibility management module lets users assign workflows and processes to individuals and teams. These determine employee work.

Alerts for Situation Handling & Exceptions Management

The ERP provides alerts when specific situations or exceptions arise in the business processes to inform the relevant employees about business situations that require their attention and initiate necessary actions.

Ability to Predict and Simulate Scenarios

An ERP predicting scenarios by providing what-if analysis, helps employees anticipate situations and make informed decisions.

ERPs may predict cash flow, material requirements, capacity utilization, quality control measures, asset maintenance schedules and simulating production scenarios using Digital twin technologies.

Analytics, KPIs & Dashboards for better business insights

Business analytics modules with pre-built reports, dashboards, and KPIs give employees insights to make the right decisions. An ERP with prebuilt analytics and an analytics framework lets the enterprise report business data from various virtual data models, work with real-time data, and generate reports, dashboards, KPIs and visualizations.

Task Inbox for bringing efficiency in work execution

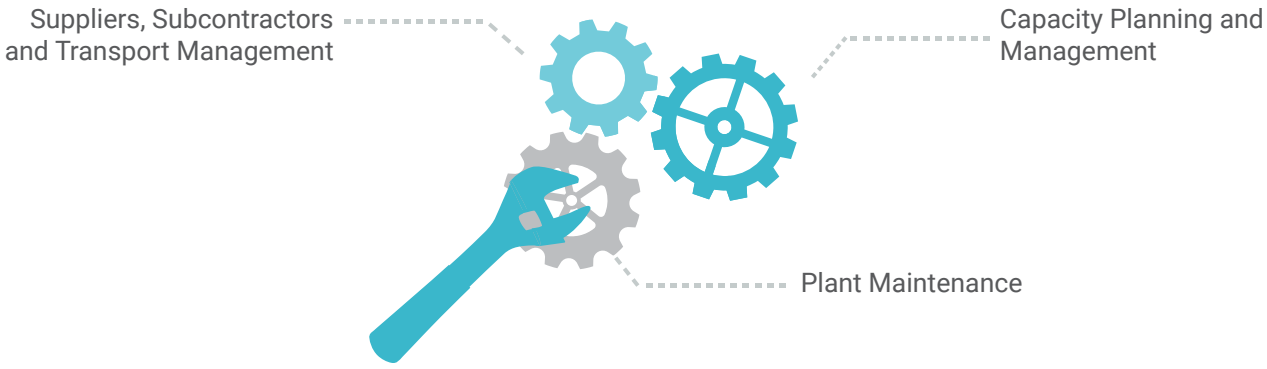
The task inbox instantly shows the information on the work they need to perform. The ERP alerts users of process deviations and delays, so they can take corrective answers and maximize productivity.

Increasing the Productivity of Machines & Resources

ERP tools optimise enterprise machinery, tools, and resources for maximum productivity. Planning and managing maintenance keeps machines in good working condition.

ERP also helps the enterprise optimize its external resources (suppliers, subcontractors, transporters, etc.) to improve productivity.

Let's examine how an ERP might boost the productivity of internal and external resources productivity in an enterprise.



Capacity Planning and Management to maximise capacity utilisation

ERP capacity planning allocates resources for capacity levelling and schedules production steps for manufacturing. Capacity planning helps enterprises utilize machines to optimal capacity and productivity. Integrating planning, scheduling, and execution helps deliver finished goods on time.

Plant Maintenance to avoid breakdowns and loss of productivity

Plant maintenance keeps equipment in good condition and prevents breakdowns and loss of productivity. The enterprise can keep assets such as machines and production installations in working order through inspection, maintenance and repair measures.

Suppliers, Subcontractors and Transport Management

An ERP system improves resource productivity by optimising external factors like suppliers, outsourced manufacturers and transporters. It includes modules for supplier relationship management to track and optimize supplier relationships, subcontract management to plan and manage external manufacturing processes and transportation management for efficient freight planning and material transportation.

Enabling Material Productivity with an ERP

A Discrete Manufacturing ERP system reduces costs and optimises material productivity. It achieves this by effectively managing inventory levels, ensuring quality materials, minimising wastage and returns, and facilitating research and development for product improvement. Additionally, it enables efficient product lifecycle management, resulting in the creation of better products at lower costs.

Though we have discussed some of these features in earlier sections, let's recap these features from a material productivity perspective:

Material Planning and Optimisation to maintain optimal inventory levels

An ERP system with a robust Materials Requirements Planning (MRP) engine ensures materials are available for production orders. Integration of MRP and production planning with subcontracting processes allows for effective material planning by subcontractors. Additional features like inventory level optimization prevent overstocking or understocking. MRP simulations enable running multiple scenarios to plan inventory requirements, minimizing the risk of unused or unsold inventory.

R&D and Product Lifecycle management for continuous product improvement

Product lifecycle management (PLM) is vital for manufacturers seeking innovation, cost efficiency, and speedy time to market. Designers and engineers gain real-time access to essential data with an ERP system that includes PLM capabilities. This integrated approach links CAD data, bill of materials, and other enterprise data sources, efficiently managing product data throughout the development lifecycle.

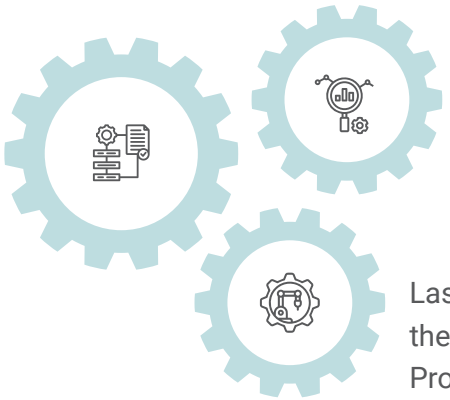
Quality Management to ensure the quality of products & processes

An ERP with a quality management system ensures product, process and service quality. This reduces waste, returns and improves customer satisfaction. The quality management module assists in planning quality control measures, inspections, and identifying potential failures or weak points using structured approaches like Failure Mode and Effect Analysis (FMEA). It also provides tools and insights for inspection data, aiding in quality improvement programs.

Improving Process Efficiencies with an ERP

An ERP system offers 3 key benefits for improving process productivity:

It provides an enterprise access to various established and successful business best practices.



It offers tools such as application lifecycle management which provide insights into process efficiency.

Lastly, an ERP system supports the implementation of Robotic Process Automation (RPA) tools, bringing speed and efficiency to processes.

Let us look at some of the tools an ERP should have to help a discrete manufacturing enterprise on the journey of continuous process improvement.

BPM Tools for Configurable Best Business Practices for the industry

An ERP should offer best business practices across various functions to improve process efficiencies. It should also offer configurable business processes that can be fine-tuned to meet specific enterprise requirements. Incorporating a Business Process Management tool within the ERP enables real-time, event-driven workflow orchestration, process automation, and application integration without the need for programming.

Process Monitoring to monitor and detect process inefficiencies

An ERP should include tools like Application Lifecycle Management and master data governance to enhance process transparency and monitor process health. This enables enterprises to identify areas for improvement and take corrective actions accordingly.

Robotic Process Automation to bringing speed and efficiency

An ERP should support built-in RPA tools and integration with external Robotic Process Automation tools to automate processes and enhance speed and efficiency in the enterprise's operations.

How Can ERP Manage Business Risks

Business risk is the exposure a company has to factors that will lower its profits or lead it to fail. Anything that threatens a company's ability to achieve its financial goals is considered a business risk. Typically, organisations face the following types of business risks: Strategic Risks, Compliance Risks, Operational Risks, Reputational Risks, Cyber Risks and Business Continuity Risks.

While evaluating ERPs, a discrete manufacturing company should look at capabilities and features that will help them manage these risks.

Managing Strategic Risks in Changing Times

Strategic risk arises when a business does not operate according to its business model or plan. When a company does not operate according to its business model, its strategy becomes less effective over and it may struggle to reach its defined goals.

Every enterprise needs to develop new business models to avoid being disrupted, gain efficiencies to fund innovation and transform mission-critical systems. An ERP with the ability to catalyse and adopt digital transformation and move towards Industry 4.0 will enable the enterprise to successfully manage strategic risks in the future. It will help enterprises to take the lead with industry innovation for top-line, bottom-line, and green-line growth.

An ERP with the ability to catalyse and adopt digital transformation and move towards Industry 4.0

Managing Compliance Risk of an Enterprise

Compliance risk primarily arises in industries and sectors that are regulated or when a brand fails to understand the individual requirements of the state/country that it is operating within.

Compliance risk refers to the potential negative consequences an organization may face, such as legal penalties, financial loss and material damage, when it fails to adhere to industry laws, regulations, internal policies, or recommended practices.

To address these risks, an ERP should have the following capabilities:

Global Trade & Statutory Compliance

For global business operations, the enterprise requires an ERP system that ensures compliance with local laws, meets international security standards and fulfills regional documentation requirements.

Energy Monitoring

An ERP's Energy Monitoring tool tracks and analyses energy use within a manufacturing plant. This enables businesses to identify energy-saving opportunities and reduce consumption by monitoring equipment-level energy usage.

Product Compliance

The ERP system should facilitate compliance throughout the product lifecycle using product compliance software. It should effectively manage regulatory and sustainability requirements, track registrations and substance quantities, classify products, create compliance documents, and ensure proper packaging, transport and storage of hazardous materials with accurate labelling.

Environmental and Energy Management

Businesses today focus on carbon emissions reduction, energy conservation and sustainable supply chains. ERP systems help companies in achieving environmental and energy management goals through strategic sourcing and procurement, logistics, application of lean principles and virtualization.

Managing Operational Risks of an Enterprise

Operational risk stems from internal factors when a company faces challenges in its day-to-day operations. Some examples of operational risks include Financial Risks, Trade Compliance Risks, Supplier Risks, Production Risks and Quality Risks.

Let us look at some of the features that an ERP should have to manage these risks.

Managing Financial Risks

The ERP needs a robust module for statutory and tax compliance to ensure adherence to local laws. It should also include audit trail capabilities to meet business audit requirements. A reliable audit, transaction monitoring & data analytics system in the ERP identifies financial transaction downturns that may lead to company losses.

Managing Trade Compliance Risks

To handle international trade risks, the ERP system must meet the foreign trade requirements of a business. Handling international trade compliance involves following import and export rules set by the government. It should manage licenses for export and import processes based on legal requirements, manage and release blocked documents for legal control and manage countries or regions under embargo restrictions.

Managing Supplier Risks

The ERP needs tools to monitor and manage supplier risks. Supplier assessment and contract review ensure the right ones are chosen. It should also evaluate and manage backup vendors for items to handle disruptions. The ERP should provide intelligence on critical items or services, helping the enterprise build resilience in its supplier network. Supplier assessment features help manage commercial risk by monitoring supplier performance using data and opinions.

Managing Production Risk

Production risks are situations that disrupt the production operations of enterprises. These include material shortages, machine breakdowns and operator injuries. An advanced ERP with material planning, production scheduling and maintenance features ensures the availability of materials and machines for smooth production. To manage safety risks on the shop floor, the ERP should record process incidents, near misses and safety observations for investigation and corrective actions to prevent future incidents.

Managing Quality Risks

Customer dissatisfaction is a big risk for enterprises when they fail to deliver goods and services effectively, resulting in lost future business. To manage this risk, the ERP needs a robust quality management system to plan quality control measures, conduct inspections and improve overall quality.

Material planning and production scheduling and maintenance management capability of an ERP to ensure smooth production process operations

Managing Cyber Risks & Cyber Threats

Cyber risk refers to the potential for financial loss, disruptions or damage to an organization's reputation from failure, unauthorized access or misuse of its information systems.

Cloud ERP to Combat Cyber Security Threats

A recommended approach to address this threat is by using a Cloud ERP solution for businesses. Cloud ERP provides various advantages in managing and mitigating cyber risks and threats.

Here are a few features to look at while evaluating a cloud ERP:

Uptime & Availability

One of the aspects to check while going in for a cloud ERP is uptime commitment. Most of the reputed cloud ERP providers promise 99%+ of uptime.

Capability to defend against cyber-attacks

Checking the provider's capability and standards for defending against cyber-attacks is a good idea. Important aspects to consider are their firewall systems, the presence of a Web dispatcher farm to hide network topology and distributed data centers for protection against DDoS threats.

Adherence to ISO Standards

It's essential to verify if the cloud ERP's data center complies with ISO standards for security and cloud security. Certifications to check include:

ISO 27001 & ISO 27002	Provides a holistic, risked-based approach to security and a comprehensive and measurable set of information security management practices.
ISO 22301	Protects business operations from potential disruption, i.e. extreme weather, fire, natural disaster, theft, IT outage and more.
ISO 27017	Codes of practice for information security controls for cloud services.
ISO 27018	Guidance for cloud service providers to protect personally identifiable information (PII).

Features in an ERP to Enhance Security

Certain features within an ERP system significantly enhance the security of an enterprise's business systems. Here are some key features to consider for managing security threats within the ERP.

Single Sign On with Multi-factor Authentication

The ERP should support single sign-on with multi-factor authentication. This integrates the ERP's login credentials with more secure identity management services with multi-factor authentication measures, reducing the risk of cyber threats.

Automated Idle Logouts

If The ERP should automatically log out users who are inactive for a specified period, preventing misuse of the application.

Password Policy Framework

The ERP should enforce a standardized policy for password changes and management. This ensures a more secure access framework and reduces the risk of compromised passwords.

User Access Management

The ERP should provide tools to grant user access based on their roles. It's important to evaluate if the ERP offers granular access controls at both module and record levels, ensuring proper authorization.

Automated Change logs recording & exception alerts

The ERP should record change logs for all transactions and provide analytical tools to monitor these changes. It should also have an exception management framework to alert users about exceptional data changes.

Features Outside ERP for Managing Cyber Risks in On-Premise Implementation

In some business cases, a discrete manufacturing enterprise may need to implement an ERP in an on-premise model. Here, it's important to look at certain aspects that fall outside the purview the ERP system.

High Availability of Systems

The ERP system should operate continuously without failure for a designated period, with redundant systems in different locations.

Network Firewall

An enterprise needs a firewall to prevent cyber criminals from compromising their network. It should be properly installed, configured and regularly updated to detect and deter new threats.

Endpoint Security & Antivirus Software

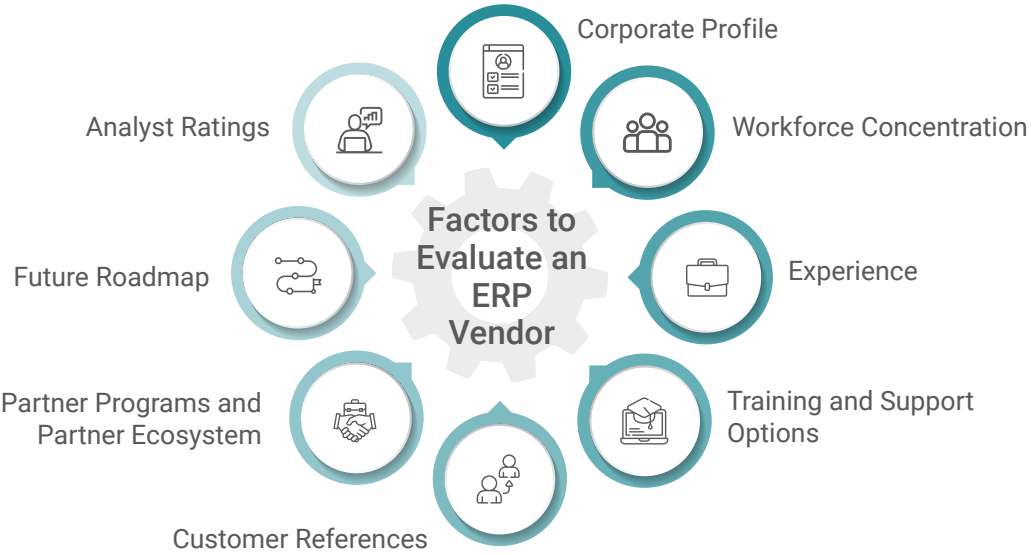
Along with a network firewall, using antivirus software helps detect and prevent malware infections on workstations, safeguarding other devices on the company's network.

Data Backup & Recovery

To protect against ransomware and other cyber threats, offsite data backups are a crucial part of the cybersecurity plan. Secure backups, onsite and in the cloud allow rapid restoration in case of data encryption or on-premise damage like fire or storms.

Factors to Evaluate an ERP Vendor

When evaluating ERPs, it's crucial to consider the profile of the ERP provider. Since ERP usage usually extends over 5 years or longer, it's important to understand their commitment to customers in the market.



When evaluating an ERP vendor, important factors to consider are the ERP's longevity and reputation, the company's focus and expertise in providing ERP solutions, its history of ERP versions and future roadmap, the technology they use, assessments from independent analysts, its partner ecosystem and their training and support capabilities.

Let us examine each of these aspects in greater detail.

Corporate Profile

Assessing the corporate profile and experience of an ERP vendor is key in the evaluation process. It determines if providing ERP solutions is their main focus and shows their commitment to the business, the ERP product and future investments. It's also important to know if the company is profitable with the product.

Financial statements help assess an ERP vendor's financial stability and commitment to the product. Look for information such as the revenues generated from the ERP product, its percentage share of their overall revenues, the number of employees dedicated to the product and their future plans for the product.

Workforce Concentration

It's crucial to know the workforce concentration of the ERP vendor. Having a significant number of employees dedicated to product innovation, development, partner development, training, support and customer success, indicates the ERP vendor can support customers after a sale is made. However, if the vendor's workforce is only sales and presales heavy, it may indicate challenges in future support, upgrades and commitment.

Product innovation & development, partner development,training, support and customer success

Experience

The experience of both the ERP and its vendor in the market and the number of customers they have served, strongly indicate the ERP's maturity. If they have been serving customers for a long time, it indicates that the ERP has undergone multiple improvement cycles and is more refined in terms of functionality and technology. It also means they have witnessed technology advancements and can better adapt their solutions to new business and technology trends. Additionally, their experience indicates the presence of best business practices embedded within the ERP.

Customer References

The ERP vendor's ability to provide customer references is important in assessing the suitability of the ERP for the industry. By speaking to existing customers during the evaluation process, an enterprise gains valuable insights into the practical implementation of the ERP and potential challenges. This helps mitigate risks during the ERP implementation. However, if the ERP vendor is hesitant to provide customer references, it is a cause for caution.

Training and Support Options

The ERP vendor's ability to offer ongoing support and training options is a positive sign of the experience an enterprise can expect after purchasing the product.

Support Capability

A good ERP vendor provides dedicated 24/7 support through a helpline and online portal. The support portal should offer a self-help guide, an updated knowledge base, access to product downloads and licenses, implementation & support resources and access to support specialists.

Training Capability

For training, an online learning center caters to specific business roles. It offers video courses for fundamental and in-depth product knowledge, various learning paths, certification programs and online or offline product training.

Partner Programs and Partner Ecosystem

The ERP vendor needs a strong partner network worldwide to provide last-mile services to customers. They should have structured partner programs for development, sales, implementation and support. Essentially, an ERP vendor should have two types of partner programs and a partner network in place.

Channel Partners

Channel Partners sell, implement and support the ERP solution, providing last-mile support for their customers.

ISV Partners

The ERP Vendor should have strong ISV partners who provide additional functionality or industry-specific solutions to enhance the ERP solution.

Future Roadmap

A good ERP vendor has a clear roadmap of the future direction and development plans for the ERP product. This roadmap demonstrates the vendor's commitment and investment in the future of the ERP product.

Analyst Ratings

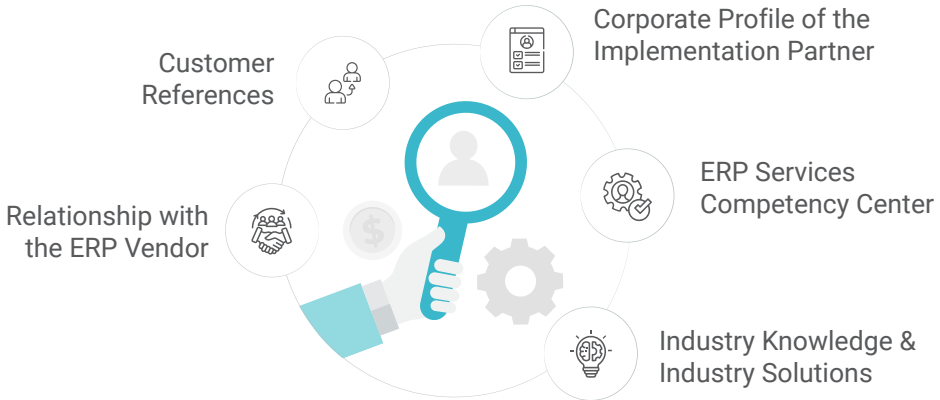
Vendor evaluation includes ratings and reviews given by top analysts like Gartner, IDC, Nucleus and others. These analysts create reports about ERP vendors, such as Gartner Magic Quadrants, Nucleus Tech Evaluation Matrix, Nucleus ROI reports and IDC ROI reports.

Analysts evaluating ERP systems give a good idea of their strengths, weaknesses, opportunities and threats (SWOTs). It also shows that these ERPs are worth considering. However, if an ERP vendor is not mentioned in any analyst reports, it requires a more thorough evaluation.

How to Select an ERP Implementation Partner

Choosing the right Implementation Partners for your ERP is crucial in evaluating ERP systems. These partners are responsible for turning the ERP's capabilities into a functional business system for your company. They also provide essential last-mile support to meet your specific ERP requirements.

When evaluating an implementation partner, consider factors such as their company profile, track record of successful customer projects, implementation team's expertise, ability to provide relevant advice and industry knowledge, support capabilities and future plans and goals. Also, take into account their certifications and relationship with the ERP provider.



Let us look at some of the aspects in greater detail.

Corporate Profile of the Implementation Partner

The corporate profile of the implementation partner is crucial to evaluate when selecting an ERP. Consider factors such as the company's size, business focus on ERP services, other service portfolios, experience in the field, competency center, employee and leadership profiles and customer success. Also, take into account their service processes and systems, quality management certifications and financial stability

ERP Services Competency Center

The implementation partner's ability to implement and support a specific ERP is an important factor to consider. Look at the team side they have for providing ERP services, how they split their team between functional and technical consultants, the team structure for implementation, training and support and the methodology they use for implementation and support. If the evaluation is at an advanced stage, it's also good to assess the team profile that the implementation partner assigns to your project.

Industry Knowledge & Industry Solutions

Another crucial aspect to evaluate is the implementation partner's industry knowledge and solution templates. Having good knowledge and experience in a specific industry, such as discrete manufacturing helps in understanding industry challenges, key areas for success and implementation techniques in advance. This increases the chances of project success.

Customer ReferencesSolutions

It's a big plus if the implementation partner has experience in similar companies and provides customer references of successful implementations. Speaking with these customers helps evaluate the ERP's capabilities, the implementation partner's expertise, their experience, challenges faced and the advantages gained during the implementation process.

Relationship with the ERP Vendor

Assessing the relationship between the implementation partner and the ERP vendor is important. Look at factors like product certifications held by the partner's team, partnership recognitions and awards from the ERP vendor and relationships between the partner and ERP vendor. A strong relationship ensures better cooperation and support from the ERP vendor in implementation and support.

Conclusion

By now, you should have a comprehensive list of capabilities that a discrete manufacturing enterprise needs to evaluate in an ERP and the impact these capabilities can have on the enterprise.

However, discrete manufacturing enterprises are at different levels of maturity and readiness. This determines their ability to leverage the mentioned features and functionalities.

It's important to assess this aspect and identify the features a discrete manufacturing enterprise wants to implement in Phase 1 of their ERP journey. It's also important to remember that ERP implementation is an ongoing process and not all features can be implemented at once. It's best to divide ERP implementation into multiple sub-projects and gradually deploy features and functionalities.

It's important to choose an ERP system that offers the necessary capabilities. Equally important is selecting an implementation partner who can act as a guide, build a strong relationship and help the enterprise navigate this journey successfully.

Epicor Kinetic

Epicor Kinetic presents itself as a viable option for discrete manufacturing enterprises seeking to evaluate their ERP solutions. It is a cloud-based ERP designed specifically for manufacturers. Rely on Epicor's expertise to drive growth, enhance innovation and maximize profitability.

For more information, visit *epicor.com*

RheinBrüke IT Consulting

Rheinbrüke IT Consulting is a top implementation partner for Epicor and possesses all the necessary credentials to be an ideal partner for a discrete manufacturing enterprise during their Epicor implementation journey.

To know more visit *www.rheincs.com*

Appendix 1 - Exhaustive List of Functional Capabilities for Discrete Manufacturing

Financial Management

Functional Capability	Epicor Kinetic
Core Financial Operations Includes capabilities relating to Chart of Accounts, Receivables and Payables Management, Invoice Management & Trade Agreements, Multi-Currency Management, Ability to manage multiple payment instruments, Bank Reconciliation, Tax Compliance, Budget Planning & management, Departmental Appropriations, Credit terms and Credit Control, Asset Purchase and Creation, Depreciation, Asset Transfer and Disposal.	✓
Multi-Company Consolidations Ability to consolidate from different books and/or companies. Merge balances from one or more books into a single consolidated view of financial information	✓
Allocations Automatically computes cost and revenue allocations and the resulting journal calculations, streamlining processes, increasing relevance, and improving accuracy.	✓
National Accounts Ability to create customer relationships, either hierarchical or the more traditional parent/child type, within Accounts Receivable. This functionality allows customers within a National Account group to accept invoice payments from customers within the relationship. The functionality also permits extensive credit checking across the National Account group.	✓
Requisition Management Manage the requisition and purchasing functions with automated processes with flexible multi-dimensional approval workflows.	✓
Accounts Payables Invoice Automation Ability to scan invoices, match them automatically & process them to speed up the accounts payables process. This comes especially handy when a company is dealing with a high load of vendor invoices.	✓

Functional Capability	Epicor Kinetic
Credit and Collections Management Automated Receivables and Collections Management, including Workflow-based collection management, Defining Collection templates for Automated calls, texting, e-mailing and Customer self-service portal.	✓
Tools for Financial Statements, Budgeting and Forecasting	✓
Excel Add-In to integrate ERP with Excel Allows you to do the following in Microsoft Excel: View attachments from financial reports, Drill down to transactional details, look at invoices, delivery notes, and Dynamic GL account ranges in financial reports.	✓
Advanced Financial Planner for Financial Simulations and Planning	✓
Data Visualization Tools with pre-defined visualisations and capability to integrate data from various sources.	✓

Supply Chain Management

Procurement	
Procurement Operations Procurement operations include the management of suppliers and purchase transactions. **It includes: Procure to Pay automation, Consignment Purchases, Material Return, Rejection and Replacement Management, Management of Advance payments, Pricing, contract management, Master data management, Supplier Quotation Comparative Analysis, Tracking Shipment Notifications and User-defined procurement flow.**	✓
Advance Requisition Management Ability to get visibility and manage purchase spending with automated processes with flexible multi-dimensional approval workflows for the requisition and purchasing functions.	✓
Supplier Portal The Supplier portal offers suppliers to update their information, answer requests for information, and confirm changes to purchasing orders.	✓

Functional Capability	Epicor Kinetic
Supplier EDI Integration Ability to integrate suppliers with your ERP system through EDI (Electronic Data Interface).	
Sales	
Sales Operations Basic sales include management of customers and sales transactions. It includes the following functionalities: Quote to Cash transaction processing, Enquiry and Quote Management, Managing Consignment Sales, Order Management, Pricing, contract management and master data management.	
Advanced Shipment Tracking Ability to promote increased efficiency and accuracy by allowing you to perform and track all shipment-related activity. Complete functionality includes the following: print customizable bill of lading forms to your shipments, track customer shipments; track landed costs against applicable parts, Mass ship, Pack and ship/pack out processing, Master pack tracking, Phantom pack shipping and Shipping performance reporting.	
Inventory Management	
Inventory Control Basic Inventory control manages your inventory. It includes the following functionalities: Item Management, Alternate/Substitute Item Management, Product profiling, Multiple Attributes for products, Default Sales and Purchase unit by product, Serialised Inventory Controls, Inventory Tracking and Transfers, Manage Batches, Serial number and expiry date for items, Reorder levels by store and auto Indent, Stock Reservation & Release, Inventory Valuation, Return Material Authorisation and Basic Inventory Analysis including ABC Analysis.	
Advanced Package Control Ability to track, manage, or transact a group of items via a unique identifier, the Package Control ID. Track any item from receipt into a site, the movement of an item throughout the site, the shipment or transfer of that item to another site, and eventually, the shipment to the customer.	
User Defined Unit of Measure Ability to segment and manage inventory with dynamic and user-defined inventory attributes such as (for example) hardness, strength, modulus of elasticity, or density.	

Functional Capability	Epicor Kinetic
Advanced Materials Management Advanced Material Management (AMM) enables businesses to produce electronic requests for materials, dispatch those materials, and track inventory movements of all inventory—including raw materials and work in process. Using wireless terminals and bar coding technology, you can track inventory in real-time with complete control and visibility of raw materials and work in process as it travels throughout the enterprise. **Complete functionality includes: Bar coding on demand, Material handler interface, Material movement, Order prioritisation, Sales order allocation, Bar code tag scanning and Handheld capability.**	
Inventory Planning and Optimisation A Platform for demand planning, inventory optimization, and supply chain analytics that helps drive sales and inventory operations planning. It includes forecasting methodologies, optimization techniques, and consensus demand and inventory planning.	
Supplier and Customer Managed Inventory Customer-Managed Inventory: Handle customer-managed inventory that you store but never own. These items can be used to produce products for a customer or shipped by you directly to your customer's customer. Supplier-Managed Inventory Handle designated material purchased as inventory you are storing as consignment inventory from the supplier. You can also use these part quantities on jobs, and once you consume them, your company legally owns the items.	
Warehouse Management	
Core Warehouse Management Core warehouse management includes operations relating to the management of warehouses and inventory in the warehouses. It includes Warehouse configuration, bin management setup with user-defined configurations, Inward receiving process, Lot and Serial Number based Inventory tracking and management, tools to maintain barcodes, pallet IDs, batch numbers and expiry dates, Internal Inventory Movement process, Outward Picklist and picking process, Pick and Move on mobile devices and billing by storer, storage type or SKU, along with monthly, weekly and daily billing.	
Wireless Warehouse Operations A Handheld application that works on handheld devices and offers an interface for warehouse and distribution functions.	

Manufacturing and Quality Control

Functional Capability	Epicor Kinetic
Basic Production & Planning	
Production and Planning A Basic production and planning include the management of basic production and production planning operations. It includes the following functionalities: Bill of Materials Definition & Maintenance, Routing Definition, Work Center Definition and Management, Material Requirements Planning, Basic Demand Forecasting, Machine Capacity Planning including finite capacity, Production Scheduling, Production Order Management, Production Costing, Basic Production Analysis including cost variance analysis, utilisation analysis & production batch analysis.	✓
Production Batching Deploy batching technology that enables users to group multiple parts or operations for key production processes. This batching process results in a single reporting entity or job for simplified scheduling, tracking, and and reporting of labour and materials on the plant floor. It includes: Support for co-product production, nested product production, part & operation batching, visibility of production batching, accurate cost control, simplified plant-floor interface, and concurrent or subsequent linking of parts and operations.	✓
Plant-floor Data Collection A system for the plant floor that allows plant-based transactions real-time visibility. It enables accurate labour reporting, and online transaction tracking, which provides management with a real-time picture of what is occurring on the plant floor by employee and job. Its capabilities include: Data Entry System at the shop floor for shop-floor data collection, providing employees with work schedules and work queues, Quality reporting, Shop-floor exceptions warnings, Multiple Shifts management and Job tracking system for workers, and material handling.	✓
Kanban Lean Production Lean Production provides the adoption of Lean Manufacturing Kanban functionality to pull rather than push products through the manufacturing process. Capabilities include: Manufacturing Without Work Orders (Kanban Flow), Cell-based Inventory, Real-time Manufacturing Kanban, Manufacturing Flow Kanban, Real-time Stock Replenishment Kanban, Real-time Purchase Kanban, Automated Material Flow, Measurement of Production Activity Against Lean Performance Metrics, Lean Metrics and support for Hybrid Approaches to Lean.	✓

Functional Capability	Epicor Kinetic
Advanced Manufacturing Execution System Advanced MES utilises Industry 4.0 technology on the shop floor – such as cyber-physical systems and Internet of Things (IoT) sensors. It includes capabilities such as: Automatic collection of production data from sensors and IoT devices. Providing real-time automated alerts, notifications, escalation and other production-related communications. Ticketing and workflow for Non-Conformance Reporting (NCR), Safety incident tracking, downtime, quality issue follow-up, and warehouse escalations. Statistical Process Control and Statistical Quality Control to analyse production data to respond to production conditions before making bad parts. Use Digital Twin to visualise and simulate your production activities using past shop-floor data. Optimising material and production schedules based on real time production and supply chain data (also known as Dynamic MRP and Scheduling).	
Quality Assurance & Quality Management	
Basic Quality Control Perform basic quality control operations for your incoming, in-process and pre-dispatch inventory. It includes: User-Defined Test Definition, Rule definition for testing, QC Requisition, Quantity Breakups for sampling, Sample and Total Test and Test Approvals.	
Quality Assurance Quality Assurance gives complete visibility into quality operations from a top-down view down to the individual item level. It ties together all quality functions such as scrapping end parts, rejecting raw materials or tracking first-article inspections. Quality Assurance functionality includes: Inspection Workbench to track and manage quality control activities, Creation of Non-conformant Records, Discrepant Material Report Processing, Create and track all preventive and corrective actions, Recording Material Review Board Actions, Cost of Quality Reports, Packing Slips and Debit Notes for Return Items, Inspection Audit Trails, Management of Quality Related Documentation from Suppliers such as Certificates of Analysis (COA), Certificates of Quality (COQ), or Certificates of Compliance.	
Enhanced Quality Assurance Enhanced Quality Assurance offers additional quality control features for your enterprise.	

Functional Capability	Epicor Kinetic
It includes the definition and configuration of Inspection Plans, management of inspection results collection, handling of multiple inspection types, definition of skip-lot cycles, creation of resource-calibration test plans, managing quality-related training courses and providing real-time and advanced quality analytics.	

Product Engineering

Advanced Product Data Management	
Advanced Bill of Materials Advanced Bill of Material has multilevel BOM management that incorporates internal and external routing steps for complete end-to-end assembly visibility, planning, scheduling, and cost. It also supports alternate BOMs to predefine multiple BOM structures with material or component substitutions for the same part.	✓
Advanced Routing Advanced Routing allows the definition and maintenance of multiple routings or material substitutions under a single part number.	✓
Engineering Change and Control Engineering workbench enables engineering change management, multiple revision control of products, and engineering workflow management, and it offers detailed cost analysis of products during the engineering process.	✓
Product Data Documents Management Allowing attachments linked to end products and components to flow automatically to production planning to the production floor. This ensures strong product and process documentation control at each product revision and production run. Attachments at the record level would typically provide information, drawings, documentation, or context specific to that record.	✓
CAD Integration Push forward BOM revisions from CAD systems to ERP with a click of a button without leaving their familiar CAD environment.	✓
Product Lifecycle Management	
Product Lifecycle Management Product Lifecycle Management is digitalizationof all product engineering and product management processes and all document-based workflows. It	✓

Functional Capability	Epicor Kinetic
manages all documentation associated with a product throughout its entire product lifecycle. It includes full integration with numerous computer-aided design (CAD) systems and various electronic design automation (EDA) systems.	
Product Configurator	
Product Configuration Product Configurator enables on-the-fly configuration of highly customizable and dimensional products via a straightforward question-and-answer evaluation.	✓

Customer Relationship Management

General	
Contacts Management Manage contacts, leads, and customers from a centralised database that can be accessed from any device.	✓
Marketing Operations	
Marketing Management Marketing Management enables you to measure the success of marketing campaigns, understand your target market, improve communications, and build customer and prospect relationships. It includes: Marketing List management, Campaigns Planning and Management for various types of campaigns such as tele-calling, digital marketing, events and Measurement of Campaigns ROI.	✓
E-Communications with Target Lists eMarketing and eSurvey, effectively distribute important communications to your employees, partners, prospects, and customers.	✓
Sales Operations	
Leads and Opportunity Management Lead and opportunity management tools that your sales team needs to manage the complete prospect-to-customer lifecycle, give accurate revenue forecasts to management, and automate many administrative tasks.	✓

Functional Capability	Epicor Kinetic
Team and Sales Quotas Manage the sales team through user-defined sales structure, pipeline stages, and quotas.	✓
Integration with Microsoft Office Synchronizing essential CRM data with Microsoft® Office, giving your sales force access to prospect and customer information, including sales history within Microsoft Outlook®, Microsoft Excel®, or Microsoft Word.	✓
Mobile CRM Mobile CRM helps you perform your CRM and customer-related activities on the mobile. Through CRM Mobile, you can manage leads, customers and contacts, as well as quotes, from an opportunity to order shipment. Create activity-based workflows like call and email logging, notes, "to do" lists and appointments, and implement your back office task workflow. Access data related to competitors, cases, projects, and order history — even without Internet connectivity. Also, visualise your customers and prospects on a map while in the area, and then get travel time and directions to the selected location. Also, search your inventory to verify product availability, create Sales Orders (even from Opportunities), and finally ship them to your customers—all from the mobile device of your choice.	✓
Service Management	
Case Management From initial call to resolution and follow-up, Case Management provides a customer-focused solution for personalized, high-quality service. It comes equipped with time-saving links to customer-focused activities (e.g., new quotes, orders, RMA requests, or service calls), a search-driven knowledgebase and a case-driven workflow for standardising case resolution.	✓
Field Service Management Service Management is primarily designed for manufacturers who bring customer assets in-house for repair or have light requirements for service or installations offsite that do not require purpose-built mobile access for field technicians. You can centralise all processes related to dispatching technicians and reporting costs of service calls in the field with support for direct drop shipment of service parts to the customer site.	✓
Returned Material Authorization Enhanced return processing offers enterprise-wide tracking of pending returns and disposition of these parts by a unique returned materials	✓

Functional Capability	Epicor Kinetic
authorization (RMA) number. Enter information about returns and transfer that information to the different groups that may need to take action — like inspection, billing, and order processing.	

Human Resources Management

Recruitment and Onboarding	
Recruitment Tools to assist HR and hiring managers with workflows that walk through the most common recruiting tasks—opening a requisition, interviewing, and hiring.	✓
Onboarding Publishing new hire forms, automating the tasks new hires must complete, reading and electronically signing company documents such as the handbook and benefits enrolment, and managing these tasks to completion with workflows and alerts.	✓
Benefits Administration	
Compensation Administration Manage all types of pay and unlimited grades and ranges—even allowing for different grade scales at different locations within your organization.	✓
Salary Planning Salary planning and modelling tools enable HR to create plans on a defined budget, which managers can use to model various employee salary distributions. Upon submission, HR can route plans through the proper channels. Once plans take effect, HR can create a single view of your compensation strategy for the executive team.	✓
Performance Management	
Setting up Performance Goals Create Goals for employees for a particular performance period	✓
Performance Journaling Journaling facility for managers, employees and HR to track month-to-month, week-to-week, or even day-to-day activities.	✓

Functional Capability	Epicor Kinetic
360 degree performance reviews Obtain a complete picture of every employee's performance by including feedback from others in your organization. All parties participating in the review (manager, employee, co-workers) can complete questions online, eliminating data entry for HR and speeding up the entire review process.	✓
Position Control and Budgeting	
Position Control and Budgeting Manage headcount and monitor funding allocations to control the "people" budget better, whether creating a new position and and submitting a request for approval or measuring resources against budgeted head counts.	✓
Timesheet and Attendance	
Timesheet Management Ability to submit timesheets based on work done, monitoring of timesheet submission and approval of timesheets.	✓
Absence Management Ability to automate time off process where employees can see their available leaves, request for leave and leave approval process	✓
Payroll Processing	
Payroll Processing Automate payroll management with custom components, with salary processing.	✓
Training and Development	
Training and Development Employees can easily see which classes are required and available, where and when they are offered, and allows employees to register for a class and obtain approval from their manager. Facility to track the training history of your employees so you'll have a better understanding of the knowledge, skills and abilities employees have added to their profiles, as well as any additional learning opportunities that may interest them.	✓
HR Analytics	
HR Analytics Facility to analyse costs of turnover and hires, predict effects of salary	✓

Functional Capability	Epicor Kinetic
increases, monitor salary increases against performance ratings, keep up to date on compliance reporting, and compare benefit programs.	

Business Intelligence

Basic Business Analysis & Reporting	
Basic Business Analytics & Reporting Report writer that allows you to create customized reports. Dashboards across business functions that you could configure based on user duties, roles, permissions, user-defined key performance indicators and data analysis.	✓
Advanced Business Intelligence	
Built in Operational Analytics & BI Build real-time operational queries in virtually any area of ERP using a visual drag-and-drop wizard. Build dashboards and trackers to monitor performance continuously. Sort, group, summarise, and drill down to better understand your data. Trace a path of documents. Customisable pre-existing templates of queries and dashboards.	✓
Machine Monitoring and Reporting Ability to capture data directly from machines and operators and get real-time production metrics and analytics in an easy-to-digest, visual manner.	✓
Advanced Data Visualization Tools Data Visualization Tools with the capability to integrate data from various sources. Pre-defined Visualizations for every business function with 30+ pre-defined metrics across 5 business roles. Advanced data visualisations that allow you to build complex KPIs.	✓
Predictive Analytics Provides predictive insights on your inventory based on advanced forecast models. Determines safe stock levels, reorder point, lead times, and order quantity to balance carrying costs.	✓
Excel AddIn - for ERP Analytics Built-in self-service reporting and analytics solution nested in the user-friendly environment of Microsoft® Excel®	✓

About RheinBrücke

RheinBrücke designs and delivers products and solutions that enable global enterprises to thrive in today's complex business environment. We help our clients achieve measurable business benefits by connecting people and technology. As a reflection of our tagline "Wir verbinden Menschen und Technologie" (We Connect People and Technology), we focus on offering innovative solutions to solve complex business challenges of enterprises. Our aim is to bring technological innovation to your business processes, making your teams more flexible and agile.

We have executed projects in more than 40 countries and provide solutions across multiple industry domains including Manufacturing, Automotive, Engineering Projects – Procurement & Construction and Public Sector. RheinBrücke is an Epicor Premium Partner and two times winner of International Partner of the Year, as well as Microsoft Gold Partner. RheinBrücke's flagship product, MeRLIN is an integrated solution for Direct & Indirect Sourcing with Supplier Relationship Management, Sourcing Automation and Planning augmented by Advanced Analytics.

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