UNIT 2

Enterprise Resource Planning

ERP:

Enterprise resource planning (ERP) is a process used by companies to manage and integrate the important parts of their businesses. Many ERP software applications are important to companies because they help them implement resource planning by integrating all of the processes needed to run their companies with a single system. An ERP software system can also integrate planning, purchasing inventory, sales, marketing, finance, human resources, and more.

- ERP software can integrate all of the processes needed to run a company.
- ERP solutions have evolved over the years, and many are now typically web-based applications that users can access remotely.
- An ERP system can be ineffective if a company doesn't implement it carefully.

Understanding Enterprise Resource Planning

You can think of an enterprise resource planning system as the glue that binds together the different computer systems for a large organization. Without an ERP application, each department would have its system optimized for its specific tasks. With ERP software, each department still has its system, but all of the systems can be accessed through one application with one interface.

ERP applications also allow the different departments to communicate and share information more easily with the rest of the company. It collects information about the activity and state of different divisions, making this information available to other parts, where it can be used productively.

ERP applications can help a corporation become more self-aware by linking information about the production, finance, distribution, and human resources together. Because it connects different technologies used by each part of a business, an ERP application can eliminate costly duplicate and incompatible technology. The process often integrates accounts payable, stock control systems, order-monitoring systems, and customer databases into one system.

ERP offerings have evolved over the years from traditional software models that make use of physical client servers to cloud-based software that offers remote, web-based access.

WHY ERP?

Enterprise resource planning software is used to manage a number of business functions, but how is it any better than other solutions? Even though ERP may have similar goals to other solutions, its unique features make it a distinctive competitor in the software market. Here are the eight reasons why the importance of enterprise resource planning (ERP) systems should be considered by any organization:

1. More Money Saved

Although many vendors have introduced flexible pricing in recent years, ERP packages are still a big investment. For many, the large costs alone can make it seem unlikely that the program would end up saving your organization any money at all. But once you get past the sticker shock, it's easier to see how ERP systems can provide an excellent ROI.

First, ERP unifies many of the systems that may currently be fragmented in your organization. From product development to accounts payable, your staff will be able to access all the necessary tools for their job from one centralized system.

By unifying systems, you help your staff utilize their time more efficiently. With ERP, users don't have to hunt down a piece of information across multiple systems. With the central database, information is much easier to retrieve. Moreover, your organization saves money with ERP by eliminating the need for users to be trained on several systems. This not only reduces the amount of money spent on training but also reduces the logistical effort involved. Instead of scheduling several training sessions with several different vendors, you only need to communicate with one.

2. Improved Collaboration

The features of ERP applications can vary slightly depending on the program you are using, but generally, all systems improve collaboration in some way. As mentioned before, the centralized database is an integral part of what makes an ERP unique. With this database, you provide your company with a single source of truth to work from. This reduces any errors brought on by working with the incorrect data, further reducing costs.

Moreover, a central database reduces any hesitation or stalling during projects, since all team members have access to the company-wide data they need. Additionally, there's no need to

merge information across various systems or sources. Because all of the data is compiled, stored, shared and accessed through a single system, there is no concern about how accurate, complete or secure the data files are.

This isn't as easy to say if perhaps your team is entering the same client information over and over again into several different systems. Without an ERP, you invite human error into your processes when it could easily be avoided.

3. Better Analytics

A central database of information also aids in improving your analytics and reporting. Since an ERP records and stores all the data users input, it makes for an excellent business intelligence tool. As long as your vendor provides strong functionality, ERP software makes it easier and faster for your team to generate various reports. Reports that could take days of research and compilation without an ERP takes just minutes.

Most ERP systems provide a customizable dashboard so executives can see reports when they first log into the system. These reports may include everything from income and expense statements to custom KPIs that offer insight into certain functions. The ability to have access to these reports quickly enables you and your team to make better decisions more quickly. You no longer need to rely on your IT staff to generate the reports that you need. Lastly, reports typically come with access levels, ensuring only relevant staff see valuable company data.

4. Improved Productivity

With traditional methods, tedious tasks are completely unavoidable. Tasks like generating reports, monitoring inventory levels, timesheet tracking and processing orders have historically taken employees hours to accomplish. In addition to taking up time, these processes lower employee morale and open yourself up to human error. After the umpteenth hour of entering the same line of data into different forms, even the best staff members are bound to make a mistake.

If you choose the right solution, an ERP system can automate your most tedious tasks. The database within ERP software eliminates redundant tasks such as data entry and allows the

system to perform advanced calculations within minutes. This frees up your team members' time to do more thoughtful work, increasing your ROI when it comes to labor. From this, ERP increases your organization's productivity, efficiency and profitability.

5. Happier Customers

Managing your customers has never been so important. In our digital age, more and more people are turning to the internet to receive advice on what clothes to wear, what food to eat and how to live their lives. And with 84 percent of consumers trusting online reviews as much as they would a friend, previous customer opinions are more impactful than ever.

The best way to improve customer satisfaction is to provide client-centered goods and services. ERP provides this in a few different ways. First, most ERP systems are equipped with a customer relationship management (CRM) tool or can be easily integrated with one. With an ERP, your CRM has access to data across business functions.

Along with contact information, an integrated CRM can show you details such as order history and billing information. This enables your team to see your clients more holistically to gain a better understanding of their wants and needs. The increased customer visibility helps you formulate your sales strategy for improved lead generation.

6. Simplified Compliance and Risk Management

As companies grow and do business in different countries, it can be difficult to keep track of all the different regulations imposed on your business. Even local companies need to worry about various environmental, information security and human resources regulations.

Luckily, many ERP systems are built with these regulations in mind to help you maintain compliance at every stage. Moreover, ERP software provides built-in auditing tools to assist with documenting things like chemical use and tax provisions. This makes it incredibly easy to formulate reports and send them over to the relevant governing body.

Additionally, ERP systems often provide tools to manage risk. This solution's enhanced reliability and accuracy improve overall financial management since there's less chance for

errors during accounting. Forecasting tools also allow users to predict events when it comes to demand, labor and budget. With this information in hand, you can create more secure budgets, schedules and product development plans.

7. Improved Inventory Monitoring

A major challenge for growing companies is tracking and monitoring their expanding inventory levels. ERP systems utilize barcoding, RFID tags and serial numbers to keep tabs on your inventory at every stage during the supply chain. These tools help you keep track of inventory levels at different warehouses, which items are in transportation and which items are on the shelves ready for consumers. The increased warehouse visibility optimizes the pick, pack and ship process greatly, removing all the guesswork.

Inventory monitoring also bolsters reporting, as tracking technologies provide more accurate numbers. Users can configure custom KPIs to see which products move the fastest — showing greater demand — and which increase carrying costs. With the greater precision provided by ERP, warehouse managers can get real-time data on their inventory to make more accurate business decisions.

8. Improved Production Planning and Resource Management

Along with managing your inventory, ERP systems also manage manufacturing. ERP provides insight into all manufacturing operations including the shop floor. This enables users to optimize production schedules, equipment and labor to maximize capacity.

REAL WORLD USAGE OF ERP:

Here are practical examples of how this technology can be applied across many industries.

1. Distribution

A semi-tractor trailer truck pulls off the highway and begins driving up the road to a distribution center. As it passes the gate, scanners read the identification on the trailer and relay that information to the distribution ERP system. That trailer ID is instantly matched in the database to an advance shipping notification (ASN) and then to several purchase orders expected from a supplier.

The ERP system looks at the demand for those purchase orders and determines the optimal dock door for this delivery.

2. Construction

Pipe assemblies, sheet metal, rebar, windows, and all variety of material is dropped off at a construction site as a building is erected. Each is tagged with RFID or bar codes allowing the ERP system to link that particular item with the specific trade and group of ERP users that will require the item. The material is also linked to the architect and engineering models for the building.

3. Manufacturing

A manufacturer receives a customer purchase order requesting delivery of a complex product in three weeks. Real-time ERP automatically converts the purchase into several production jobs and schedules that work along with thousands of existing production jobs.

4. Transportation

Tug boats push an 85,000 ton cargo ship to the side of a dock where three other ships are already loading and unloading cargo containers. There are 9,214 containers on this vessel. 2,163 will be unloaded and 1,814 will be loaded for delivery at ports along the ship's route. 525 containers will need to be unloaded and replaced making space to retrieve the planned unloading.

ERP IMPLEMENTATION PROCESS:

Here are the 5 steps for a successful ERP implementation:

1. Identify problem: What do we need ERP implementation for?

You can easily streamline your business processes of collecting information and eliminate several repetitive processes, particularly when the **Role of Cloud ERP in digital transformation** is soaring high. Greater work efficiency has become desirable and much more achievable with an on-cloud ERP software. Thus, your Enterprise Resource Planning solution greatly reduces the traditional practice of manually keeping the track of information. Isn't that worth the need especially when real-time work has become an order for companies? Besides, one of the notable advantages of ERP implementation is data security. Your ERP software improves and assures security and accuracy of data too. Moreover, with the software you will be able to manage your entire business processes effectively by controlling your costs and even improving your production levels.

2. Smarter evaluation of the scope

If transparency of daily operations, having business financial control and supporting common processes have been a concern for your organization; the features of ERP must be evaluated considering the needs of a company.

A leading Panorama study reveals that 61.1% of ERP implementations take longer than expected and 74.1% of ERP projects exceed budget.

Reason- Unclear definition of ERP requirement causes delays and over budgeting.

What needs to be done? Here's what Capterra revealed in its study- 33% of ERP buyers did not demo a product before buying!

2015 ERP report, revealed that 93% of companies preferred to customize their ERP software. And as per **IDC** around 60% of manufacturing industries will need digital platforms that are estimated to enhance their bottom-line by 30%. Thus, while you choose ERP you must be convinced that it is at pace with the **emerging global trends in advanced manufacturing**.

3. Data Migration: the next big step

Basically, ERP enhances the way business processes were earlier carried out. Gartner recommends 15% budget in organizational change management from now which is 5%. This is specifically followed by the identification of which data is necessary to transfer. And precise care should be taken to have your data secured and ensure that data is easily retrieved when required.

4. Customized service

Let us suppose that you are running a 140 crore rupees' annual operation that is supported by labor-centric management approach. Now, using an ERP will mean that you will eventually automate a wide range of operations including purchase, finance, HR, accounting, inventory, customer service, order tracking etc. And this would reduce manual paper-based system, thus digitizing core platform. Today's business environment demands manage more with less.

Also, during the pilot testing, management has to gauge enough that they follow best practices and if needed must un-follow unconventional methods.

5. Testing & finally going LIVE!

During implementation, system and user acceptance testing is quite an important phase. You would want to make sure that your IT team is trained well enough to handle any tech problem – that may come along with time and evolution of technology itself.
Moreover, your system would call your attention for timely upgrades and general maintenance! And once your system has been well tested and configured, you can go live.

Future of ERP Integrated Solutions

ERP or Enterprise Resource Planning platforms are also evolving. With the changes in business requirements, ERP is also changing. The future of ERP exhibits the future of business. With the increase of AI and mobile app development services, businesses are ready to put data at the heart of every decision. Companies now prefer cloud-based ERP. As per a recent survey, more than 94% of enterprises regard cloud-based ERP as a safer option. ERP systems are becoming more dynamic. They can now take care of all organizational functions.

To create an ERP solution that will be successful for your business, consider the following modules:
- **Supply Chain Management:** It is essential to accurately track and procure materials in order to ensure maximum shelf life.
- **Inventory Management:** It is necessary in order to optimize the supply levels of perishable items.
- **Warehouse Management:** It helps in identifying and finding the stock at best efficiency levels.
- **Manufacturing Planning:** It assists in controlling the production of materials based on labor, materials, and machinery.
- **Purchasing Management:** It helps in minimizing the waste of materials used throughout the production process.

Thus, an integrated ERP system will seamlessly integrate and consolidate the functionalities.

1. More ERP users will switch to Cloud

The year 2018 saw the movement of several software platforms to the cloud. Till now ERP is lagging with the integration of cloud computing. In the year 2019, expectations are ripe that more ERP users will switch to the cloud. This trend holds great importance for small to medium businesses. With cloud ERP solutions, they need not maintain in-house infrastructure. They can avail the benefits of a comprehensive system with minimal human resources. It will help them access ERP systems which they cannot afford. As per recent reports, a total cloud-based market with cross the levels of US $411 billion by 2020. This trend has found favor with big corporations also. They are availing enterprise mobility solutions for their cloud ERP requirements.

2. Businesses must be ready for Updates

With the rising trend of cloud ERP solutions, there are going to be more updates available. This will need the businesses to keep their personnel always ready. They cannot rely on an old-release version for much longer. To be prepared for one big release, the company will have to adapt to many smaller releases. This will help reduce the steep learning curve between the systems. It will need businesses to invest in staff training and upgrading of skills. Meeting these demands is possible with the help of mobile ERP solutions.

3. The blockchain is the future

Blockchain has found takers in various enterprise software. It will find its way in the ERP also. The blockchain is one of the most secure platforms for carrying out transactions. Though, it is only in the nascent stages right now. But the future of ERP will feature blockchain. Specific organizational functions can become more efficient with blockchain. Supply chain management and customer acquisition will become more active with this technology. Many companies where shipping and tracking are essential functions have started using the services of blockchain consulting firms. You can enlist the services of enterprise app development providers. They will help integrate blockchain with your ERP.

4. Artificial Intelligence is the way to go

Artificial Intelligence services are impacting every facet of business operations. The concept of machine learning is going to revolutionize ERP. It will help businesses achieve high levels of automation. It will replace the need for human resources across various functions. The concept of robotic process automation (RPA) is catching up. Whereas previous systems focused on specific processes, RPA is applicable across all departments. This will help the company reallocate wasteful human resources to more productive avenues. Another extension of AI is in the form of Chatbots. One can hire the top Chatbot Development Company to integrate the AI enabled chatbots to reduce the cost of operations. Reallocation of funds will be towards business automation. Companies offering Enterprise mobile application development in India can take care of this.

5. Personalization of ERP Solutions

As per the ERP system predictions for the next 10 years, businesses will opt for personalization instead of customization in ERP. It will help them stay up to date with the industry trends. Business users will look for personalization of solutions instead of modifications. It provides the company with a specialized solution at a fraction of the cost. The market for personalized ERP solutions will cross the US $ 15 billion by 2020, as per a report by Forrester's. Companies can reduce the need for dedicated IT teams to manage ERP. In the future, all the activities of ERP will focus more on customers.