

## A REVIEW: SELECTION OF ERP BETWEEN SAP, MICROSOFT DYNAMICS, AND ORACLE

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**Abstract:** *The aims of this paper are to make a good difference comparison of the different cloud ERP (Enterprise Resource Planning) systems and give advice and recommendations on the use of any kind of system. ERP systems are now the backbone of many companies and organizations to collect business data and information from a different department in a single database and allow employees and business managers to generate reports that simplify business processes. Cloud system computing is growing and is starting to get into more and more corporations. The significant and most tested cloud systems allow more businesses to gain confidence in the clouds. Traditional ERP systems are hosted locally in every corporation where they themselves need to maintain the system. Since the growth of cloud computing, are beginning to be developed as cloud applications. By removing the maintenance responsibilities of business equipment and tools, the cloud-based ERP system is on an upward trend. This thesis contains a comparison of different ERP cloud systems. This paper is a technical survey, which will give an overview of three main Cloud-ERP service providers. The three systems, which will be analysed, are SAP, Microsoft Dynamics 365, and Oracle ERP Cloud.*

**Keywords:** *ERP, SAP, Microsoft Dynamics, Oracle*

### INTRODUCTION

There are many reasons why businesses implement enterprise resource planning (ERP) software solutions. For example, some may help to consolidate the management of crucial business processes into a single source, while others may want a more detailed view into the performance of their supply chain operations. However, most businesses that are considering different ERP systems fall into one of a few broad categories:

- Medium-sized enterprises that have outgrown their small business tools and systems.
- Larger enterprises that have grown by acquisition and need to consolidate disparate systems.

- Any business that has a complex IT-system landscape and needs to migrate to a single source of truth.

Whatever the case, a business evaluating ERP vendors will encounter the “big three” players in the ERP space: SAP, Oracle, and Microsoft. Each vendor’s offerings have their strengths, limitations, and target markets.

In comparing the ERP offerings of Microsoft vs. SAP vs. Oracle, which is better? It depends on a few factors, including:

- Your legacy
- Your industry
- What you need from an ERP system
- Your future roadmap plans
- Your current requirements, and
- The money and effort you’re willing to invest

### **Use of ERP**

Typically, ERP systems run on a myriad of hardware and network configurations, via a database and repository. Consider this. All these processes can be integrated in one place:

1. **Procurement:** Supplier relationship management (SRM), when coordinated with production management, can result in greater efficiency and cost savings.
2. **Production:** ERP can help in planning the manufacturing process, having the right resources at the right time, and ensuring that the distribution process meets its goals.
3. **Distribution:** Controlling warehouse processes and the movement of goods to customers as efficiently as possible.
4. **Accounting:** Automating financial operations with other departments will allow real-time updates and insights, as well as ensuring regulatory compliance.
5. **HR:** Keeping a complete database of all employees and coordinating departmental needs to best utilize current work force and determine where new needs may be. And all of this is coordinated with accounting as well.

6. **CRM:** A good ERP system will maintain all customer information and monitor relationships.
7. **Sales:** Coordinating all functions related to receiving orders, scheduling order fulfilment with production and distribution, as well as invoicing in coordination with accounting.

Obviously, there are other processes that are often placed within an ERP system, based upon unique organizational needs. For example, a healthcare enterprise will have a component that relates to regulations and HIPAA requirements. A bank will have far different components, based upon its regulatory environment. Among the top three Tier I ERP providers, though there is room for that customization.

### **1. Microsoft Dynamics**

The Microsoft Dynamics brand is not a single ERP but an umbrella brand for various ERP systems. Microsoft developed these ERP systems and marketed them separately for several years.

In a recent development, Microsoft rebranded its Dynamics ERP suite to Microsoft Dynamics 365, and each system in the suite has a distinct focus:

- **Microsoft Dynamics 365 Finance and Microsoft Dynamics 365 Supply Chain Management** (formerly Dynamics AX): These two applications focus on financial management and end-to-end supply chain operations, respectively. They can be deployed separately or together as an integrated system.
- **Microsoft Dynamics 365 Business Central** (formerly Dynamics NAV): This is a basic ERP for small- and medium-sized businesses (SMBs) and includes modules for finance, operations, sales, and marketing.
- **Microsoft Dynamics GP:** More comprehensive than Microsoft Dynamics 365 Business Central, this ERP includes modules that handle inventory management, human resources, business intelligence, and reporting.

All the ERP choices in the Microsoft Dynamics suite are available as on-premises implementations, cloud solutions, or hybrid deployments, with the exact mix depending on specific customer needs.

**Pros:** As part of their application suite, the Microsoft Dynamics ERP systems have consistent intuitive point-and-click user interfaces. They should be familiar to users of other Microsoft

products. Although users may require some training on using these applications for day-to-day operations, they don't have to learn new user interface conventions and terminology.

**Cons:** Enterprises with complex or extended business processes may find that the Microsoft Dynamics ERP products are not complete solutions without extensive customizations or complex integrations with existing systems. Those considering Microsoft Dynamics must factor these elements into the deployment cost.

**Costs:** Microsoft Dynamics ERP products carry a lower price tag for licensing than either SAP or Oracle but can take longer to implement. Longer implementation cycles raise the start-up costs, and as mentioned above, customizations and integrations can further increase this cost.

**Bottom line:** The Microsoft Dynamics ERP solutions are a good choice for SMBs that have straightforward business processes and a need for a system whose capabilities extend beyond their current tools.

## **2. SAP**

SAP was one of the first ERP systems, first launched in the early 1970s. Thus, its developers have had a long time to refine the advanced ERP functionalities required by large enterprises.

Various large, multinational companies are SAP customers. These businesses can take advantage of SAP's built-in capability to manage multiple sites, factories, warehouses, and distribution centres to conduct business in numerous languages and national currencies.

Additionally, like Microsoft Dynamics, SAP supports on-premises, cloud-based, and hybrid implementations.

**Pros:** SAP has numerous modules and can easily support simple and complex business processes, including:

- Accounting
- Supply chain
- Manufacturing
- Sales order management
- Warehouse management
- Fulfilment
- Production planning
- Quality management

These are just a few of the various SAP business capabilities. Clients can choose to implement as many as they need, all in one integrated solution.

**Cons:** SAP is challenging because it relies on “transaction codes” to access various software functions. Although this has improved with the latest version, S4, SAP is still highly complex software that requires extensive training for users to become proficient.

**Costs:** Licensing costs for SAP are higher than other ERP solutions, and the software requires extensive testing before deployment. The software has a complete suite of functions, so many implementations will not need as much customization. However, the configuration can be time-consuming and complex.

**Bottom line:** SAP is a good choice for large enterprises or for medium-sized companies with complex business processes, lofty aspirations, or both.

### **3. Oracle Cloud ERP**

Founded in 1977, Oracle Corporation has been in business almost as long as SAP. It began as a developer of relational database management software and eventually used its technology as the basis for the ERP solutions they introduced later.

Oracle ERP is part of the company’s E-Business Suite, which consists of numerous applications for a wide variety of business processes. Oracle EBS offers on-premises solutions while Oracle Cloud ERP provides various cloud applications.

For many larger organizations, the choice of ERP vendors comes down to Oracle ERP vs. SAP. Oracle and SAP together command a majority of the large-enterprise ERP market. But Oracle ERP isn’t just for large enterprises. Many smaller companies in niche markets have implemented Oracle ERP as well.

**Pros:** Oracle ERP gets high marks for its flexibility and wide range of narrow-focus components that make it a favourite in niche markets. This flexibility means that most customers can implement only the functionalities they need to avoid deploying sprawling modules that go unused. This option represents a clear advantage for Oracle vs. SAP and Microsoft Dynamics.

**Cons:** The flip side of the catalogue of components is that the choices can be bewildering. Sometimes it’s unclear which ones a particular business need. That said, a good implementation partner with deep knowledge of the Oracle ERP products can guide you to the right product mix.

**Costs:** Oracle ERP can be expensive to implement, depending on the number of components and the complexity of your business environment. However, a well-designed and well-implemented Oracle ERP solution will deliver rock-solid functionality and performance.

**Bottom line:** Most Oracle ERP customers are quite satisfied with the systems they ended up with and are committed to using and expanding their Oracle ERP systems. Oracle ERP is a good choice

for medium- to large-sized organizations who need high flexibility and functionality to support their specific business processes.

**Selecting an ERP Solution:**

One of the most significant decisions a growing business will make is the tools it will use to get to the next level. For most enterprises, this means selecting the right ERP system.

Once you implement an ERP system, it's difficult and expensive to back out and switch to a different one, so make sure you choose one that will support your long-term business goals.

Some things to keep in mind when evaluating ERP vendors, including Microsoft Dynamics vs. SAP ERP vs. Oracle ERP include:

- Understanding your current and future needs.
- If you have non-standard business processes, investigate whether they can be optimized using best practices that ERP software supports without customization.
- Look at each vendor's cloud offerings and determine the best mix of on-premises and cloud components for your business.
- Don't overlook reporting. All ERP systems are good at gathering data, but the best ones provide meaningful reports for making informed tactical and strategic decisions.

Regardless of the ERP system you select, make sure you choose a reliable implementation partner. ERP implementation is not a do-it-yourself project. It requires detailed expertise in the product and how to set it up and optimize it.

**Comparison between SAP, Microsoft Dynamics and Oracle:**

| <b>Topic</b>        | <b>Microsoft Dynamics</b>   | <b>SAP</b>   | <b>Oracle</b>   |
|---------------------|---|--|---|
| <b>Introduction</b> | Microsoft Dynamics ERP is enterprise resource planning (ERP) software primarily geared toward large, midsize and small organizations as well as subsidiaries and divisions of larger organizations. Its | SAP ERP is enterprise resource planning software developed by the German company SAP SE. SAP ERP incorporates the key business functions of an organization. | Oracle Applications comprise the applications software or business software of the Oracle Corporation. The term refers to the non-database and non-middle ware parts. Latest product of Oracle family is Oracle |

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|                          | <p>applications are part of Microsoft Dynamics, a line of business management software owned and developed by Microsoft. Microsoft Dynamics ERP comprises five primary products: Microsoft Dynamics AX, Microsoft Dynamics GP, Microsoft Dynamics NAV, Microsoft Dynamics SL and Microsoft Dynamics C5.</p> |  | Fusion Applications  |
| <b>Top product names</b> | <p>Latest product is Microsoft Dynamics 365 for Finance and Operation re branded in 2017 and release in 2016 Earlier product is Microsoft Dynamics AX 2012 R3</p>   | <p>The latest version, SAP S/4 HANA and earlier version of SAP ERP 6.0 was released in 2006. SAP ERP 6.0 has since then been updated through SAP enhancement packs, the most recent: SAP enhancement package 8 for SAP ERP 6.0 in 2016</p> | <p>Latest version of Oracle Application is Oracle Fusion Application. Earlier it was Oracle E-Business Suit R12.</p> |

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|---|---|--|---|
| <p><b>Available modules and Functions</b></p> | <p>General Ledger, Account Payable, Account receivable, Fixed Asset, Cash and bank Management, Expense Management, Budget, Cost accounting, Cost Management, Sales and Marketing, Procurement and Sourcing, Product Information Management, Inventory Management, Warehouse Management, Project management and Accounting, Production control, Master Planning, Human Resource, Payroll, Service Management, Call centre, Retail, Transportation management, Security and Administration.</p> | <p>Financial Accounting, Cost Accounting, Human Resource, Material Management, Quality Management, Production Planning, Sales and Distribution, Business Warehouse, CRM, Enterprise Controlling, Treasury, Investment Management, Project Systems, Product Life Cycle, Supply Chain, Customer Service, Real Estate, Plant and Maintenance, Incentive and Commission Management, Advanced Planning and Optimization</p> | <p>General Ledger, Payables, Receivables, Cash Management, Oracle Project portfolio Management, Sales, Customer Relationship management System, Advanced Planning &amp; Scheduling, Business Intelligence, HRMS, Payroll, Landed Cost Management, TMS (Transportation/G-Log), Process manufacturing</p> |
| <p><b>External Functions</b></p>              | <p>Employee portal, Customer Portal and Vendor portal is available</p>  | <p>Employee Portal, Customer and Vendor portal is available</p>  | <p>Customer portal, Vendor portal and Self Service Portal</p>   |
| <p><b>Inbuilt Integration functions</b></p>   | <p>Enterprise Portal for Dynamics AX (built on SharePoint Services), Microsoft SQL Reporting Services integration, Microsoft SQL Analysis services (KPIs), MS Project Server Integration,</p>   | <p>Third Party integration tools are available for integration.</p>  | <p>Third Party integration tools are available for integration.</p>   |



|                                  |  |  |  |
|----------------------------------|--|--|--|
|                                  | Workflow, Application Integration Framework (Web services + BizTalk adapter), Microsoft Project Client, Microsoft Excel, Microsoft Word, Office 365  |  |  |
| <b>Deployment</b>                | On Premises and Cloud  | On Premises and Cloud  | On Premises and Cloud  |
| <b>Database</b>                  | Microsoft SQL Server   | Microsoft SQL Server, Oracle, My SQL, SAP HANA. From latest version of SAP Support Only SAP HAN  | Oracle   |
| <b>License and Hardware cost</b> | There is no huge difference between Overall License and Hardware cost for Microsoft, SAP and Oracle. However, if you are existing customers then you will get good amount of benefits on licensing cost. In most of the cases, it free if you are existing customers, some transition amount may need to pay. Sometime If any promotion is going and you are buying large amount of user licenses then you will get discounts as well. | There is no huge difference between Overall License and Hardware cost for Microsoft, SAP and Oracle. However, if you are existing customers then you will get good amount of benefits on licensing cost. In most of the cases, it free if you are existing customers, some transition amount may need to pay. Sometime If any promotion is going and you are buying large amount of user licenses then you will get discounts as well. | There is no huge difference between Overall License and Hardware cost for Microsoft, SAP and Oracle. However, if you are existing customers then you will get good amount of benefits on licensing cost. |

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| <b>Implementati on and support cost</b> | Implementation cost of D365 Finance and operation is quite low as compared to other two because Implementation time is 6 months to 15 months depend on business process. Support cost is low, internal IT team can manage the small issues. | Implementation cost is on higher side because Implementation time will take 12 months to 30 months of time. Support cost is high. SAP team is required for small changes. | Implementation cost is on Higher side because implementation time will take 12 to 30 month of time. Support cost is high. Oracle team is required for small changes. |
| <b>Others</b>                           | System can easily mould as per business requirement. Customization in current application is easy. It Supports Windows, Android, and iPhone. Mobiles apps are available from Microsoft.   | We cannot easily customize the system. SAP currently not providing Native mobile apps. Some apps are available, but it is from Partners.                                  | Customization is difficult and costly. Oracle currently not providing Native mobile apps. Some apps are available, but it is from Partners.                          |

Table No. 1

## **SUMMARY AND CONCLUSION**

In conclusion, SAP, Microsoft Dynamics, and Oracle are three of the most popular and widely used Enterprise Resource Planning (ERP) systems in the market today. Each of these systems has its strengths and weaknesses, and it is important for organizations to carefully evaluate their needs and requirements before selecting one.

SAP is a robust ERP system that offers comprehensive functionalities and excellent scalability. It is known for its ability to manage complex business processes and integrate with other enterprise systems. Microsoft Dynamics, on the other hand, is a user-friendly system that offers a wide range of modules and is particularly suited for small to medium-sized businesses. It is also known for its excellent customer service and support. Oracle, meanwhile, is a powerful system that is designed for large and complex organizations. It offers extensive functionalities and can be customized to meet specific business requirements.

Overall, the selection of an ERP system depends on the specific needs and goals of the organization. Regardless of which system is chosen, it is important to have a dedicated team of professionals who are familiar with the system and can help ensure its successful implementation and ongoing maintenance. With

the right system and the right team, an ERP system can help organizations streamline their operations, improve efficiency, and increase profitability.

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