Critical Analysis & Future Trends in the Field of IT Applications and its Effect on Organizational Performance

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Abstract

IT systems are essential to the ongoing operations of organizations. Almost every industry prefers to use the standard applications that offers a whole range of features. For medium- and large-scale industries, SAP was the only alternative available in the 1990s, although Oracle and Microsoft Dynamics later entered the market. Benefits and cons of Microsoft Dynamics, Oracle, and SAP vary depending on the industry. The main purpose of this paper is to perform an in-depth critical analysis and comparison of IT enterprise resource planning applications. Which is conducted in the comparative analysis and discussion section of this paper. This paper focuses on the Functionality, benefits features & trends and drawbacks of a few IT ERP System Applications which are SAP, Oracle and Microsoft Dynamics respectively. It is their in-depth comparative analysis only after which an organization will be able to recommend or rather chose the right ERP System for their respective organization in the conclusion. This paper has been divided into five sections which include Introduction, Literature Review, Comparative Analysis and Discussion, Recommendations and finally Conclusion.

Introduction

Enterprise resource planning (ERP) is a technology that firms use to organize and manage their operations. 2022) ERPs combine many report kinds into one environment, which all combined aids in having a better grasp of the whole situation. Businesses save time and money by automating

manual processes and reducing the possibility of mistakes. Enterprise Resource Planning (("What Is Enterprise Resource Planning (ERP)?", 2022) And when it comes to the different types of ERP Systems There are five different types of ERP Systems Box ERPs, Large Scale ERPs, intermediate ERPs, Flexible ERPs, and Industry Specific ERPs ("ERP system | What is ERP? | Captivea", 2022) there are four types of ERPs based on implementation Open-source ERP, cloud-based ERP, on Premise ERP and Hybrid ERP. (Wood, 2022). there are 3 main types which are most commonly implemented in different organizations and these are implemented in their own respective ways. These ERP Systems are Cloud ERP, On premise and Hybrid respectively ("What is ERP? (Enterprise Resource Planning) | QAD", 2022). On the other hand it is true that there many differences in different ERP Systems but at the time it is also very much true that these very same ERP Systems have many Important functionalities and Features that are common in them like the functions of Integration, Automation, Data Analysis, Reporting, Customer Relationship Management, Accounting, Tracking and visibility, Human Resource Management, Supply chain Management and finally Sales and Marketing (Tikait, 2022). Not only that but there is a fair share of overall benefits to the organizations which are also common like Real time information and data, Improved collaboration, increased productivity, simple estimating and quoting, 360-degree view of business operations, seamless integration, improved Customer service and finally promoting cutting operation costs. (Jepma, 2022).

Literature review

According to several studies that have been conducted internally over the years, all three of the ERP Systems have a solid reputation as powerhouses. And it's also extremely important to note that ERP Systems may only play a significant role inside the organizations under one very important condition: the ERP System must be implemented appropriately. (Parveen & Maimani,

2014). The selection of an ERP solution has grown increasingly challenging in recent years, and not just because one service provider's functionality is superior to the one provided by the other. According to the research that has been done in the past, choosing a service provider has become more difficult as a result of the current monetary climate and the growing popularity of software as a service. (Adams, Piazzoni, & Suh, 2008)

Critical Analysis and Discussion

SAP- Systems Applications and Products in Data Processing was founded in 1972 by Wellenreuther, Hopp, Hector, Plattner, and Tschira and is a worldwide corporation in Europe. The SAP device has various fully integrated modules that address every aspect of commercial enterprise management. (Livingston, 2022)

Functionality

The main functionality of SAP ERP is the robust functionality SAP ERP it provides a wider range of opportunities for the transformation of the business processes as well as a good ROI.

Benefits

provides the full range of capabilities you should anticipate to find in reliable Discrete Enterprise Resource Planning (ERP) software systems, regardless of the solution you're researching, eliminating weeks of study. Identifies the benefits and drawbacks of this product's support for each feature. Saving you time and effort by assisting in the early confirmation or elimination of software frontrunners. Encourages you to learn about new software features, capabilities, and features that

you might not have known about ("SAP vs Microsoft Dynamics vs Oracle - Which one is Better in 2021?", 2022)

Features & Trends

Clear modules and sub-modules are used in the typical Discrete Enterprise Resource Planning (ERP) framework to organize the presentation of 1429 features. Evaluates the level of support that each feature offered by SAP ERP receives, including complete support, partner add-on, customization, third-party, and more. Benchmarks SAP ERP performance overall against market average ("SAP ERP - Features & Functions List", 2022)

Drawbacks
This ERP System is not only expensive. Its implementation process is also lengthy and more importantly it lacks in providing a user-friendly interface and also it requires complex customization. ("SAP ERP Pricing, Demo, Reviews, Features", 2022)

Fig1: SAP Main Screen

ORACLE®

The business or application software of the Oracle Corporation is referred to as Oracle Applications. The term describes the middleware and database-free components. Oracle Fusion Applications is the family of Oracle's most recent offering.

Functionality

Oracle Project Portfolio Management, Sales, Customer Relationship Management System, Advanced Planning & Scheduling, Business Intelligence, HRMS, Payroll, Landed Cost Management, MS (Transportation/G-Log), Process Manufacturing, General Ledger, Payables, Receivables, Cash Management, and Advanced Planning & Scheduling. ("Top 3 ERP Comparisons | Microsoft Dynamics, SAP and Oracle - Sunbridge Software Services Inc.", 2022)

Features & Trend

<u>Scalability and Performance</u>: An Oracle database is scalable according to consumption thanks to features like Real Application Clustering and Portability. It is necessary to manage data consistency and concurrency, which Oracle takes into account, in a multiuser database.

<u>Availability</u>: High data availability is necessary for real-time applications. The configuration of high-performance computing environments ensures constant data accessibility. Data is accessible during planned and unforeseen outages and breakdowns.

Backup and recovery: Its design includes comprehensive features for recovering data from virtually all failures. For high availability, the database must be quickly recovered in the event of a failure. While the damaged portions of the data are being retrieved, the unaffected portions are still available.

Security: The data's security is always the top concern. Oracle offers tools for managing data access and usage. Implementing permission and altering user actions can limit user access while preventing unauthorized access. (Oracle?, 2022)

Benefits

Significantly Lower TCO, On premises ERP solutions will soon become Legacy Applications, Faster Time to value, Easy Accessibility, Continuous Automatic Upgrades, Scalability and Integration, improved user interface, Oracle cloud marketplace, IT Convergence Proprietary ERP cloud Accelerator

Drawbacks

The main drawbacks of this ERP system that its maintenance costs are high and it requires customization. ("SAP, Oracle, Infor ERP Pros & Cons - Efficiency Leaders", 2022)
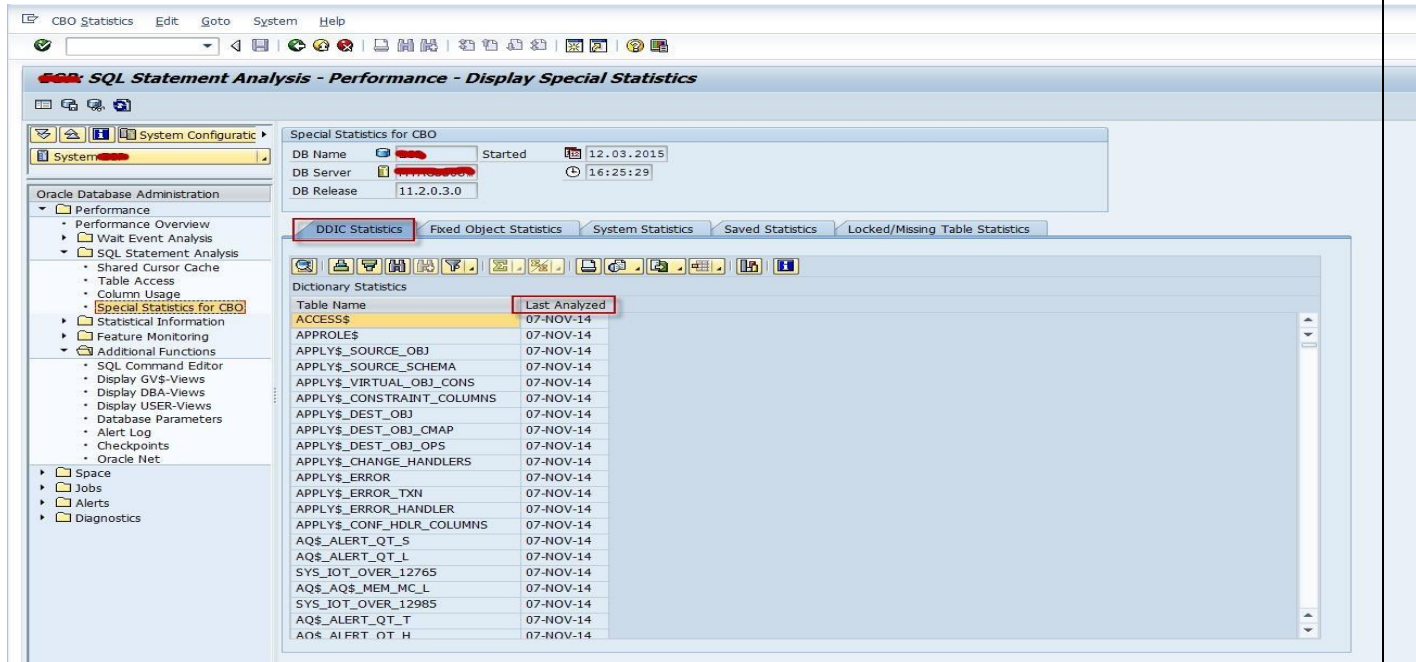

Fig:2 Oracle Dictionary Statistics Screen

Microsoft Dynamics 365 is a cloud-primarily based totally enterprise packages platform that mixes additives of patron courting management (CRM) and corporation aid planning (ERP), alongside productiveness packages and synthetic intelligence tools("What is Microsoft Dynamics 365? - Definition from WhatIs.com", 2022)

Functionality

With Dynamics 365, intelligent business apps that go beyond conventional ERP systems, you can break down data silos. With the help of this extensive collection of end-to-end cloud applications,

you can combine data and relationships, add intelligence to your decisions, and obtain better outcomes. (Corporation, 2022)

Features & Trend

There are two variants of the Dynamics 365 software suite: Business and Enterprise, each with varying degrees of capabilities and apps including Customer insights, Customer Service, Field Service, Sales, Talent, Project Service Automation, Marketing, Finance and Operations.

Benefits

By combining Dynamics 365 CRM and ERP with Microsoft's productiveness programs, customers get a related view of facts intelligence on patron records, transactions, behaviors and preferences, at the side of facts approximately orders, stock and shipping, and similarly to predictive perception gear for decision-makers. The largest advantage of Dynamics 365 is tight integration with different Microsoft enterprise programs. ("What is Microsoft Dynamics 365? - Definition from WhatIs.com", 2022)

Drawbacks

The main and mist important drawbacks of this ERP System are as follows Operating Expense VS Capital Expense, limited data storage, indirect access to database, limited control over the upgrading process, possible downtime, user license minimums (Ryan Plourde, 2022)
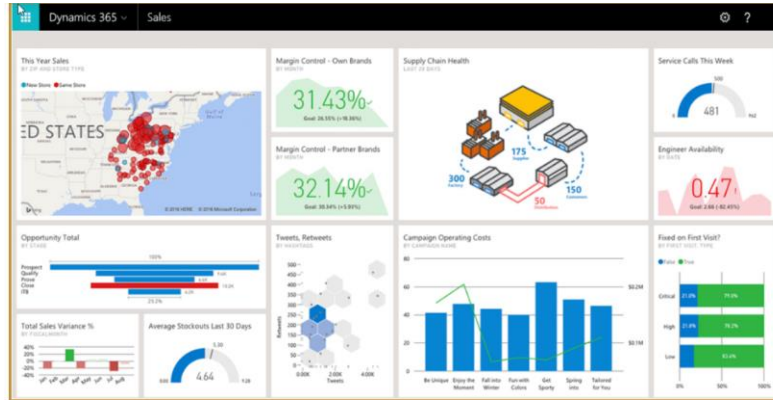
Fig 3: Microsoft Dynamic View

SAP, Oracle and Microsoft Dynamics have many differences between themselves but they also have a point of similarity in them which is that all three of the ERP system Applications are cloud based. And apart from all the differences that we have discussed there is another major difference in these 3 ERP system applications it is their pricing.

	SAP	Oracle	Microsoft Dynamics
store Part	19%	13%	16%
Short-list Rate	38%	18%	31%
Collection Rate When Short Recorded	38%	22%	22%
Application Period	23.1 months	24.5 months	23.6 months
Total Price of Ownership	$2.09 million	$2.38 million	$2.06 million
Reimbursement Period	30 months	29 months	12 months
Disruption at Go-live	44%	42%	41%
Realized 50%+ of Anticipated Business Benefits	34%	21%	26%

Fig4: Price Comparison Table

SAP VS ORACLE VS MICROSOFT DYNAMICS – A COMPARISON

SAP	MICROSOFT DYNAMICS	ORACLE
It is costly because it has fixed quote-based cost for services.	It is **cost-effective as it offers different packages** and you can pay only for the features you are buying not for the whole suite.	It is costly too as it offers premium sized packages which are more suitable for large enterprises.
It can be implemented easily but it does not support further add-ons.	It can easily be installed and customized according to the business requirements of the organization.	It may be difficult to implement but it is a flexible solution and allow customization.
It can be a good choice for large enterprises with robust and fixed needs.	It can be implemented by both SMBs and large enterprises.	It is a more suitable option for large enterprises

Fig5: Comparison Table

Recommendations in regards to Organizational Performance

Literature review and critical analysis work conducted in order to complete this review paper. It can be argued that IT and ERP System solutions do play a vital role in the performance improvement of any organization provided it has been implemented properly. It does not matter which particular IT, ERP solution an organization is using. Studies display that there's a high quality dating among funding in statistics generation and organization returns and human aid productivity. Information generation additionally complements the cap potential of organizations, ensuing in expanded product range and advanced fine and consumer satisfaction. (Hassanzada & Chaterji, 2020) But according to research I would recommend Microsoft Dynamics as it is very cost effective as compared to Oracle and SAP. And not just that it can be implemented by both large and small business enterprises. According to research work conducted previously Microsoft dynamics is the strongest contender as compared to the other ERP solutions it is highly recommended for businesses that want all in one solutions. Microsoft dynamics has the largest contribution in the market share as compared to the ERP solutions. Simply put, by automating and streamlining your business processes, ERP systems can increase corporate efficiency.

concentrating your data and enabling departmental cooperation. giving users configurable reporting options and a clearer picture of organizational performance
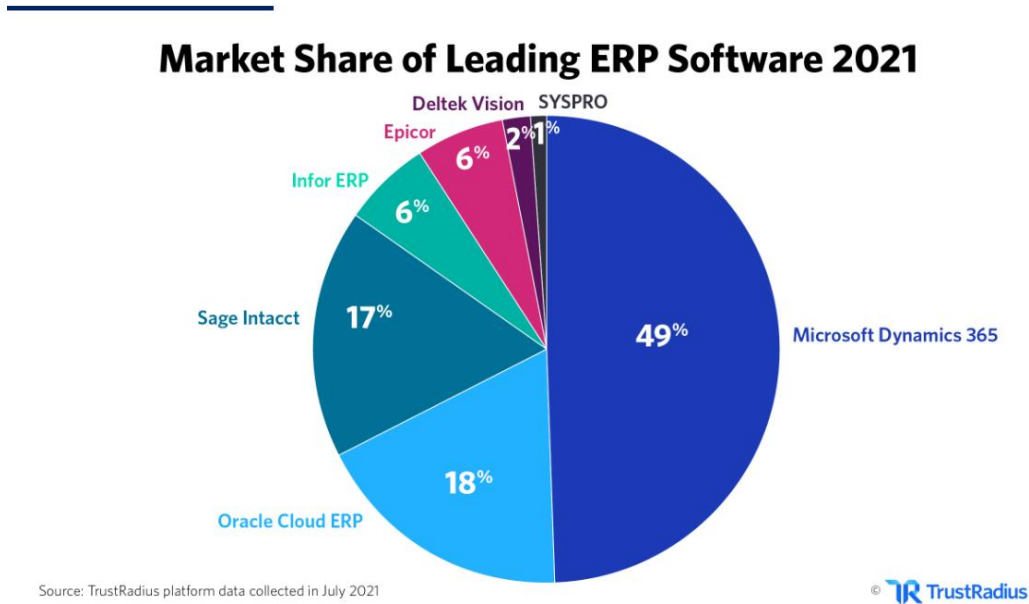
Market Share of Leading ERP Software 2021

Deltek Vision SYSPRO
Epicor
Infor ERP
Sage Intacct 17% 49% Microsoft Dynamics 365
6%
6% 2% 1%
18%
Oracle Cloud ERP

Source: TrustRadius platform data collected in July 2021   © TrustRadius

Fig6: Market Share Comparison Graph

Conclusion

In conclusion ERP Solutions are very important for organizations regardless of them being large or small. Because these solutions increase both the efficiency and the productivity of the organization. ERP systems assist businesses in achieving high performance by creating the most effective methods for resource planning, scheduling, and productivity enhancement. ERP can also give users, customers, and vendors access to data visibility, enabling them to view data in real time and enhance interactions in all facets of business. It also assists in reducing repetitive duties, freeing up time for other activities.(Performance, 2022). ERP software has evolved into a helpful tool for businesses as it produces significant time and cost savings. An ERP also provides

company-wide visibility and reporting that informs executives and bosses wherein groups must

focus their time and attention, which may also require addressing urgent issues.

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