



Analysis Of Enterprise Resources Planning (ERP) Implementation Planning In Car Parts Distributor Companies (Case Study: Cv Persatuan Putra Mandiri)

Yudi Harianto¹, Kautsar Aryayi², Dwi Oktaviyani³, Fahrul Rozi⁴

^{1,2, 3,4} Department of Information System, STMIK Jayakarta, Jakarta, Indonesia

Email Address:

yudi.harianto@gmail.com, aryayikautsar13@gmail.com, dwioktaviyani98@gmail.com, rozifahrul476@gmail.com

*Corresponding author : yudi.harianto@gmail.com

Received: November 21, 2022; **Accepted:** December 15, 2022; **Published:** January 25, 2023

Abstract: CV Persatuan Putra Mandiri is one of the distributors engaged in the sale of vehicle parts, especially cars. This company uses accounting software to manage its daily business activities, but in its implementation, there are still obstacles that can hinder the development of this company itself. The purpose of this research is to provide clear knowledge to the company regarding the weaknesses and strengths that exist in the current system and help companies to determine which ERP system is suitable for the company and its implementation process to the company's business processes. Therefore, this ERP planning stage begins with identifying problems, identifying ongoing business processes and then making system proposals that are described using Business Process Model Notation (BPMN). The next stage is to analyze the ERP system that may be able to accommodate the overall business process. The method that the author uses in this research is descriptive qualitative, where we obtain data from the description of the existing business processes and by conducting interviews with direct sources, namely employees in the company. We did a comparison of several ERP software commonly used in similar companies, and we got the results where the most suitable ERP software for this research is Oracle because it feels best suited to the needs and conditions of the existing business processes in the company.

Keywords: ERP, Qualitative Descriptive, Business Process Model Notation (BPMN), Oracle.

I. Introduction

CV Persatuan Putra Mandiri (CV PPM) is one of the distributors located at Rukan Gading Bukit Indah Block SA – 31, North Jakarta. This company is engaged in the sale of vehicle spare parts, especially cars. This company sells spare parts for various vehicle brands such as Ford, Kia, Hyundai, Mitsubishi, and so on. Based on observations, CV PPM has used



DOI: 10.52362/ijiems.v2i1.1002

IJIEMS This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).



accounting software in the form of Accurate to assist its daily business processes. However, this system is considered incapable of covering several types of business activities in the company because there are several deficiencies that are felt directly by the employees. These problems will certainly have an unfavorable impact on the smooth running of business processes at CV PPM, so it is necessary to implement an ERP software to overcome these problems. ERP is a very good information system concept in a company. The concept of ERP is a system that integrates the processes of each line in company management in a transparent and highly accountable manner. ERP systems can improve company performance by speeding up all processes that can increase company revenue. Therefore, we want to analyze the business processes and systems used in this company, so that we can then provide input regarding better and more efficient business systems and processes for companies in supporting employee performance and especially the company's business processes themselves.

The deficiencies that currently occur in the system used are as follows:

Inventory Module

Multi-warehouse is only limited to good goods, while in fact it requires a warehouse for rejected goods and a warehouse for goods that have been sold but the delivery time has not yet arrived.

The assembling process requires a longer time, because there is no information regarding the shelf position of each available item.

Unavailable reports:

- Slow moving item reports
- Daily sales and goods movement reports
- Warehouse goods movement report

Because basically these reports are the basis for making decisions regarding the creation of Purchase Orders.

Receivables and Payables Module

The modules for accounts receivable from sales and accounts payable from purchases are separated, because the Electronic Data Processing section should not have access rights to the company's accounts receivable and payable accounts.

The need for additional features in the accounts receivable module:

- Draft Account Receivable Payment : input the temporary settlement of invoices paid. This feature functions to track invoice locations.
- Receivable Correction: fix if there is a further discount or cancellation due to late payment. In order to avoid cancellation of past invoices.
- Generate Collection List: helps issue a list of invoices based on specified criteria (time, area, salesman, division).

Unavailable reports:

- Receivable per area
- Receivable per vendor

Reports that are used as a basis for making decisions regarding the promotion to be held.

Manager Application Module



DOI: 10.52362/ijiems.v2i1.1002

IJIEMS This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).



This module has functions or features as parameters (company parameters, branch parameters or division parameters), work calendar, system maintenance at the end of daily and annual processes.

If you have done the end-of-day process, then editing is no longer possible, then if you want to make edits you have to go through a correction transaction or a user who has special rights. Process closing days can be delayed up to a maximum of 9 days.

Human Capital Management Module

However, in the Accurate system, these two modules (Application for Manager and Human Capital Management) are not available.

There is no system that is suitable and able to cover all needs in the business processes of CV PPM, resulting in a lack of effectiveness and efficiency in several sections.

- a. How to analyze every fact in the field and find the best solution through the appropriate system.
- b. How to choose an ERP system that suits the needs of CV PPM?
- c. How is the implementation of the ERP system in accordance with the conditions of the CV PPM?

In order not to be separated from the intent and purpose of this research, we limit the object of research to the car spare parts distributor company CV PPM. This study only aims to analyze and recommend a system that can cover all business process activities in the company.

Research purposes

- a. Provide clear knowledge to the company about the weaknesses and strengths that exist in the current system.
- b. Determine which ERP system is suitable for the company and its implementation process for the business in the company.

II. Literature Review

2.1. Enterprise Resource Planning (ERP)

According to O'Brien and Marakas (2007:320), "ERP is the technological backbone of e-business, an enterprisewide transaction framework with links into sales order processing, inventory management and control, production and distribution planning, and finance."

According to Wallace and Kremzar (2001:12), "Enterprise Resource Planning is a direct outgrowth and extension of Manufacturing Resource Planning and, as such, includes all of MRP II's capabilities. ERP is more powerful in that it, a) applies a single set of resource planning tools across the entire enterprise, b) provides real-time integration of sales, operating, and financial data, and c) connects resource planning approaches to the extended supply chain of customers and suppliers."^[1]

Based on some of the definitions of ERP above, it can be concluded that ERP is a system designed to integrate all internal and external company activities that allow real-time data access.

2.2. SAP Business One



DOI: 10.52362/ijiems.v2i1.1002

IJIEMS This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).



SAP (System Application and Product in data processing) is a software based on enterprise resource planning (ERP) with complete modules to manage the business management that you build, both in large, medium and small businesses. This software was created with the aim of facilitating your business, especially in managing sales planning, operations, financial reports, customer service, supply of goods/logistics or production and managing human resource services in real time.^[11]

2.3. **Oracle NetSuite ERP**

Oracle NetSuite ERP is a cloud-based business management platform that provides a view of your business processes that can be integrated into various systems in your company.^[12]

2.4. **Odoo ERP**

Odoo is a suite of business management software, which includes CRM, e-commerce, billing, accounting, manufacturing, warehouse, project management, and stock management, among others.^[13]

2.5. **MASERP**

Maserp is a local ERP software with accounting as its core. Developed by the MAS Software company which was founded in 1984.^[14]

2.6. **Information Systems**

The information system is a collection and components within the organization related to the process of creating and flowing information. In a computer-based environment, information systems use computer hardware and software, telecommunications networks, database management, and other forms of information technology with the aim of transforming data sources into the various kinds of information needed by users. An information system is an arrangement consisting of several components or elements. Information system components are referred to as building blocks. The components of the information system consist of input blocks, model blocks, output blocks, technology blocks, and database blocks.^[2]

2.7. **Management Information System**

Management Information System (MIS) is part of the internal control of a business that includes the use of people, documents, technology, and procedures by management accounting to solve business problems such as the cost of products, services, or a strategy business. Management information systems are different from ordinary information systems because MIS is used to analyze other information systems that are applied to the organization's operational activities. Academically, the term is generally used to refer to a group of information management methods related to automation or support for human decision making, for example decision support systems, expert systems and executive information systems.^[2]

2.8. **Human Capital Management**





Human Capital Management (HCM) is often known as a comprehensive set of organizational measures. HCM is used to recruit employees, manage, develop, and help optimize employee performance which is the main resource in a business.^[3]

2.9. Payables and Receivables

According to KBBI, Debt or it can be said as debt is cash and non-cash or goods borrowed by someone from another person. While receivables are cash or non-cash types or goods lent by someone or bills of money from someone to another person who borrows. Broadly speaking, both of them do have a similar meaning, namely borrowed money. However, there are differences in perspective. Debt is seen from the point of view of someone who borrows money. So debt means money (obligation) that must be paid. Meanwhile, receivables are seen from the point of view of the person who lent the money. So that what is called receivables is money lent to other people.^[4]

2.10. Inventory

According to Herjanto (2007), inventories are materials or goods stored that will be used to fulfill certain purposes, for example for use in the production or assembly process, for resale, or for spare parts of an equipment or machine.

According to Alexandri (2009), inventory is an asset that includes company-owned goods with the intention of being sold within a certain business period or supplies of goods that are still in the production process or supplies of raw materials awaiting their use in the production process.

Inventory management system is a series of control policies to determine the level of inventory that must be maintained. If the amount of inventory is too large (overstock) it results in large idle funds, it also creates a greater risk of damage to goods and high storage costs. However, if the inventory is too small, it results in the risk of a stockout because often the goods cannot be brought in suddenly and as large as needed, which can lead to cessation of the production process, delays in sales, and even loss of customers.^[5]

2.11. Implementation of the ERP System in the Company

There are several alternative ways to implement an ERP system, including:

- a. Install ERP applications directly and thoroughly. The company replaced the old system with an ERP system. This method also carries risks, such as the company's readiness with the new system. Are the resources in it ready to operate the ERP system or not. Often the implementation process will run slowly because the process is not carried out in stages.
- b. Doing a franchise strategy, this method is done by implementing several different ERP systems in each business unit in the company. All of these systems are also interconnected with common modules such as the financial module. Implementation is usually focused on one unit first which is used as a pilot project. This method reduces the risk of failure as well as tests the ERP system in the unit to see if it can work properly. If the results are satisfactory, then the ERP system can be implemented in other units in stages based on the pilot project reference.^[6]



The method used by researchers in conducting research is a qualitative descriptive methodology. Bogdan and Taylor (L.J. Maleong, 2011:4), argue that qualitative methods are research procedures that produce descriptive data in the form of written or spoken words from people and observable behavior.^[7]

The research data is qualitative data which is not in the form of numbers but descriptions of sentences. Qualitative data includes:^[8]

- a. Data about the general description of the research object
- b. Data from interviews with informants who are the object of research

III. Methods

3.1. Preliminary Study

Preliminary studies were conducted to identify and analyze the research object in more detail. In this case the research object was CV PPM.

3.2. Literature Study

Literature studies were carried out on various types of books, journals and trusted sites from the internet in order to find theoretical and research bases related to the problems found

3.3. Data Collection

Data collection in this study was carried out by:

- a. **Interview:** The interview was conducted by asking questions to CV PPM. Interviews were conducted to obtain more detailed and definite information about the research being conducted.
- b. **Observation:** Make direct observations of the process of the object under study to find out the actual process.

3.4. Business Process Analysis

Identify ongoing business processes, then make a system proposal that is described in the Business Process Model Notation (BPMN).

3.5. Recommended ERP applications

Conduct an analysis of selecting the ERP application that is most suitable for the business processes of CV PPM.

IV. Results And Discussion

4.1. Analysis of Company Business Processes

This section will explain the ongoing business processes and what PPM employees expect in the future.

This business process will be described with the Tools Business Process Modeling Notation (BPMN).

4.1.1. Ongoing Billing Settlement Business Process

The flow of the ongoing bill payment process includes:

- a. The finance/admin section collects sales invoices that are past due.
- b. Make personal notes on what invoices are being brought out for billing.



- c. Perform direct billing to related customers.
- d. Receive payment.
- e. Checking and confirming payment.
- f. Make payment of invoices that have been received.
- g. Return of paid invoices to related customers.

The ongoing bill settlement business process is illustrated by BPMN as shown in Figure 1.

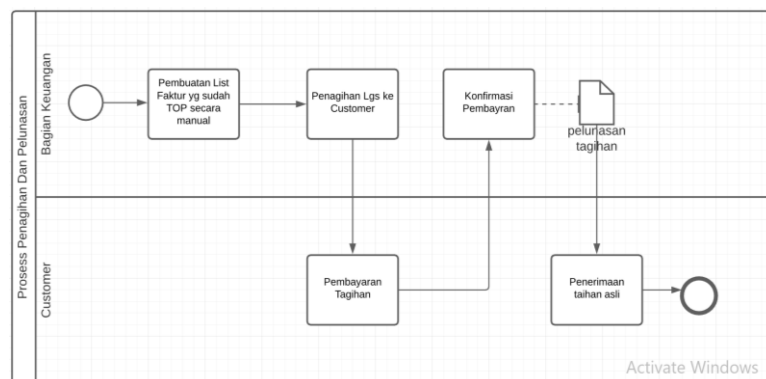


Figure 1. BPMN Ongoing billing and settlement business processes.

Business processes like this have problems, for example the risk of writing errors and slipping of billing invoices is very risky because it only relies on the ability of the finance department or admin.

4.1.2. Expected Billing Settlement Business Process

The bill settlement business process that is expected in the future is as follows:

- a. The sales department submits the invoice to the finance / finance department.
- b. Checking or sorting invoices based on payment terms or overdue invoices.
- c. Drafting Account Receivable (bills) for tracking which invoices are being brought for billing.
- d. Perform direct billing to related customers.
- e. Receive payments from customers.
- f. Checking and confirmation of payment from the Finance section.
- g. The Finance Department pays off the Account Receivable Draft.
- h. Printing proof of payment/payment.
- i. The customer receives proof of payment as a sign that the invoice has been paid.

The business process for paying bills that is expected based on complaints from the finance department is illustrated by BPMN as shown in Figure 2.

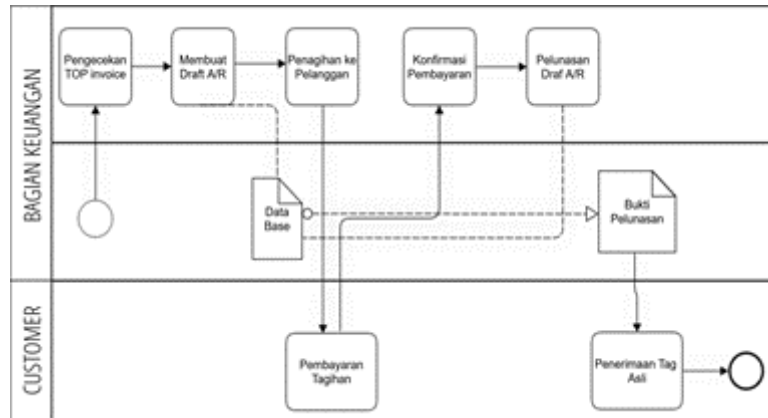


Figure 2. BPMN Expected billing and settlement business processes.

4.1.3. Business Processes for Making Purchase Orders that are currently running

In this business process, initially CV PPM only relied on the sales admin's memory regarding the movement of goods, so mistakes often occurred in making decisions related to Purchase Orders.

The ongoing business process for making Purchase Orders is illustrated with BPMN as shown in Figure 3.

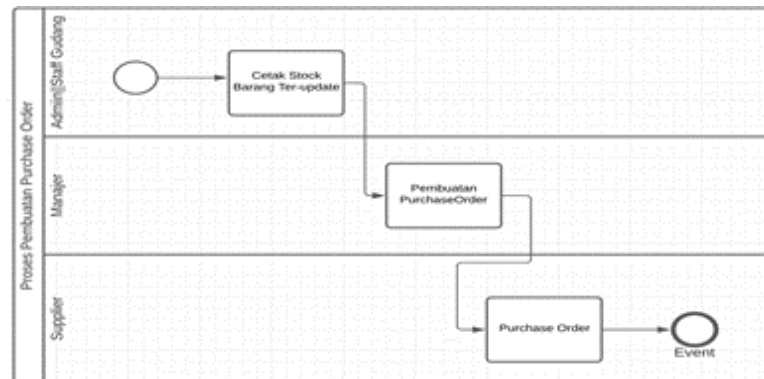


Figure 3. BPMN The ongoing Purchase Order creation business process.

4.1.4. The expected Purchase Order Making Business Process

In the future it is hoped that things like this will not happen again, with this it is hoped that a business process for making Purchase Orders which includes:

- The sales admin section prints supporting reports related to inventory items and informs these reports to the manager.
- Sales admin section with warehouse staff discuss drafting Purchase Orders with related Suppliers.
- Ask for approval of the existing Draft Purchase Order.
- If the Purchase Order is approved, it will be forwarded to the Supplier for further processing.

- e. If the Draft is not approved, then the sales admin section together with the warehouse staff have the obligation to revise the draft Purchase Order with the manager so that the draft can become a Purchase Order.

The expected Purchase Order creation business process can be illustrated by BPMN as shown in Figure 4.

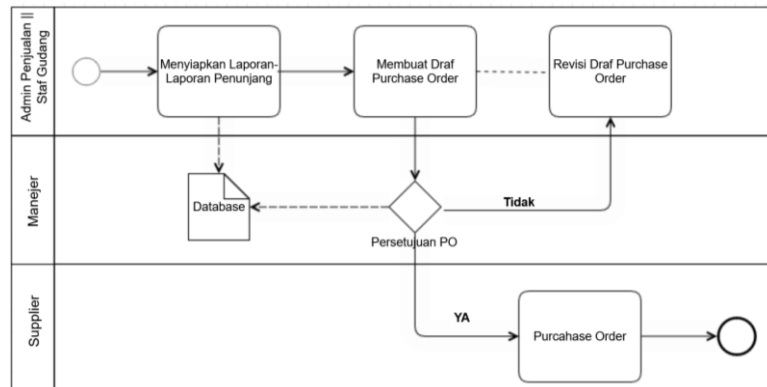


Figure 4. BPMN Expected Purchase Order creation business process.

4.1.5. Human Capital Management Business Process

Currently the system running on CV PPM does not include the HR section. So far, the business processes of this section have been carried out manually, so errors in recording, calculating, and granting leave permits to employees often occur.

With the new system, the HR department hopes that there will be processes for recruitment, leave, appraisal, and employee payroll.[15]

The employee recruitment business process can be illustrated by BPMN as shown in Figure 5.

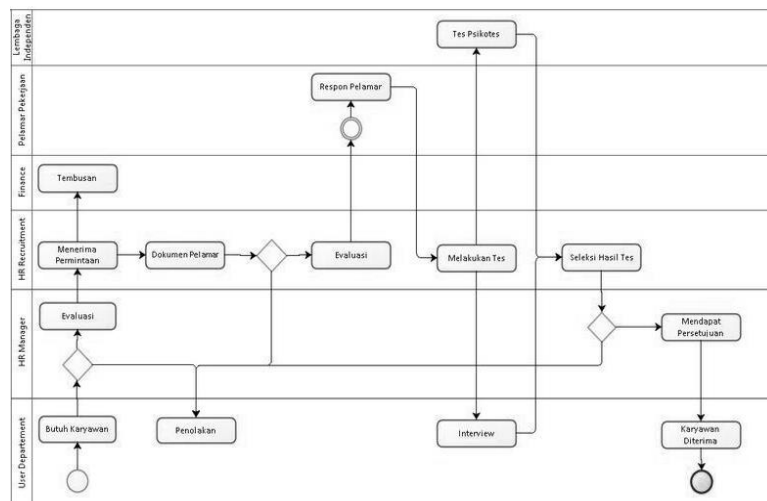


Figure 5. BPMN Employee Recruitment business processes.

The business process for applying for employee leave can be illustrated by BPMN as shown in Figure 6.

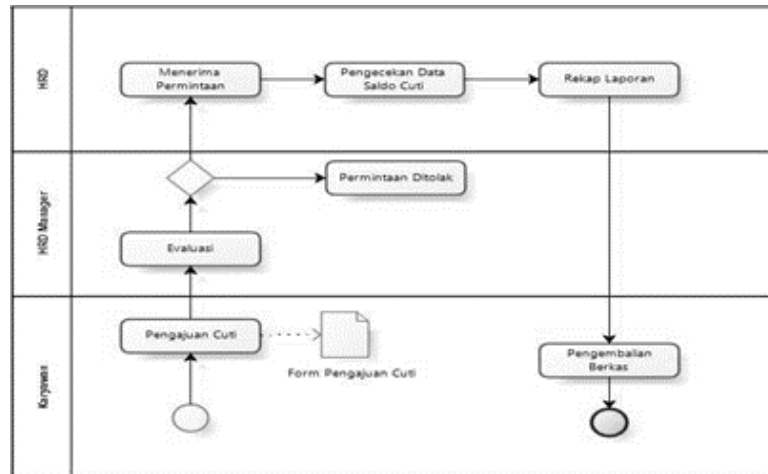


Figure 6. BPMN Employee Leave Application business process.

The employee appraisal business process can be described with BPMN as shown in Figure 7.

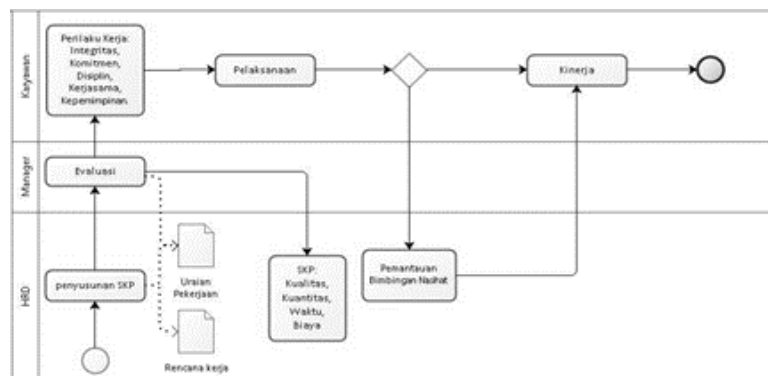


Figure 7. BPMN Employee Assessment business processes

Employee payroll business processes can be described with BPMN as shown in Figure 8.

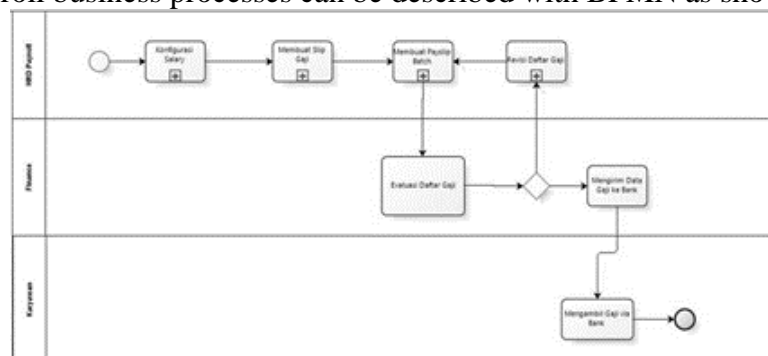


Figure 8. BPMN Employee Payroll business processes

4.2. Application Selection Analysis





The application selection stage is carried out using the ERP application selection analysis method and comparison of ERP application features.

4.2.1. Analysis of ERP Application Selection

The selection of the ERP application to be implemented in this study was carried out using the following methodology:

- Looking for popular ERP applications.
- Determine the features to be compared ERP application comparison analysis.
- Determine which ERP is considered to cover all issues.

4.2.2. Comparison of ERP Application Features

The ERPs that will be compared in this study are SAP Business One, Oracle NetSuite ERP, Odoo ERP, and Maserp. For features or modules, a comparison will be made according to the needs of the company which has been described in the problem identification above. A comparison of these ERP features or modules can be seen in table 1.

Table 1. Comparison of ERP application features/modules

NO	FITUR	SAP	ORACLE	ODOO	MASERP
1	Procurement	v	v	x	v
2	Draft A/R Payment	v	v	x	x
3	Receivable Corection	v	v	v	x
4	Parameter system	v	v	v	v
5	HCM	v	v	v	x
6	Biaya Implementasi	x	v	v	v
7	Support Sistem	v	v	x	v
Total		6	7	4	4

V. Conclusion

Based on the results of the research and discussion that has been carried out, it can be concluded several things as follows:

- The business processes at CV PPM have been computerized, but have not used any ERP type in their implementation.
- In the business process that is currently running, it is found that there are several parts that are not yet effective and efficient.
- This study aims to provide advice to companies to use an appropriate ERP system, by analyzing the business processes that are currently running.
- After conducting research and comparison of several ERP software, the authors suggest companies to use the Oracle ERP system, because it is considered the most suitable for the needs and conditions of existing business processes in the company.

Based on the conclusions above, it can be suggested several things to the company as follows:

- Choose a vendor that is experienced in installing Oracle ERP systems





- b. Make a check list of what needs are needed by the company as a benchmark for the work that will be carried out by the vendor.
- c. Conduct routine assistance and evaluation in the ERP system implementation process.

Bibliography

- [1] Pratiwindya & Akbar, R. (2016). “Implementasi Enterprise Resource Planning (ERP) Pada Sistem Pembelian, Persediaan, Penjualan dan Customer Relationship Management (CRM)”. Prosiding Semnastek 2016, Published by Universitas Muhammadiyah Jakarta. ISSN: 2407-1846.
- [2] H. N. Alfian & A. Eko. “Sistem Informasi Manajemen Produksi dan Penjualan Perusahaan Keramik (Study kasus Keramik Mustika Banjarnegara)”. Jurnal Sarjana Teknik Informatika. Volume 3 No. 1, February 2015. e-ISSN2338-5197, Published by Universitas Ahmad Dahlan.
- [3] greatdayhr.com. (2020, 17 Juli). Pentingnya Memahami Human Capital Management. Diakses pada 10 September 2022, dari <https://penerbitdeepublish.com/cara-menulis-daftar-pustaka-dari-website/>
- [4] accurate.id. (2020, 15 Juni). Mengenal Pengertian dan Perbedaan Hutang Piutang dalam Akuntansi. Diakses pada 10 September 2022, dari <https://accurate.id/akuntansi/hutang-piutang-dalam-akuntansi/>
- [5] kajianpustaka.com. (2018, 24 Februari). Pengertian, Fungsi dan Jenis-jenis Persediaan (Inventory). Diakses pada 10 September 2022, dari <https://www.kajianpustaka.com/2018/02/pengertian-fungsi-dan-jenis-persediaan-inventory.html>
- [6] U. S. Sri, S. Heru, & Riyadi. “Analisis Penerapan Enterprise Resource Planning (ERP) (Studi pada PT Domusindo Perdana)”. Jurnal Administrasi Bisnis. Volume 33 No.1, April 2016, Published by Universitas Brawijaya.
- [7] Ufie, Agustinus. (2013). “Kearifan Local (Local Wisdom) Budaya Ni Ain Masyarakat Kei Sebagai Sumber Belajar Sejarah Lokal Untuk Memperkokoh Kohesi Sosial Sisea”. Published by Universitas Pendidikan Indonesia.
- [8] N. Faridatun. “Analisa Proses Bisnis Sistem ERP (Enterprise Resource Planning) pada Perusahaan Distribusi Batu Bara”. Jurnal Teknologi dan Terapan Bisnis. Volume 2 No. 1, Maret 2019. ISSN_[p]:2615-8817.
- [9] Prisalia, Rahmi dkk. “Pembangunan Sistem Informasi Pengelolaan Data Transaksi Bagian Tambang PT. Yasiga Sarana Utama Berbasis Web dengan Fitur Mobile”. Jurnal TEKNOSI, Vol. 01, No. 01, Oktober 2015. ISSN 2476-8812.
- [10] tikalecturer.blogspot.com. (2012, 12 January). BPMN (Business Processing Modelling Notation). Diakses pada 24 Oktober 2021, dari <http://tikalecturer.blogspot.com/2012/01/bpmn-business-processing-modelling.html>
- [11] soltius.co.id. Apa Itu SAP Business One? Diakses pada 2 November 2022, dari <https://www.soltius.co.id/blog/apa-itu-sap-business-one>
- [12] pointstar-consulting.com. Apa itu Oracle NetSuite ERP? Diakses pada 2 November 2022, dari <https://www.pointstar-consulting.com/id/oracle-netsuite-erp/>





- [13] Wikipedia.org. (25 Mei 2021). Odoo. Diakses pada 2 November 2022, dari <https://id.wikipedia.org/wiki/Odoo>
- [14] Wunady, Jeffery. 5 Software ERP Indonesia Terbaik Tahun 2021 (Dengan Harga). Diakses pada 2 November 2022, dari <https://www.mas-software.com/blog/software-erp-indonesia-terbaik>
- [15] ptkita-uperp11.blogspot.com. (15 November 2017) Proses Bisnis HRD (Recruitment, Cuti dan Penilaian). Diakses pada 7 November 2022, dari <http://ptkita-uperp11.blogspot.com/2017/11/proses-bisnis-hrd-recruitment-cuti-dan.html>

