



OpenBravo ERP in Enterprise Company

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Abstrak

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Tulisan ini bertujuan untuk mengetahui sejauh mana penggunaan software OpenBravo dalam ERP suatu perusahaan. Kemudian bandingkan OpenBravo dengan aplikasi ERP Open Source lainnya seperti Odoo. Enterprise Resource Planning (ERP) memainkan peran penting dalam manajemen organisasi, khususnya di bidang sistem informasi, untuk menghasilkan data yang tepat dan akurat. OpenBravo adalah perangkat lunak berbasis web dan solusi ERP berbasis web sumber terbuka untuk perusahaan kecil dan menengah dan dirilis di bawah OpenBravo PublicLicense, di bawah Mozilla Public License. Openbravo menyediakan antarmuka berbasis web, di mana pengguna dapat melihat produksi, inventaris, informasi pelanggan, pelacakan pesanan, dan informasi alur kerja. Modul-modul yang terdapat dalam software Openbravo meliputi pengaturan umum, manajemen data master, manajemen gudang, manajemen pengadaan, manajemen proyek dan layanan, manajemen produksi, manajemen penjualan, dan manajemen keuangan. Dalam hal ini ERP yang digunakan adalah OpenBravo. Perbandingan dengan ERP jenis lain akan dilakukan dan akan dibahas lebih detail terkait kelebihan dan kekurangan masing-masing ERP yang dibahas. Setelah perbandingan dan kelebihan dan kekurangan dibahas, maka akhirnya dibuat kesimpulan dari semua diskusi yang dilakukan. Dalam hal ini, metodologi penulisan yang digunakan untuk menyelesaikan tulisan ini bersumber dari studi literatur yang berisi beberapa hal seperti konsep OpenBravo, cara kerja OpenBravo, serta kelebihan dan kelemahan OpenBravo jika dibandingkan dengan ERP lainnya

Kata kunci: *Index Terms—ERP, OpenBravo, Odoo*

Abstract

This paper aims to find out the extent of the use of OpenBravo software in an enterprise's ERP. Then compare OpenBravo with other Open Source ERP applications like Odoo. Enterprise Resource Planning (ERP) plays an important role in organizational management, especially in the field of information systems, to produce precise and accurate data. OpenBravo is web-based software and open-source web-based ERP solution for small and medium-sized enterprises and is released under the OpenBravo PublicLicense, under the Mozilla Public License. Openbravo provides a web-based interface, where users can view production, inventory, customer information, order tracking, and workflow information. The modules contained in Openbravo software include general settings, master data management, warehouse management, procurement management, project and service management, production management, sales management, and financial management. In this case, the ERP used is OpenBravo. Comparison with other types of ERP will be carried out and will be discussed in more detail related to the advantages and disadvantages of each ERP discussed. After the comparison and the advantages and disadvantages are discussed, then finally conclusions are made from all the discussions carried out. In this case, the writing methodology used to complete this paper comes from a literature study which contains several things such as the concept of OpenBravo, how OpenBravo works, and the advantages and disadvantages of OpenBravo when compared to other ERPs.

Keywords: *Index Terms—ERP, OpenBravo, Odoo*

INTRODUCTION

Realized or not, economic globalization in Indonesia is rapidly opening up new horizons, especially for the management of companies in Indonesia that were initially focused only on the domestic environment, now shifting to the international environment. This situation forms the management of companies to make radical changes to the management principles that have been used in the production process of products and services that are expected by the community. In addition, the company's management also realizes the importance of the company replacing the frame of mind that has been owned. One way that companies can survive is the use of information technology using the use of information systems that are synchronous and relevant to the needs of the company where it is expected to increase the effectiveness and efficiency of performance because the available information can be managed and handled optimally to support various operational activities of the company, so it is expected that profitability and value of the company will continue to increase from year to year. One example of an information system that can help companies improve the effectiveness and efficiency of enterprise performance is Enterprise Resource Planning (ERP). According to [Utami](#) et al (2016), ERP is defined as an information system that can integrate information available in a company from various aspects, such as funds, people, time, materials, capacity, and others. In addition, according to [Purwaningtias](#) & Mukmim (2019), ERP also means how to do things related to planning and managing all things affiliated with the company, where ERP can increase efficiency and increase the company's profit potential. In addition, ERP can integrate various business components in the company from upstream to downstream.

Related to the things that have been mentioned, this time the author will try to review one type of Enterprise Resource Planning, namely OpenBravo ERP from various points of view. In addition to discussing the use of Overbravo ERP, it will also be compared to other types of ERP.

RESEARCH METHODOLOGY

In making this paper, the methodology used are

1. Literature study,

In this literature study, we will learn about sources related to ERP. The sources used can come from books, journals, papers, and articles which have relevance with ERP, OpenBravo, and others

2. Analyze and Comparison.

In this case, the ERP used is OpenBravo. Comparison with other types of ERP will be carried out and will be discussed in more detail related to the advantages and disadvantages of each ERP discussed.

3. Conclusion, after the analyze and comparison are discussed, completely then finally conclusions are made from all the discussions carried out.

RESULTS AND DISCUSSION

Concept and Stages of ERP

Enterprise Resource Planning according to [Nofri](#) et al (2015) is defined as a method for the industry is seeking more effective and efficient business processes by sharing information in and between business processes and running a business electronically. Enterprise Resource Planning can also be defined as an information system that integrates and automates business processes related to the operating, production, and distribution aspects of a company. Information system projects have six stages of implementation methodology namely planning, analysis, design, construction, implementation, and post-implementation in other sources, Enterprise Resource Planning (ERP) according to [Purmasari](#) et al (2018) is a system for integrating enterprise business processes in computerized processes, and is a system that is integrated with all processes in an enterprise to improve performance and performance. Increase the speed of the process so that it can increase the company's revenue. ERP can manage business processes and overall enterprise resources by integrating business processes in the company and is a concept of planning and managing resources to support various functions in the company so that the work becomes more efficient and can provide the best service for consumers who can provide benefits. Maximum for the company. ERP is also a strategy that is often used by companies to improve the quality of company information systems. Another definition according to [Mahardika](#) et al (2014) is a development of Manufacturing Resource Planning II (MRP II) which is also an evolution of the Material Requirement Planning that was developed previously. Modular ERP systems usually handle manufacturing, logistics, distribution, inventory, shipping, invoicing and company accounting processes. This means that this system will later help control business activities such as sales, delivery, production, inventory management, quality management and human resources. The problem that is often faced by companies is how to organize and integrate their existing data, which is needed by the company many different departments, so it can be used in a computer system that can meet the needs of these different departments. Another definition according to [Meizana](#) et al (2016), Enterprise Resource Planning (ERP) is an abbreviation of three elements of the words Enterprise (Company/Organization), Resource (Resources), Planning (Planning). These three words reflect a concept that ends in a verb, namely Planning. Thus, it means that ERP emphasizes the planning aspect. Integration in ERP system concepts related to interpretation as follows:

1. Link between various business process flows
2. Communication methods and techniques
3. Alignment and synchronization of business operations
4. Coordination of business operations

Enterprise Resource Planning (ERP) is a concept for planning and managing company resources, namely in the form of integrated program application packages and multi-modules designed to serve and support various functions in the organization company, so that work becomes more efficient and can provide better services for consumers, which in turn can generate added value and provide maximum benefits for all interested parties (stakeholders) in the company.

According to Al [Aziz](#) et al (2018) here are the following steps are the stages of ERP system development:

1. Planning Stage:

The first step in implementation is to identify the main objectives and scope of the project.

2. Analysis Stage:
In this phase, pilot ERP systems are developed in various fields for simulation needs and show how to integrate modules with users and identify other requirements.
3. Design Stage:
At this stage, the design begins to be developed. In this phase, the end-user must be given intensive training on ERP packages for users to use the new system.
4. Implementation Stage:
The next step is to carry out the implementation process.
5. Technical Support Stage:
The goal of this phase is to ensure the success of the system in the short term and the long-term system

Benefits, Objectives, and failure factors of ERP implementation.

According to [Rahman](#) (2018), The purpose of an ERP system is to coordinate the resources of the organization's business as a whole. Technically, ERP actually functions to integrate various information systems spread across each department (functional unit) in an institution. ERP is software that exists in organizations / companies that have benefits for:

- 1) Offering an integrated system within the company, so that processes and decision-making can be carried out more effectively and efficiently.
- 2) Allows for global integration.
- 3) Eliminates the need for updating and correcting data as occurs on separate systems.
- 4) Allows management to manage operations and not just monitor and be better able to answer all questions.
- 5) Assisting in the implementation of supply chain management and integrating it.
- 6) Facilitate communication relationships internally and externally within and outside the organization.
- 7) Can reduce the gap between programming by means of effective system maintenance.
- 8) Can reduce application and technology complexity.

ERP system implementation can also fail, the causes include:

- 1) Implementation time and costs that exceed the budget.
- 2) Pre-implementation is not done well.
- 3) Operational strategy is not in line with business process design and development.
- 4) HR is not prepared to accept and operate with the new system.

How Does ERP Work In Company ?

There are several alternative ways to implement ERP systems, including ([Utami, Susilo, & Riyadi, 2016](#)):

- a) Install ERP applications directly and thoroughly. The company replaced the old system with an ERP system. This method certainly contains risks, such as the readiness of the company with a new system. Whether the resources in it are ready to operate an ERP system or not. Often the implementation process will run slowly because the process is not done little by little first.
- b) Doing franchise strategy, this method is done using several different ERP systems on each business unit of the company. All of these systems are also affiliated with common modules such as finance modules. Implementation generally focuses on one unit that is used as a pilot project. This reduces the risk of failure when testing the ERP system on the unit to see if it can run properly. If the results are satisfactory, then the ERP system can be implemented to other units gradually

according to the pilot project reference

What Is OpenBravo?

Openbravo is a web-based open source application used to view business process information that includes workflows, production processes, inventory, customer information, and order tracking. There are at least 8 modules in OpenBravo ([Syahida, Darwiyanto, & Jatmiko, 2018](#)). The modules are:

1. Data Master Management
Data Master Management is the main data warehouse where important information (such as business partners and products) can be created and configured so that they are available in other areas of the Openbravo application.
2. Procurement Management
Procurement Management supports order management, receipt of goods and purchase invoices and analysis of related purchasing data.
3. Warehouse Management
Warehouses and storage areas can be created and managed in this application area, as well as the amount of inventory and inventory valuation.
4. Production Management
Production Management monitors production processes and activities and supports related data analysis production.
5. Material Requirements Planning
MRP provides tools to plan and monitor purchasing and production planning by tracking multiple inputs such as sales forecasts and current inventory levels.
6. Sales Management
Sales Management handles the life cycle of the sales process and also provides tools to analyze sales-related information.
7. Project and Service Management
Project and Service Management discusses service projects and helps analyze project related reports.
8. Financial Management
"Financial Management" area supports daily accounting activities such as accounts payable management and receivables, amortization of assets.

In other version, Openbravo has the following modules: a) Master Data Management, b) Procurement Management, c) Warehouse Management, d) Sales Management and CRM, e) Production Management, Financial Management and Accounting, f) Business Intelligence and Project Management. Project Management, is a functionality that is geared towards companies whose activities are based on the delivery of projects and services, Openbravo allows the management of budgets, phases, tasks, expenses and purchases related to each individual project ([Ramirez, Tenorio, Beltran, & Hernandez, 2015](#)).

Another definition of OpenBravo is according to ([Llanez et al. 2020](#); [Bajaj & Ojha, 2016](#)), Openbravo is a software solution developed in open source, geared towards enterprise resource planning and intended for MSMEs. The use of open source in its creation implies its free distribution and development, i.e. a constant improvement of the source code eliminating errors and adapting the product according to the business needs of the company. Based on a client/web server architecture programmed in Java, its execution is done on Apache and Tomcat integrating support for databases such as PostgreSQL and Oracle. Also, Openbravo is an ERP is a web-based open source tool that seeks to improve overall business performance, based on a single, integrated data model that covers all application areas of an enterprise management system, including business intelligence (BI) tools and point-of-sale (POS) terminals.

Business flow describes the flow of information, the configuration that must be performed in the use of openbravo applications. Openbravo's business flow includes general setup, production, and financial statements shown in the following figure (Purmasari, Priskila, Sasono, & Sunardi, 2018) :

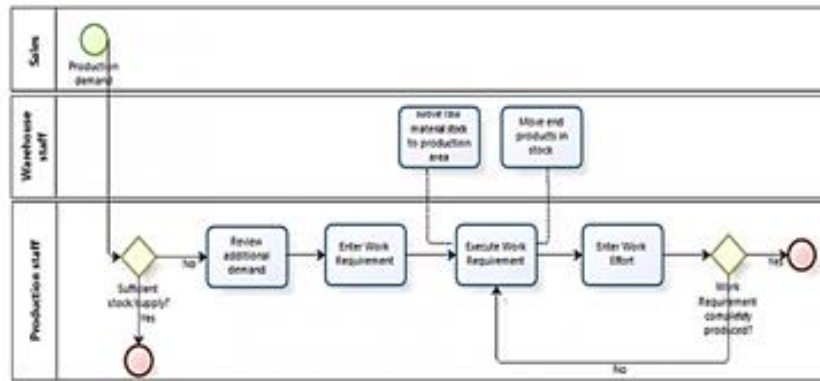


Figure 1 Business Flow Production Mobile

Source : (Purmasari, Priskila, Sasono, & Sunardi, 2018)

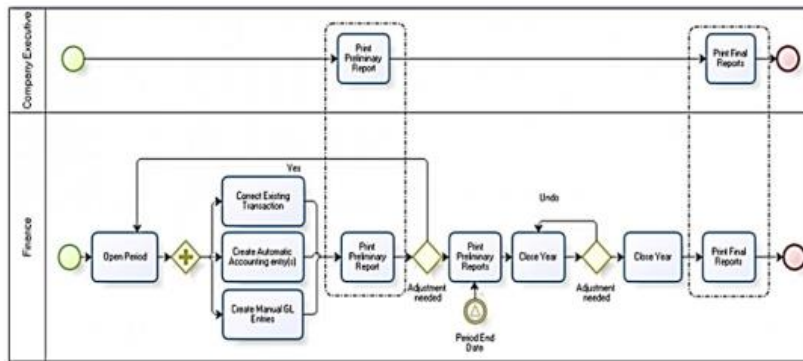


Figure 2 Business Flow Production Mobile

Source : (Purmasari, Priskila, Sasono, & Sunardi, 2018)

How OpenBravo used in the company ?

Identification of Openbravo characteristics can be seen from the Openbravo module (Procurement Management and Sales Management) as well as activities that can be done in the Openbravo application with the available modules. Characteristics can provide an overview of the correlation built between the modules and capabilities of the Openbravo system with the business processes of the enterprise system. Based on the company's business processes and the Openbravo system, a connection between the module and the Openbravo sub-module is made, for example, shown in the following image (Purmasari, Priskila, Sasono, & Sunardi, 2018)

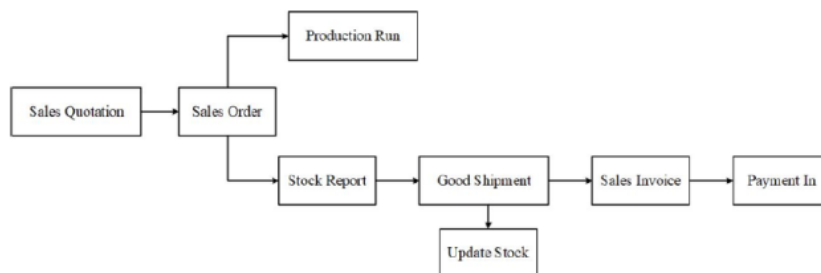


Figure 3 Sales Management Module in Sales Using Openbravo

Source : (Purmasari, Priskila, Sasono, & Sunardi, 2018)

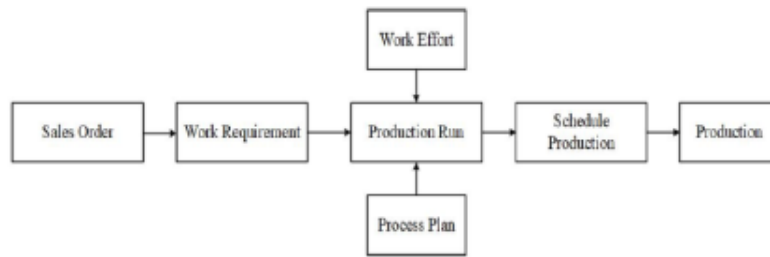


Figure 4 Sales Management module in production activities using Openbravo.

Source : (Purmasari, Priskila, Sasono, & Sunardi, 2018)

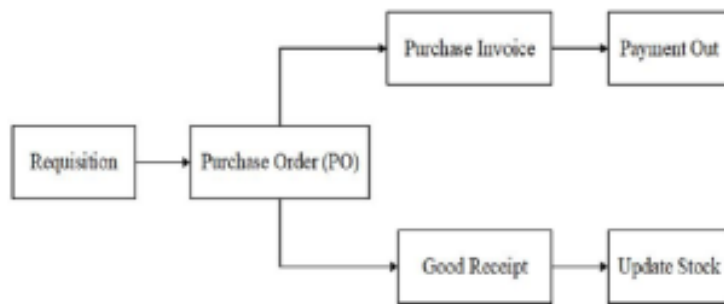


Figure 5 Procurement Management module in procurement activities using Openbravo

Source : (Purmasari, Priskila, Sasono, & Sunardi, 2018)

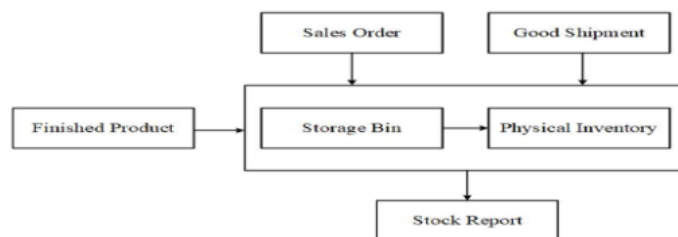


Figure 6 Procurement Management module (cont.) in procurement activities using Openbravo.

Source : (Purmasari, Priskila, Sasono, & Sunardi, 2018)

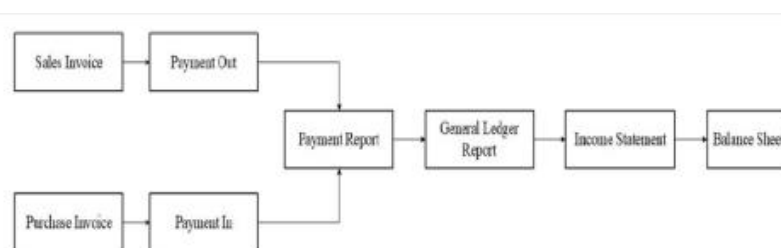


Figure 7 Procurement, Sales, and Financial Management Module (cont.) in financial activities using Openbravo

Source : (Purmasari, Priskila, Sasono, & Sunardi, 2018)

In other cases, according to [Marina](#) et al (2017), Openbravo ERP software has been use as the main component of some designed solution. Specifically,

Openbravo has an application called Appliance, which is a virtual machine ready to be executed through virtualization software, in such a way that the application contains everything necessary for the start-up of the Openbravo ERP system. The VMware virtual machine with Openbravo installed (Openbravo Appliance) includes the following components: (1) Linux as the Operating System; (2) Apache and Tomcat server; (3) PHP as programming language and (4) MySQL as database. Another important component in the design has been VMware Player, a product from the company VMware that allows you to create and run virtual machines created with any VMware product. VMware Player can be downloaded for free from the company's website

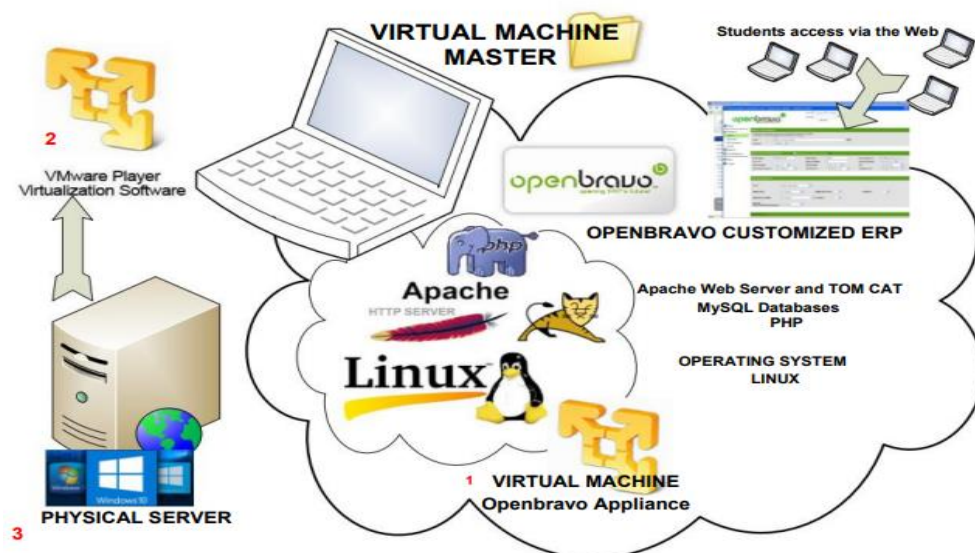


Figure 8 Solution of OpenBravo based on Modular Components

Source : (Marina, Fuentes, Camarac, & Utrilad, 2017)

ERP Comparison (OpenBravo vs Odoo)

In this case, the author will try to make a comparison between Openbravo and other software, Odoo. Before making a comparison, it is first important to understand what Odoo is.

Odoo is an open-source platform provided by TinySPRL that has a wide range of integrated modules, including customer relationship management, accounting, sales, and stock modules. While other sources define Odoo as Odoo (Open ERP) is a modern ERP application (Enterprise Resources Planning) and complete distributed open-source, in which there are various business application programs including Sales, CRM, Human Resources, Warehouse Management, Manufacturing, Finance and Accounting, and so on. Odoo (OpenERP) is built using open object framework technology that has the power of MVC architecture, workflows, or Workflows (Model View Controller) (Butar Butar et al., n.d.). The next question is how to create ERP modeling using Odoo. The answer to this in the form of research can be seen in the following image ([Purwaningtias & Mukmin, 2019](#))

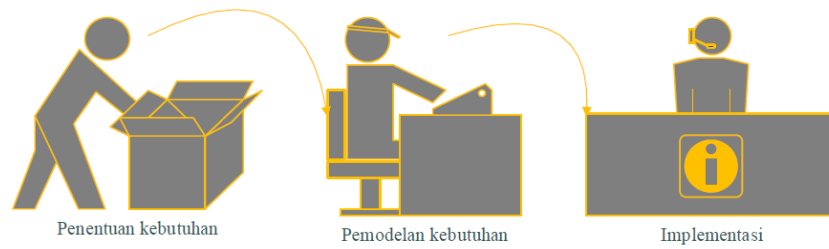


Figure 9 Research Steps to make ERP modeling using Odoo

Source : (Purwaningtias & Mukmim, 2019)

Now, after understanding about Odoo. Let's take a look at how it compares between Openbravo and Odoo, especially in this case focusing on their strengths and weaknesses.

Advantages and Disadvantages of Odoo ([Butar-Butar](#), Arya Sasmita, & Githa, 2021; [Supaidi](#), 2017)

1. Advantages of Odoo

- a. Access reliable information
- b. Multi-platform can use Windows, macOS, Linux, and Android operating systems
- c. Avoid redundancy of data entry and operations
- d. Reduce time lag to display information and reports
- e. Cost reduction, time savings, and increased control with enterprise-scale analytics
- f. Complete and integrate modules

2. Lack of Odoo

- a. The Odoo application program provides many configuration options, making it difficult to determine the specific/best way.
- b. Odoo was developed by the community, so each time the program underwent many changes and improvements.
- c. tiny ERP/Odoo developed using the Python programming language does not have a large community, so if there is a problem it is difficult to find information.

Advantages and Disadvantages of OpenBravo

In this case that will be discussed is OpenBravo 3.0. The advantages and disadvantages of version 3.0 are as follows ([Yulianto](#) & Mauludin, 2017)

Advantages of OpenBravo 3.0 ERP :

1. Full Web Base System, so OpenBravo 3.0 is perfect for companies that have many branches in many cities, as they can access the database system centrally.
2. OpenBravo 3.0 uses PostgreSQL or Oracle databases commonly used by IT departments in every company/organization.
3. OpenBravo 3.0 can run on Linux or Windows Operating System platforms
4. OpenBravo 3.0 has very high flexibility in adjusting application flow to enterprise/organizational business processes.

There are some additional advantages of OpenBravo, according to ([Ballestas](#) &

Gonzalez, 2014) and (Munoz & Revelo, 2015), Openbravo has many advantages over other ERP systems, such as: extensive functional coverage, easy to adapt, flexible implementation, and a subscription model that allows costs to be optimized and adapted according to use, avoiding an expensive upfront investment. Its interface is 100% web-based: no software has to be installed on the workstations

Disadvantages of OpenBravo 3.0 ERP

1. OpenBravo 3.0 eliminates the very important CRM (Customer Relationship Management) module as a means of customer maintenance.
2. Although customization/engineering can be done in accordance with the business processes of the company/ organization, it can lead to a loss of competitive advantage of industry standards described by OpenBravo 3.0.
3. The working system on OpenBravo 3.0 can be said to be complex when compared to the needs of the company / organization.
4. OpenBravo 3.0 requires setup, configuration and customization processes that are in accordance with company/organization policies/regulations to be completely in accordance with the business process, so that assistance is needed from consultants or end users who have used OpenBravo ERP 3.0.

CONCLUSION

Based on the series of discussions mentioned earlier, especially comparing Odoo and OpenBravo, here are some things that can be concluded both Odoo and OpenBravo have disadvantages i.e. both have many possibilities related to configuration aspects. Open Bravo can use PostgreSQL/Oracle databases commonly used in companies, especially in IT, and can run on Linux or Windows Operating Systems. However, the drawback is that it is not yet available on macOS and Android, something Odoo excels at Open Bravo can be used for companies that have branches in other cities because the database system can be accessed centrally, while Odoo has not accommodated it. Open Bravo has a very high flexibility advantage in terms of application flow in enterprise/organizational business processes, whereas Odoo has more complete and integrated modules, something OpenBravo does not yet have Open Bravo provides specific descriptions of the series of activities and relationships associated with the processes involved. Open Bravo provides a web-based interface, which allows users to view and know things related to production, such as product information, inventory, customer information, order tracking, and workflow information within the organization/company.

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