Inventory Module Development for PT. Suberpart Bearindo

[1]**Andriko**, [2]**Rosalina**

[1,2]President University, Fakultas Komputer, Jl. Ki Hajar Dewantara, Cikarang Baru, Bekasi
e-mail: [2]rosalina@president.ac.id

Abstract — **As the internet grows in Indonesia, companies are looking forward for better management software. One of them is Enterprise Resource Planning. The Enterprise Resource Planning is an enterprise-wide package that integrates all business departments into a single system with a shared database. This research discusses about the utilization of the internet in order to provide information about Inventory Module in Enterprise Resource Planning application. Inventory Module for PT. Sumberpart Bearindo will provide the Information Management for Inventory part for the end user. It has the feature for searching an item, notification, calculation, and report feature which produce automatically report based on filter date, and type of report.**

Keywords – **inventory module, enterprise resource planning, management.**

I. INTRODUCTION

Today business process grows rapidly and more complex. Organization that wants to simplify their business processes can search a lot of facilities that can be utilized. One of them is computer, for helping them to do their core in business process. That will lead the computer technology to be able to adapt for the needs of each organization.

The popular system which helps many organizations or companies to their core business is Enterprise Resource Planning (ERP). ERP is business management software, that a company or organization can use to input, store, modify, manage and interpret data from many business activities, including Product Planning, Manufacturing, Marketing, Inventory Management, Shipping and Payment, until Accounting. The excellence of this system is integrated for core business process often in real time, using common database maintained by a database management system. ERP have function to track business process, cash, production capacity, inventory, stock mutation and many things.

For the big company, ERP system is considered to be a vital organizational tool because, it integrated towards various organizational systems and facilitate error. But ERP system development is different from traditional system development. ERP system can be run on a variety of computer hardware and network configuration, typically using a database as an information repository.

The use of this system is facilitating the company to do activities through ERP. It will make more efficient and effective for the jobs in each division.

The scope of this project is scaled down in order to finish the time line on time. This project will be focused on Inventory Module. The employee of PT. Sumberparts Bearindo will involve in this developing project. The main objective of this research are :

1. Makes an Information Module Application for inventory division for PT. Sumberpart Bearindo, and can be useful and helpful for the inventory division in this company.
2. To create automatically report for inventory information based on database, using filter from the users.
3. The system can be easily understand and fit with the requirements of employees in this division, and willing to fulfill feedback from them, until the determined time.

II. RELATED WORKS

2.1 Net Suit ERP

NetSuite which is the world's most deployed cloud Enterprise Resource Planning solution have build supply chain management software, it offers a complete set of inventory management, manufacturing and purchasing capabilities that helps move inventory to the right place, at the right time, at the right cost. The most prominent is Cloud Management, Inventory management is about knowing what products to have on hand and when to have them on hand. It's about understanding what you have in your warehouse and where your stock is located. It will helps the users maintaining the inventory from anywhere, its need cloud-based Inventory. The attractive offer an alternative to manual approaches to inventory management. The best cloud system provides real-time visibility into inventory, with anywhere, anytime access to critical information. It can function at the core of an ERP system, integrating seamlessly with demand planning, financials and logistics. Automated capabilities eliminate manual inputs while maximizing efficiency throughout the inventory life-cycle. There are 3 excellencies :

Scalability : A cloud system lets companies select the right level of inventory management sophistication for your business or industry. It lets use only the functionality companies need, without needless complexity. As business grows, cloud inventory management scales with companies by offering more sophisticated features and virtually unlimited capacity for more users and information.

Flexibility : A cloud-based inventory management system built with flexibility, that will help all things in mind and allows companies to define business processes into the system. It offers flexibility for companies to implement customizations and business rules that support your unique requirements. The optimal cloud architecture preserves these customizations for, so that they remain intact even as the cloud provider periodically upgrades system to the latest release.

Visibility : The cloud provides inventory management to a new level. It gives companies the ability to easily grow with business. It allows companies to configure the system to business requirements. And it gives companies full visibility within your warehouse and across multiple

2.2 SyteLine ERP Manufacturing Software: Materials & Inventory Management

Manufacturers division need to be able to keep track of inventories in multiple locations and find the actual and best prices for the materials they need to make the best products at the best price for their customers. InforSyteLine, a manufacturing ERP system, makes the sourcing process easy and dynamic. companies can easily locate, reserve, manage, and buy supplies and materials from multiple locations, vendors, customers, and company sites. InforSyteLine ERP Manufacturing software helps reduce lead times and inventory requirements and improves the timely delivery of custom products. As transaction is created, alternate material, component locations and suppliers can be provided notifications via email or an XML message. And if the transaction changes, updates or cancellations are provided immediately so all parties in the operational process are informed. The SyteLine Manufacturing ERP system will gives you immediate visibility to accurate raw materials inventory in any warehouse, or your suppliers' warehouses, along with the ability to transfer or order materials quickly in response to production needs. Customers benefit from your ability to electronically connect order fulfillment and production processes with reservation of supplier materials[10].

2.3 SYSPRO's Inventory Management Software

SYSPRO's Inventory Management Software enables effective and efficient customer servicing and enhanced profits by providing superior Recall Management, Trace ability, and Stock Control across the entire Supply Chain. The product will ensure:

Coordination – The important key that drive inventory across the supply chain are coordinate, tracked and controlled to optimized inventory

Standardization – Standard analysis of slow-moving, excess, active and static stocks to enable targeted promotional and product rationalization, as well as providing accurate obsolete.

Improved Utilization – Improved warehouse utilization and system's for the procurement and production scheduling teams.

Type of SYSPRO'S Inventory Software are :

SYSPRO Inventory Forecasting focusing and improving forecast accuracy. It is essential to minimizing inventory holding and obsolescence costs, especially in forecasting environments where product ranges and configurations are extensive, bills of material are complex, and raw material and component lead times are long. SYSPRO will provide the tools to measure or calculate the quality of company sells and enables you to produce automatic and manual forecast. Based on sales history. As well as to easily identify products that contribute most to your business in terms of sales, gross profit, cost of sales, quantity sold or hits.

SYSPRO Material Requirements Planning will give you clear visibility to the integrated effect of current and future supply and demand in market. Facilitate the owner to better purchasing and production decisions and reduce excess and obsolete inventory[9].

2.4 Old Inventory Application

There are some ERP Modules like accounting, sales, purchasing and many modules. Focused on Inventory Module which develops, Older application does not have cloud-based to store their changes into online database. Also, it cannot accessible from mobile phone.

Here is the comparison table between Netsuite, Old Inventory Application, and Newer Application feature:

Table 2.1 Comparison Netsuite, Old Application and Newer Application

| Description	NetSuite	Old Inventory Application	Newer Inventory Application
Inventory Management	✔	✔	✔
Reporting	✔	✔	✔
Cloud Platform	✔		✔
Search Feature	✔	✔	✔
Multi level Application	✔	✔	✔

III. SYSTEM ANAYSIS

3.1 System Overview

Web ERP Inventory Applications for PT. Sumberparts Bearindo will provide all needs for warehouse staff, until other departments that need inventory module such product, product category, supplier, report for all feature, and many more. Development tools for this web ERP application using HTML 5, PHP 5, Javascript, JQuery and CSS.

3.2 Usecase Diagram

This application has 14 main use-cases, there are Login, Register, Add Product, Add Product Category, View Supplier, Purchasing Material, Return Item, Item Consumption, Report, Report Product, Report Supplier, Report Purchasing, Report

Purchase Return, Report Item Consumption. This Use-Case Diagram have 2 actors, there are admin and user.
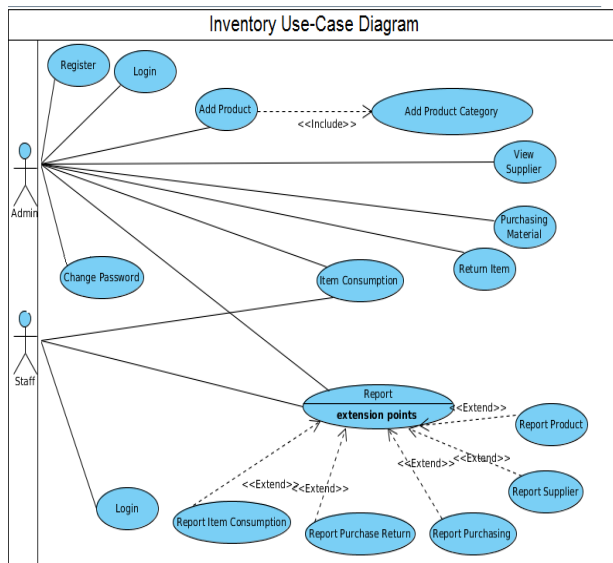
IV. SYSTEM DESIGN AND IMPLEMENTATION

Database Design

The database for PT. Sumberpart Bearindo have 10 tables. There are userdata, supplier, kategori, barang, pemakaian, pemakaiand, returpembelian, returpembeliand, pemakaian, and pemakaiand. In each table, have primary key and foreign key (relationship) between tables.

User Interface Design

The new ERP application for PT. Sumberparts Bearindo will have around 23 pages to access the features inventory section.
1. Product Page

Figure 4.1 Product Design

Based on Figure 4.1 the product page is the page to view the list of product from database.

2. Add or Input Product Page

Figure 4.2 Add Product Design

Based on figure 4.2 the add or edit product form is the page to input and edit the information of the product.

3. Product Category

Figure 4.3 Product Category Design

4. Supplier Page

Figure 4.4 Supplier Design

5. Purchase Page

Data Pembelian Barang

+ Pembelian Baru

Nomor	Tanggal	Supplier	Total	Edit	Hapus

List Data Pembelian Barang

Figure 4.5 Purchase Design

6. Add Purchase Transaction Page

Transaksi Pembelian Barang

Tanggal: _____   Supplier: _____ _____

Keterangan: _____

Kode Barang	Nama Barang	QTY	Satuan	Harga	Sub Total	Action

List Barang Yang Dibeli

Grand Total _____

Selesai

Figure 4.6 Add Purchase Transaction Design

7. Purchase Return Page

Data Retur Pembelian Barang

+ Retur Pembelian Baru

Nomor	Tanggal	Supplier	Total	Edit	Hapus

List Data Retur Pembelian Barang

Figure 4.7 Purchase Return Design

8. Purchase Return Transaction Page

Transaksi Retur Pembelian Barang

Tanggal: _____   Supplier: _____ _____

Keterangan: _____

Kode Barang	Nama Barang	QTY	Satuan	Harga	Sub Total	Action

List Barang Yang Diretur

Grand Total _____

Selesai

Figure 4.8 Purchase Return Transaction Design

9. Item Consumption Page

Data Pemakaian Barang

+ Pemakaian Barang Baru

Nomor	Tanggal	Total	Keterangan	Edit	Hapus

List Data Pemakaian Barang

Figure 4.9 Item Consumption Design

10. Item Consumption Transaction Page

Transaksi Pemakaian Barang

Tanggal: _____   Keterangan: _____

Kode Barang	Nama Barang	QTY	Satuan	Harga	Sub Total	Action

List Barang Yang Dipakai

Grand Total _____

Selesai

Figure 4.10 Item Consumption Transaction Design

11. Filer Purchase Report

Cetak Laporan Data Pembelian Barang

Dari Tanggal: _____   Sampai: _____

Tipe Laporan: ◯ Summary ◯ Detail

Kode Supplier: _____ _____ ☐ Semua Supplier

Tampilkan

Figure 4.11 Filter Purchase Report Design

12. Filter Purchase Return Report

Cetak Laporan Data Retur Pembelian Barang

Dari Tanggal: _____   Sampai: _____

Tipe Laporan: ◯ Summary ◯ Detail

Kode Supplier: _____ _____ ☐ Semua Supplier

Tampilkan

Figure 4.12 Filter Purchase Return Report Design

13. Filter Item Consumption Report

Figure 4.13 Filter Item Consumption Report Design

14. Product Report

Figure 4.14 Product Report Design

V. CONCLUSION

Web ERP Application for PT. Sumberpart Bearindo is an application to fulfill the inventory feature which is needed by this company. This application as well provides beneficial information about Inventory Application for the readers.

- Integration of PHP and MySQL can help to record transaction data or important data in PT. Sumberpart Bearindo, so it can also enhance the effectiveness of the work as well as providing information quickly and accurately
- The organized system information can help to report the important details of information without making manual report.
- Application has simple interface and function, for the new user can understand easily and use optimally for each function.

Although the application is made to meet the criteria of PT. Sumberpart Bearindo, but in the future development can be combined with other applications and hopefully it can be also useful for the readers.

REFERENSI

[1] Beal, Vangie. What is Enterprise Resource Planning (ERP)? Webopedia. http://www.webopedia.com/TERM/E/ERP.html
[2] Bingi P., Maneesh Sharma, K. and Jayanth Godla, K. CRITICAL ISSUES AFFECTING AN ERP IMPLEMENTATION.http://carl.sandiego.edu/gba573/critical_issues_affecting_an_erp.htm
[3] ERP Odoo. https://www.odoo.com/page/about-us
[4] Epicor ERP. http://www.epicor.com/products/erp-software.aspx
[5] Get ahead of the game with an enterprise resource planning system (ERP) from SAP. http://go.sap.com/product/enterprise-management/erp.why-sap.html
[6] Inventory Definition. http://www.businessdictionary.com/definition/inventory.html
[7] Literature Review On Inventory Management With Practical Examples. http://www.ukessays.com/dissertation/literature-review/literature-review-on-inventory-management-with-practical-examples.php
[8] Martin, James. Wikipedia: Enterprise Resource Planning. https://en.wikipedia.org/wiki/Enterprise_resource _planning
[9] Syspro ERP. http://www.syspro.com/product/invenory
[10] SyteLine ERP Manufacturing Software: Materials & Inventory Management. http://www.godlan.com/erp_manufacturing_software/materials_and_inventory_management
[11] Top 10 ERP Trends The Key drivers of the ERP Market. http://www.infomotion.com.au/wp-content/files/Top_10_ERP_Trends.pdf, 1-3
[12] What is ERP . http://www.netsuite.com/portal/resource/articles/erp/what-is-erp.shtml