

Warehouse Data System Analysis PT. Kanaan Global Indonesia

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Abstract—Data Warehouse is a computer system for archiving and analyzing historical data of an organization. An organization copies information from its operational systems to a warehouse. The purpose of this research is to help provide information in supporting the decision-making process in the field of sales, purchasing and material inventory control at PT Kanaan Global Indonesia. PT Kanaan Global Indonesia previously presented the data warehouse manually. By designing a data warehouse system, company leaders can be more assisted in making decisions that are faster and more precise. The research method used includes analysis of observations, interviews, documentation and literature study. The result of this research is the availability of a data warehouse that can produce fast and precise information, thus helping the company in making decisions.

Keywords— Data, Information, Warehouse

I. INTRODUCTION

Data warehouse is a collection of technologies designed to convert large amounts of data into useful information. To achieve its objectives, the data warehouse uses data consolidation methods from different transaction systems into an unified, consistent, quality database with only one purpose, namely to present information. Thus, a data warehouse usually has very large amounts of data that reach tens or hundreds of Gigabytes or even Terabytes, and the types of users who have very varied needs. PT Kanaan Global Indonesia previously presented a data warehouse manually. Transaction data has not been well integrated, so the report maker presents reports that are not appropriate, besides that it also takes a long time to make the report. This certainly makes it difficult for executives to determine company policy. Therefore, PT Kanaan Global Indonesia realizes the importance of a data warehouse that can provide fast and accurate information to support decision making. Now, PT Kanaan Global Indonesia has its own data warehouse system called KIS (Kanaan Integrated System).

II. RESEARCH METHOD

2.1 Data Warehouse

Data Warehouse is a collection of data that is subject oriented, integrated, non-volatile, and has time variance to support management decision making. The data warehouse (in various forms) represents a central database for the entire company to store and access historical data and its existence is separate from the operational system.

Also said in his research that a data warehouse is a concept and a combination of technology that facilitates the organization to manage and maintain historical data obtained from operational systems or applications. From the above definitions it can be concluded that the data warehouse is a centralized and mutually exclusive database. react to manage and maintain historical data that is subject-oriented, integrated, non-volatile and has time variance to support decision making [1].

2.2 KIS Data Warehouse System

Data warehouse has several characteristics, according to Ponniah (2010) a data warehouse has the following main characteristics:

1. Subject Oriented

The first characteristic of a data warehouse is subject-oriented, this characteristic in a data warehouse means that the data in the data warehouse is organized based on topics or business subjects. Classic operating systems are organized around company-owned applications. In insurance companies, for example, applications are owned and used to process data such as car data, customer life data, customer health data, and accident victim data. The main subject areas for insurance companies include customers, policies, premiums, and claims data. For a manufacturing company, the subject areas include products, SKUs, sales, vendors, etc. Each type of company has a unique set of subjects.

2. Integrated

The second characteristic of a data warehouse and the most prominent of which is integration. Integration is the most important aspect of all aspects possessed by a data warehouse. Data from various sources is entered into the data warehouse. During the process of loading data into the data warehouse, data is converted, reformed, reordered, summarized, and so on. The result is that when the data is stored in the data warehouse, it has a single physical image of the company.

3. Not changeable

The third characteristic of a data warehouse is that a data warehouse is volatile.

4. Time Variance

The characteristic possessed by a data warehouse is time variance. Time variance implies that each unit of data in the data warehouse is accurate within a certain period of time. In some cases, a record has a transaction date and time. But in each case, there is some form of time marker to show the time span over which the record is accurate.

5. Granularity

According to the operational data system is made in real-time so that the query process is carried out to get information

directly. In the data warehouse the analysis process must pay attention to the details per level, for example per day, monthly summary, quarterly summary. Granularity refers to the level of detail or summarization that exists in data units in the data warehouse.

2.3 System Information

Information systems, basically a system is a group of elements that are closely related to one another, which function together to achieve certain goals.[2]

2.4 Supporting Component

The data staging component is the next building block after the data source. In the middle, you can see the data storage component that manages the data warehouse, this component not only stores and manages data, but also maintains a part of the data called the metadata repository. The information delivery component is on the right. This component consists of all matters relating to providing information from the data warehouse for users.[3]

2.5 MySQL Databases

After the analysis is carried out, the database on the sales system in the store is MySQL. MySQL is a database management system (database management) using the basic command of SQL (Structured Query Language) which is quite well known. This multi-user and multi-flow MySQL database management system (DBMS) has been used by more than 6 million users worldwide. MySQL is an open source DBMS with two license forms, namely Free Software (free software) and Shareware (proprietary software with limited use). So MySQL is a free database server with the GNU General Public License (GPL) so you can use it for personal or commercial purposes without having to pay for an existing license.[4]

2.6 PHP

PHP Hypertext Preprocessor atau disingkat dengan PHP ini adalah suatu Bahasa scripting khususnya digunakan untuk web development. Karena sifatnya yang server side scripting, maka untuk menjalankan PHP harus menggunakan web server. PHP juga dapat diintegrasikan dengan HTML, JavaScript, JQuery, Ajax. Namun, pada umumnya PHP lebih banyak digunakan bersamaan dengan file bertipe HTML".[3]

2.7 XML

XML (Extensible Markup Language) is a markup programming language that has rules for providing two different document codes that can be read by humans and read by computers. Through XML, it will produce a text data format that can be used to represent database structures. In addition, data synchronization can be done in real-time by the user. This program language is very suitable for handling databases on web browsers and web servers. [5]

III. RESULT AND ANALYSIS

In the discussion, discussing the results of research in the form of system design as a whole are as follows:

3.1 Computerized System Analysis

PT Kanaan Global Indonesia needs a system to process material data input output accurately and efficiently. For this

reason, a computerized decision support system is needed so that it can easily determine decisions within the company.[6]

3.2 System Design

This section contains an explanation of system design for building management information system applications.

1. Context Diagram

Overview of the system globally or in general from the beginning to the end there are entities / actors associated with the system.

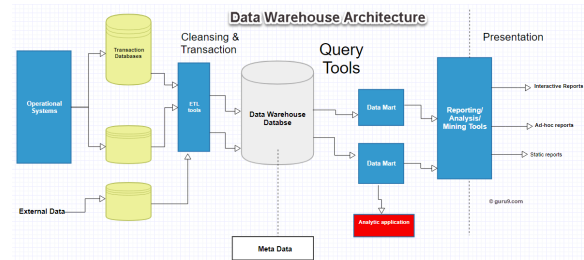


Figure 1. Context Diagram

3.3 HIPO

HIPO (Input Process Output Hierarchy) is a system development tool and system documentation technique in programs. The most important goal of HIPO is to produce correct output and meet user requirements.

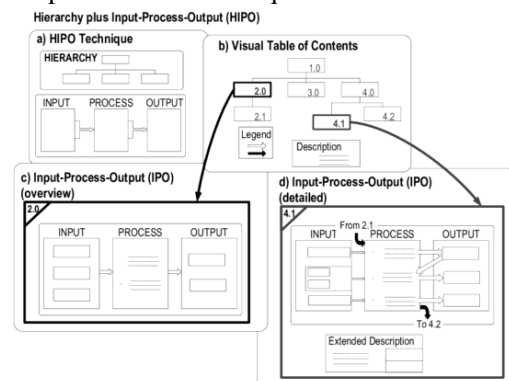


Figure 2. HIPO

3.4. DAD (Data Flow Diagram)

Data Flow Diagram (DAD) is a flow diagram that describes the flow from data to the system, DAD helps to understand the system in a logical, structured and clear way. The following is DAD level 0 for Sales SPK.[7]

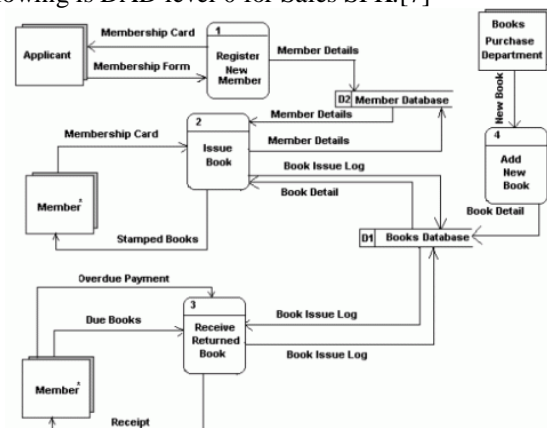


Figure 3. Data Flow Diagram

Desain Input Output

RECEIPT & PUTAWAY LIST						
Printed by: SyntexSoft@VMS Page: 1 of 1						
PO NO. : PO-21	(PROCESSED)	TRANSACTION : RECEIVING	NO. TRUCK : B 999 ZP	EXPEDITION : T001 (TRANSPORTER AAA)	TO LOCATION	CHECKS
SUPP NO. : 5001 (SUPPLIER AAA)					10.001.01	
DO NO. : SP00890001					10.002.01	
NO.	PRODUCT	QUANTITY	PACK	EXP. DATE	BATCHING	
1	PO01 - PRODUCT AAA	50	BOX	23/05/2020	BTC-0001	
2	PO01 - PRODUCT AAA	50	BOX	23/05/2020	BTC-0001	
3	PO01 - PRODUCT AAA	50	BOX	23/05/2020	BTC-0001	
4	PO01 - PRODUCT AAA	50	BOX	23/05/2020	BTC-0001	
5	PO02 - PRODUCT DDD	50	BOX	23/05/2020	BTC-0002	OVERFLOW
6	PO02 - PRODUCT BBB	50	BOX	23/05/2020	BTC-0002	OVERFLOW

3.5 System Implementation

Fill in the password to enter the KIS data system account

1. Display Icon on the Desktop

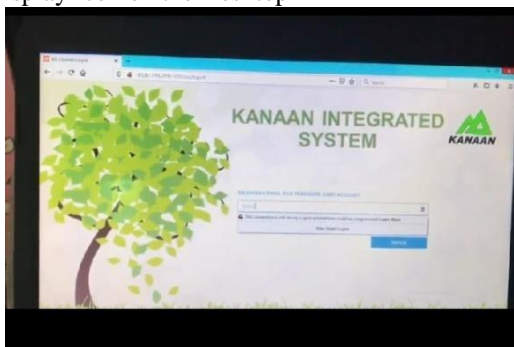


Figure 4. Login View

2. Select the menu according to data desired

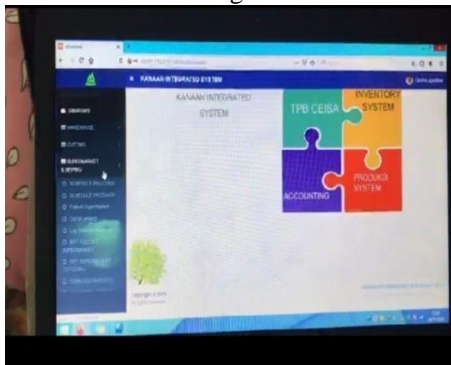


Figure 5. The main page display of the sales system

2. Functionality Testing

No	Skenario Pengujian	Test Case	Hasil yang Diharapkan	Hasil Pengujian
1	Salah mengisi username dan password		Sistem akan menolak akses sign in dengan menampilkan pesan "Usernam atau Password Salah"	
2	Tidak mengisi input pilihan jenis barang lalu klik Save		Sistem tidak akan menyimpan inputan data barang dan akan menampilkan pesan "please select an item in the list"	

Table 1. Functionality Test

3. SWOT Analysis

SWOT stands for Strengths, Weaknesses, Opportunities, and Threats. A SWOT analysis organizes your main strengths, weaknesses, opportunities and threats into an organized list usually presented in a simple grid bar. Strengths and weaknesses are internal to your company. things you can control and can change. Examples include who is on your team, your patents and intellectual property, and your location. Opportunities (opportunities) and Threats (threats) are external things that affect the business or things that happen outside your company in the larger market. You can take advantage of opportunities and protect against threats, but you cannot change them. Examples include competitors, raw material prices, and customer spending trends.

Strength (Kekuatan)	Weakness (Kelemahan)
<ol style="list-style-type: none"> 1. Menyediakan berbagai macam paket layanan internet berkecepatan tinggi dengan harga yang bervariasi serta kompetitif, namun disesuaikan juga dengan kemampuan konsumen dalam membeli. 2. Gencarnya promosi dan menjual produk sesuai dengan target penjualan. 3. Tersedia fasilitas komputer dan printer serta sarana pendukung seperti akses internet. 4. SDM yang mumpuni dalam dasar bidang komputer. 	<ol style="list-style-type: none"> 1. Masih menggunakan kertas sebagai alat transaksi. 2. Masih menginput data menggunakan Microsoft Excel. 3. Memakan waktu dalam mengumpulkan data laporan. 4. Adanya keluhan dari masing-masing Biro/ Unit kerja atas keberadaan double data yang sudah dilaporkan atau belum dilaporkan.
Opportunity (Peluang)	Threat (Ancaman)
<ol style="list-style-type: none"> 1. Mempunyai citra yang baik di masyarakat. 2. Perkembangan zaman membuat informasi yang mudah didapat. 3. Permintaan pasar semakin meningkat sesuai kebutuhan. 4. Menyediakan layanan jaringan berbasis fiber optic merupakan media penransfer data paling efektif, memiliki tingkat loss data dan gangguan yang rendah, dan bandwidth yang tinggi. 	<ol style="list-style-type: none"> 1. Teknologi semakin berkembang maka semakin banyak pula pesaing baru yang muncul. 2. Pemasangan yang agak sulit terutama di perumahan yang padat penduduk. 3. Perizinan pemasangan yang melibatkan unit masyarakat tertentu. 4. Penyalahgunaan perintah kerja oleh pelaksana.

Figure 6. SWOT Analysis

IV. CONCLUSION

At the end of this pentup is made in the form of conclusions and suggestions, namely as follows :

Conclusion

After analyzing the Data Warehouse System at PT Kanaan Global Indonesia, the Data Warehouse can be used to support analysis activities as a basis for decision making by. Information from the data warehouse system application at PT Kanaan Global Indonesia is knowledge for company executives that can be developed to determine strategies in the company in addition to determining purchasing policies and controlling inventory.

Suggestions

1. Implementing a data warehouse system requires supporting equipment, including software, hardware, and human resources so that system performance can run well.
2. Training is needed to make the program easier to understand.
3. It is necessary to periodically evaluate the system to anticipate errors and then make improvements according to the development of the company.

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