

# Design Domestic Products Application Model using iDempiere for Local Brand Supporter

Emny Harna Yossy\*

Computer Science

Department, BINUS Online

Learning

Bina Nusantara University

Jakarta, Indonesia 11480

Research Interest Group

Education and Technology,

Bina Nusantara University

[emny.yossy@binus.ac.id](mailto:emny.yossy@binus.ac.id)

Ardo Legawa

Computer Science

Department, BINUS Online

Learning

Bina Nusantara University

Jakarta, Indonesia 11480

[ardo.legawa@binus.ac.id](mailto:ardo.legawa@binus.ac.id)

Farhan Mubarak

Computer Science

Department, BINUS Online

Learning

Bina Nusantara University

Jakarta, Indonesia 11480

[farhan.mubarak@binus.ac.id](mailto:farhan.mubarak@binus.ac.id)

Abram Taurussano Franxal

Computer Science

Department, BINUS Online

Learning

Bina Nusantara University

Jakarta, Indonesia 11480

[abram.franxal@binus.ac.id](mailto:abram.franxal@binus.ac.id)

Hansen Samuel Hutabarat

Computer Science

Department, BINUS Online

Learning

Bina Nusantara University

Jakarta, Indonesia 11480

[hansen.hutabarat@binus.ac.id](mailto:hansen.hutabarat@binus.ac.id)

***Abstract***—With the massive usage of internet nowadays, online shopping is become a new trend and commonly used by the society. Foreign products are mostly rule these online segments, and with the lack of exposure about our local brand product makes people do not know how good they really are. For that reason, it may be helpful if we have an application which can be a media for the local product brand to shine their business. The application is a java based open source ERP software package which provides three core areas of functionality, such as Enterprise resource planning, Customer relationship management and Supply chain management. The purpose of this research was to build a platform for a local brand product owner to sell their product and being prioritized. Results from this research is an ERP application that can be used by anyone, especially for those who have a local business and want to expand their market. The conclusion of this research is the ERP application that can be used as a media to publish their local product and being prioritized.

***Keywords***—*shopping, product, online, technology, open-source*

## I. INTRODUCTION

Today, companies are facing a more tortuous and competitive environment than ever before as success is no longer a matter of analysing only the firm individually, but rather the chain of supplying and delivering organizations along the entire supply chain [1]. Subsequently, companies are currently focusing on supply chain strategies to boost productivity, streamline internal operations, reduce the manufacturing cost, and improve product quality. In theory, supply chain management (SCM) is the process to control the information flow, goods and services amongst and within the firms while also developing strong ties between suppliers and customers, thus providing a better integration of production and distribution systems [2]. This way, supply chain management is an effective approach to sustain high firm performance and thus to achieve a competitive advantage.

Based on this problem, there is an idea to create an open-source application Selection for Domestic Product (iDempiere). Selection for Domestic Product (iDempiere) is a mid-tier open source Enterprise Resource Planning (ERP) software[3]. It also features a Customer Relationship Management (CRM) and Supply Chain Management (SCM) system [4]. It is licensed under GPL version 2 and it's free to download, develop and put into production. It is written in Java and runs on a PostgreSQL database.

It is supported by a Jetty server and OSGI (Open Service Gateway Initiative) plugin architecture that gives it a more logic functionality compared to other open source ERPs [5]. OSGI architecture reduces complexity by providing a modular architecture for today's large scale distributed systems and small embedded applications. This significantly reduces development, operational, and maintenance costs.

Selection for Domestic Product (iDempiere) source code is hosted at bitbucket using a mercurial repository which can be downloaded or cloned by users. iDempiere supports third-party components in an application and is one of the most robust open source options available. It is compatible with major Operating Systems including Windows, Linux, Mac OS, and Solaris. It's also has several integration points that integrates with other systems. The built in integration points are; configurable and flexible CSV-import, Web services, JMS messaging. iDempiere is a complete ERP offering everything from invoicing to Point of Sale (POS) integration to warehouse management to forecasting [6].

## II. LITERATURE REVIEW

### A. *ERP Application*

ERP application alludes to a sort of program that organizations utilize to oversee day-to-day trade exercises such as bookkeeping, acquirement, extend administration, hazard administration and compliance, and supply chain operations. A total ERP suite too incorporates venture execution administration, program that makes a difference arrange, budget, anticipate, and report on an organization's money related results. ERP frameworks tie together a large number of trade forms and empower the stream of information between them. By collecting an organization's shared value-based information from numerous sources, ERP frameworks dispense with information duplication and give information judgment with a single source of truth. Today, ERP frameworks are basic for overseeing thousands of businesses of all sizes and in all businesses. To these companies, ERP is as irreplaceable as the power that keeps the lights on [7].

### B. *iDempiere*

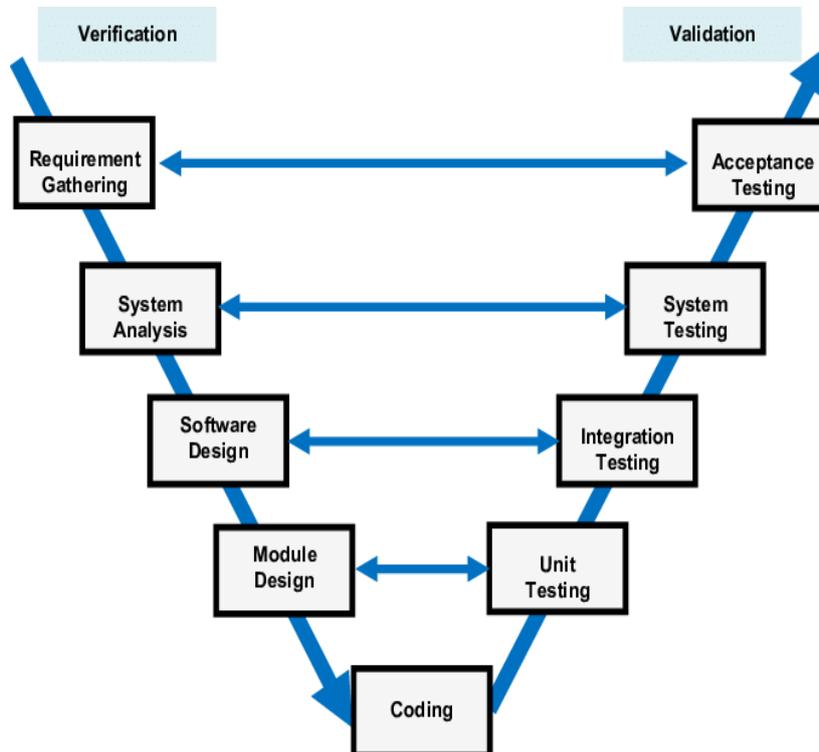
iDempiere Business Suite ERP/CRM/SCM done the community way. Center is on the Community that incorporates Subject Matter Masters, Implementors and End-Users. iDempiere is based on unique Compire/Adempiere also a unused engineering to utilize state-of-the-art innovations like OSGi, wharf, zk, maven. Features: enterprise resource planning, customer relationship management, supply chain management. Supported platforms: Linux, Windows, System Requirements, Java OpenJDK 11 or 12, PostgreSQL Database  $\geq 9.6$ , or Oracle Database  $\geq 11G$  [8].

### C. *System Development Life Cycle*

An effective System Development Life Cycle (SDLC) should result in a tall quality framework that meets client desires, comes to completion inside time and taken a toll assessments, and works viably and proficiently within the current and arranged Data Innovation framework [9]. System Development Life Cycle (SDLC) is a conceptual demonstrate which incorporates approaches and methods for creating or changing frameworks all through their life cycles. SDLC is utilized by investigators to create an data framework. SDLC incorporates the taking after exercises: requirements, design, implementation, testing, deployment, operations, maintenance.

### III. RESEARCH METHODS

In this research we using the system development method is system development life cycle, using V-Model [10]. The V-Model is an extension of the waterfall model and is based on the association of a testing phase for each corresponding development stage. This means that for every single phase in the development cycle, there is a directly associated testing phase. This is a highly-disciplined model and the next phase starts only after completion of the previous phase [11].



**Figure 3.1 V-Model.**

Following is an explanation of each stage along with the testing phase:

#### A. Requirement Analysis & Acceptance Testing

The Requirement Analysis stage is the same as in the waterfall model. Output from this stage is the documentation of user needs. Acceptance Testing is a step will examine whether the documentation produced is acceptable to users or not.

#### B. System Design & System Testing

In this stage the system analyst starts designing the system with reference to documentation user needs that have been made in the previous stage. The output of this stage is software specifications that include general system organization, data structures, and others. Besides this step also produces an example display window and also technical documentation others such as Entity Diagrams and Data Dictionaries.

### *C. Architecture Design & Integration Testing*

Often also called as High Level Design. The basis of the selection of architecture to be used based on several things such as: reuse of each module, dependency tables in the database, relationships between interfaces, and details of the technology used.

### *D. Module Design & Unit Testing*

Often also referred to as Low-Level Design. The design is broken down into a smaller type modules. Each module is given an explanation that is sufficient to facilitate the programmer to do the coding. This stage produces program specifications such as function and logic of each module, error message, input-output process for each module, and others.

### *E. Coding*

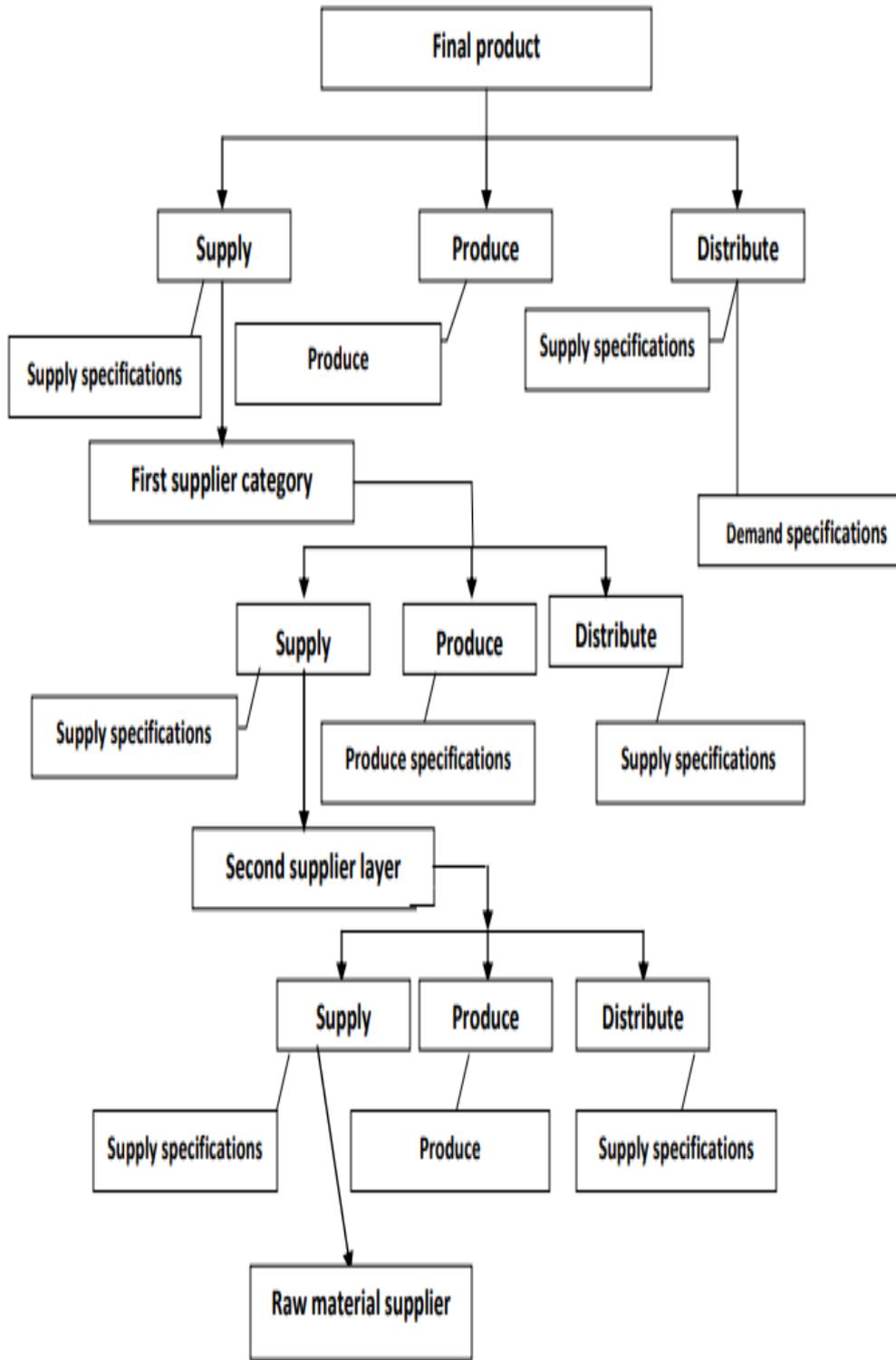
In this stage programming is done for each module that has been formed

#### IV. RESULT AND DISCUSSION

The purpose of this research is to implement applications that work in harmony with e-Commerce, in helping local products compete globally. So that it will improve the quality of local production company in the future.

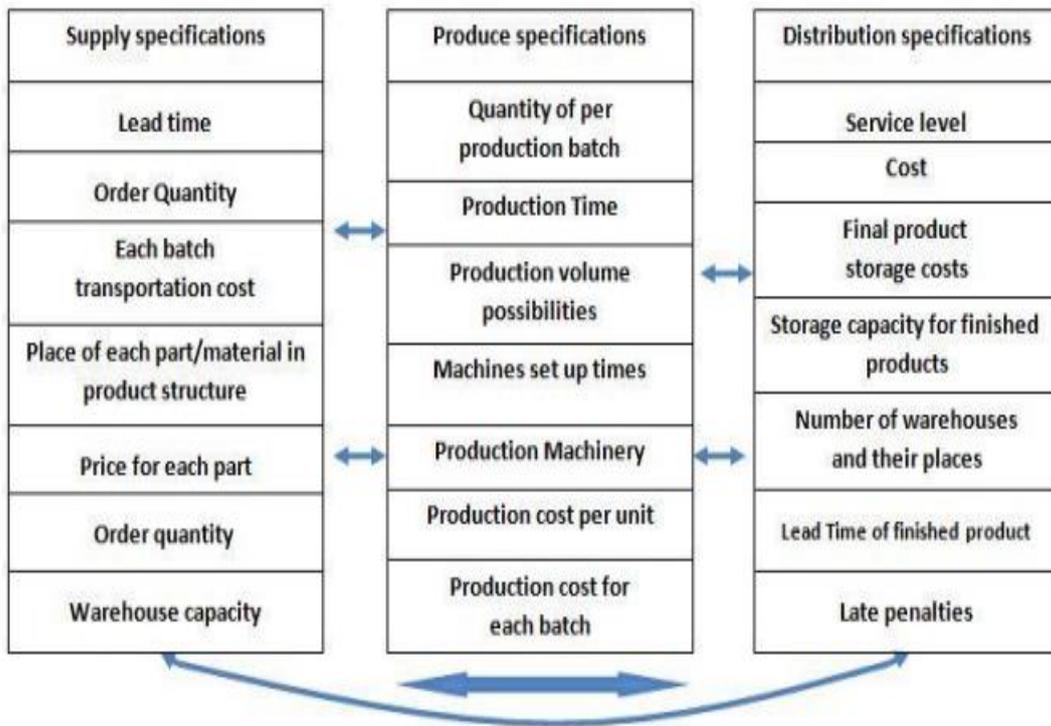
##### A. Analysis Result

The implementation result of this *Selection for Domestic Products(iDempiere) Application for Local Brand Supporter*, show that the supply chain is become the core of this whole business activities in the application. Mostly because the application use the ERP base system so that the information structure fulfills the informational needs of the supply chain and deals with solutions to the problems that the supply chain decision-making model may entail. The supply chain involves an information structure in which each member of the chain holds three major processes of supply, production and distribution. These three major corporate processes are integrated by three major logistic modules of ERP system. These characteristics data, (in Picture 2) integrate and managed by different process of modules of material management (MM), production planning (PP) and sales and distribution (SD).



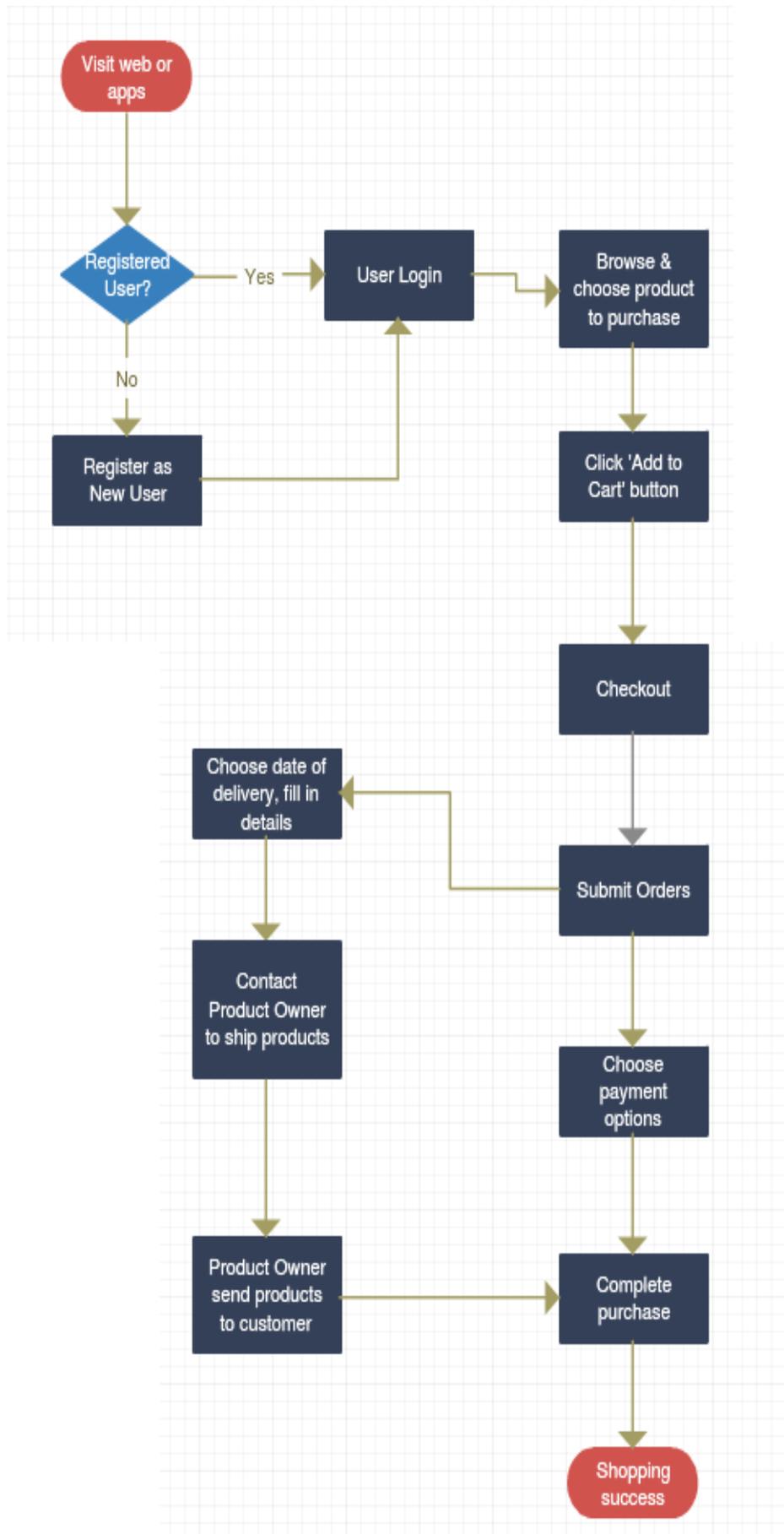
**Figure 4.1. Supply chain data structures**

Each process has so many specifications but major characteristics for profile of each process from the perspective of the supply chain are shown above.



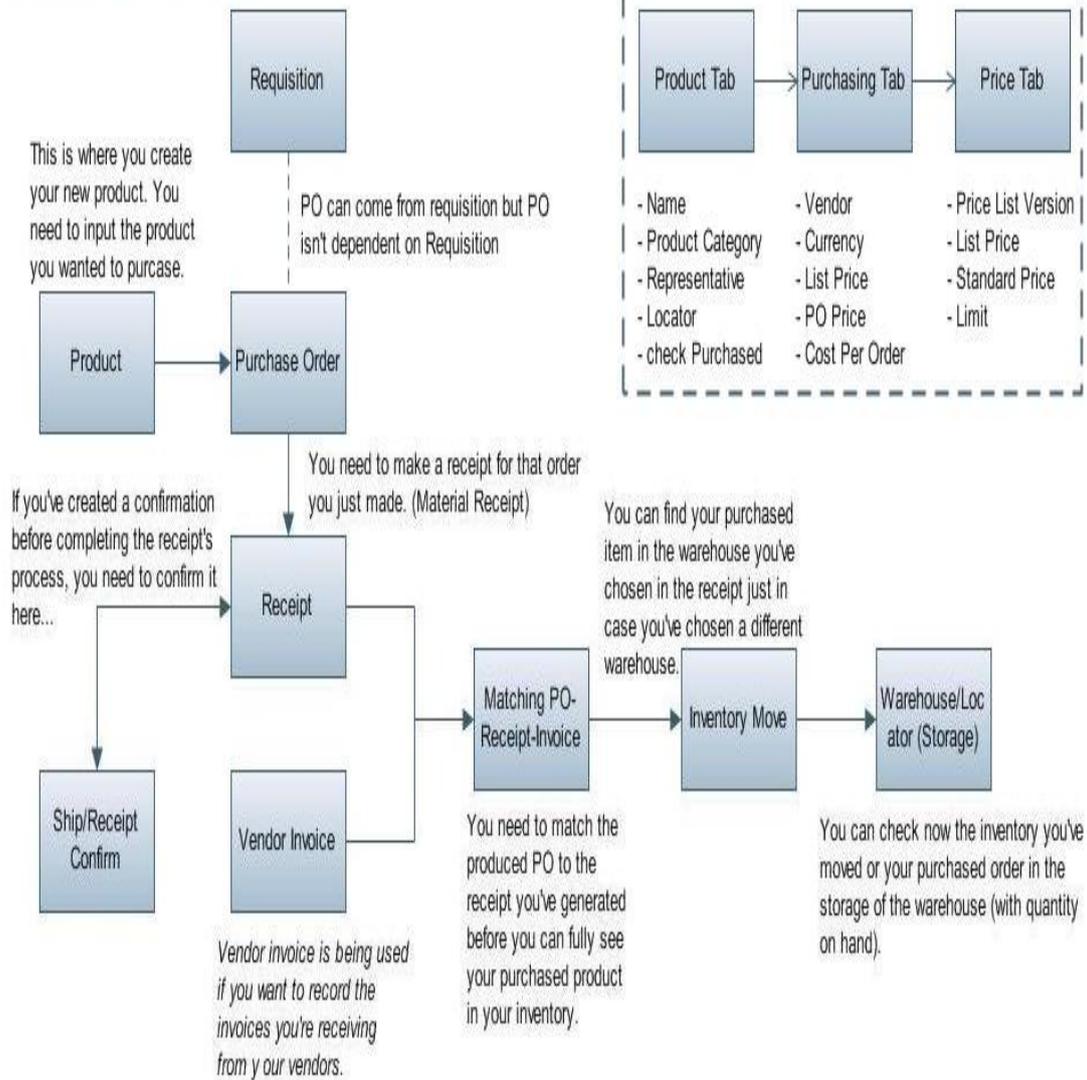
**Figure 4.2. Characteristics of information supply chain structure**

As a matter of fact, there are few different roles in this application that can be used to login according to the needs of the user. And by using this system, it will make it easier to change the performance of program and system flow.

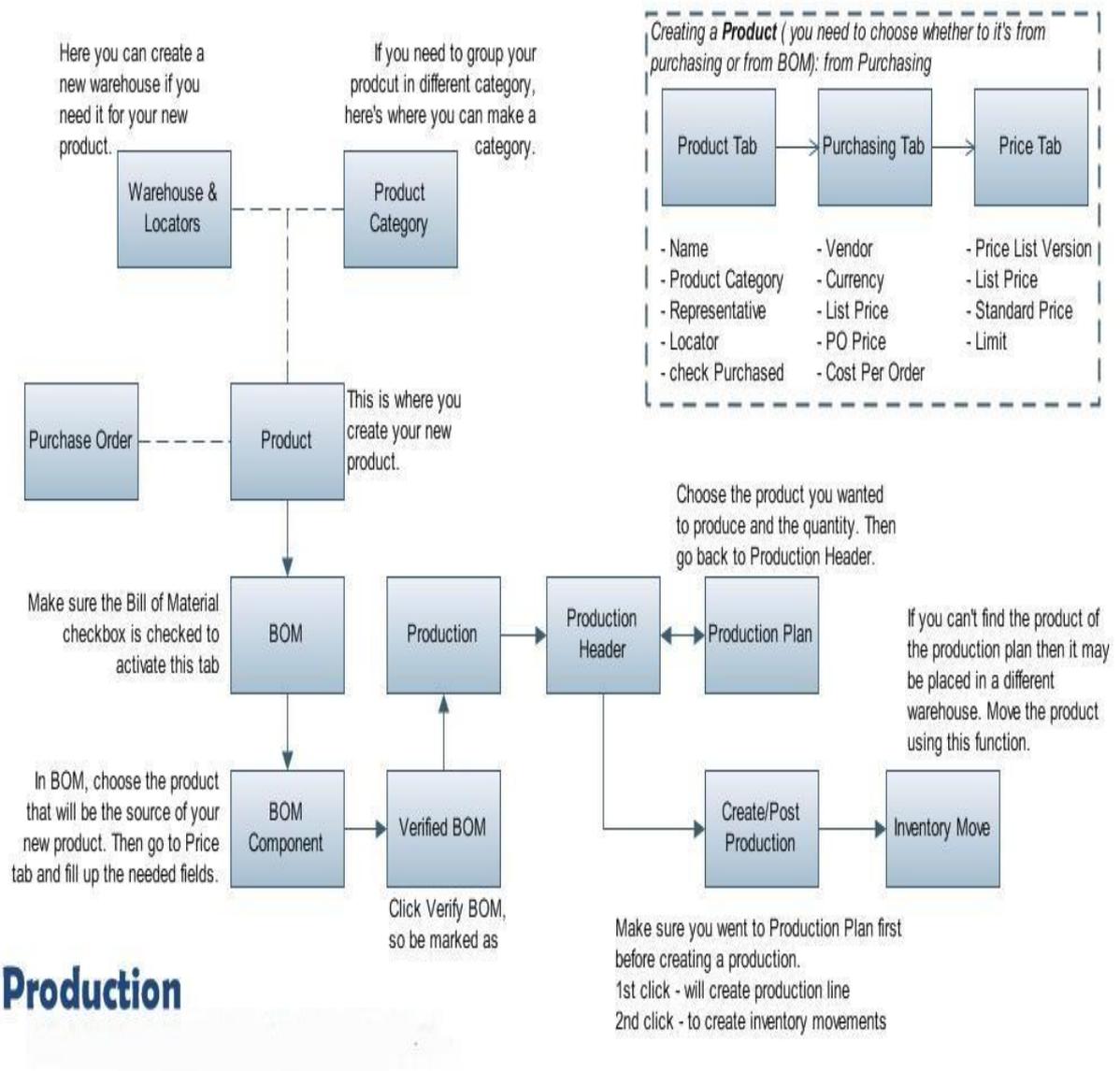


**Figure 4.3. Customer flow process**

# Purchase Order



**Figure 4.4 Order Flow Process.**



**Figure 4.5. Production flow process.**

### B. Application

The main menu that need a highlight in this application is the Home Dashboard where user can find a notification about everything, and the Menu to Select Display where user can navigate to different kinds of need that they wanted to.

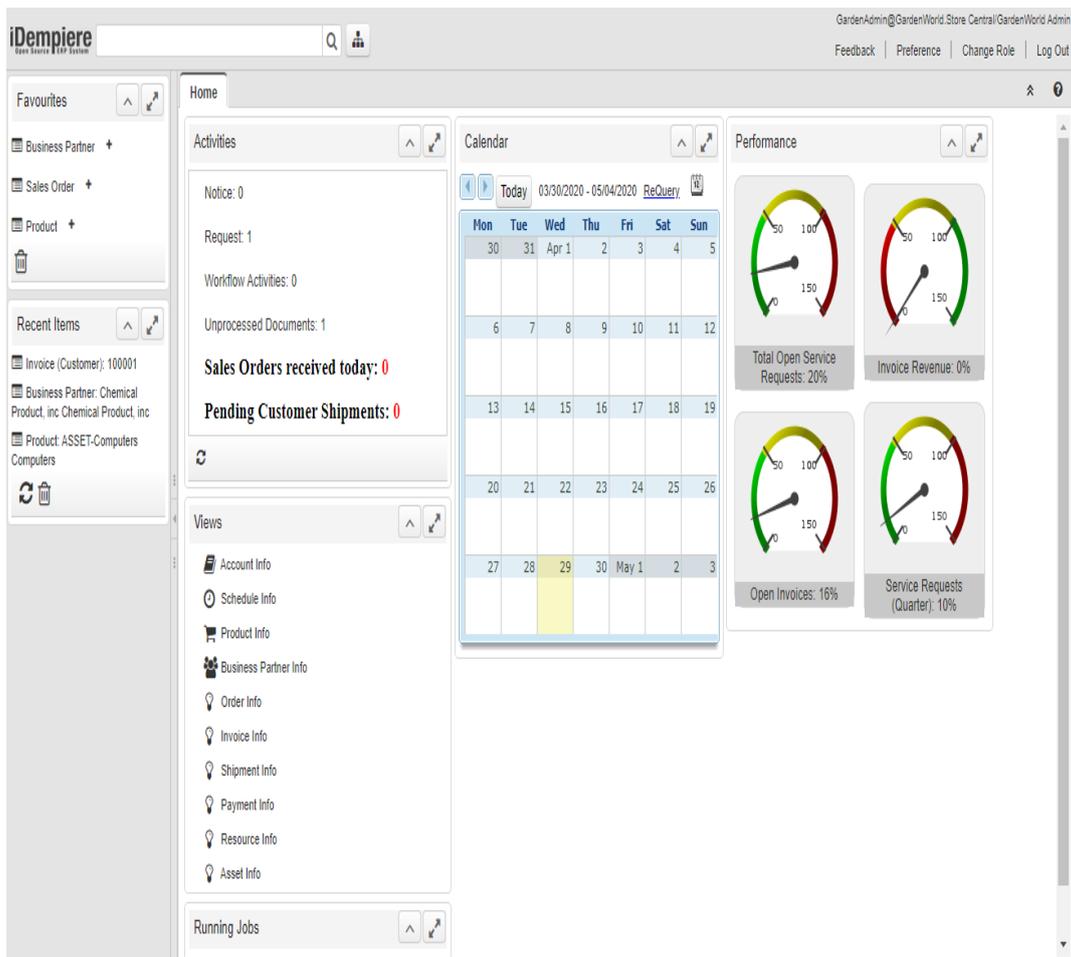


Figure 4.6. Home Dashboard.

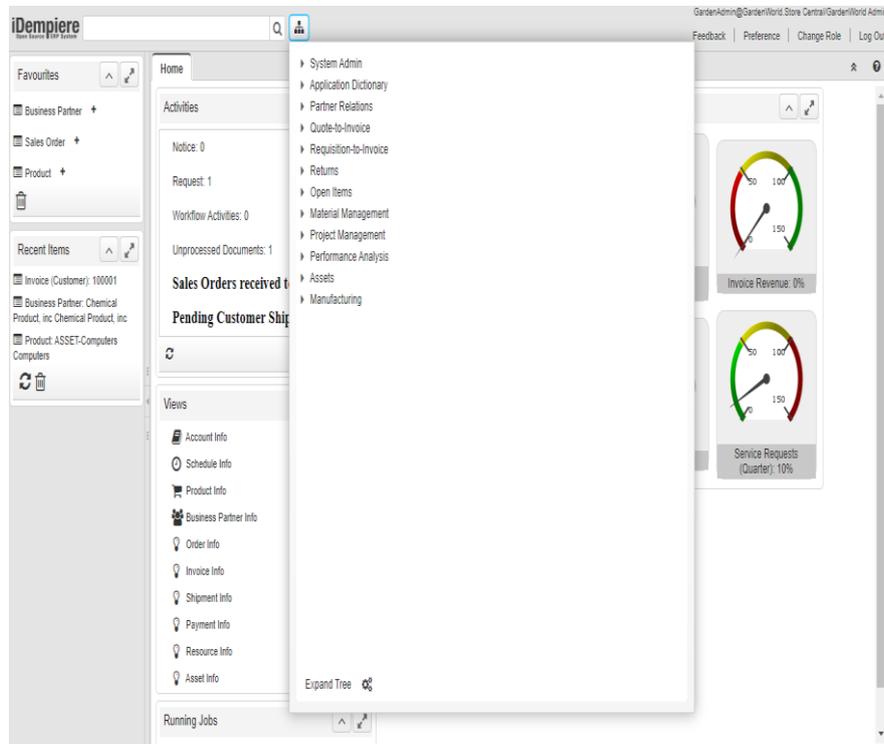


Figure 4.7. Menu to Select Display.

## V. CONCLUSION

From the results of these studies then can be concluded as follows: the application created can help local product companies to extend their business, the application created can be used to publish local products that the owner wants to sell, with this system, it will provide good distribution for local products in the global scale market.

## ACKNOWLEDGEMENT

The researcher would like to thank the Computer Science Department, BINUS Online Learning, Bina Nusantara University that has provided the researcher's direction for conducting this research.

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