The Development of Digital Retail Store Management Model For Motorcycle Spare Part Distribution Using ODOO Framework

by

Pollatat Choypeng
Graduate Student, Master of Science, Information Technology
The Faculty of Information Technology, Sripatum University

Sooksawaddee Nattawuttisit
Master of Science Program, Information Technology
The Faculty of Information Technology, Sripatum University

Abstract

This research aimed to improve the management of retail stores for motorcycle parts distributor for the agent for traditional vendors into digital. Research tools were Odoo software application, used as a template in order to support and promoted a market overview and trend analysis. Demand and supply needed of the customers as well as conduct planning activities within the shop. The sample consisted of republics general information marketing information data warehouse and collected from 2,000 entries, between 2014 and 2018. The results of this research found that scores the assessment by experts, with the average and standard deviation in level equal to 4.15 and 0.21 respectively. Findings was that the insight information could support sale planning and vendor forecast better. In addition to create multi-dimension reports with inventory analysis, it could support executives to decide business activities and investment policy in various areas of improvement for distribution of motorcycle parts effectively

Keyword Management, Retail stores, Digital, Odoo, Motorcycle parts

1. Introduction

Nowadays, the business operation is highly competitive. The business transformation into digital platforms is the key to their business advantage over market competitors. In terms of digital marketing, information is all about customer needs, and it is an important factor as company concerns. Data will be used as a part of the model of products and services development to increase customer satisfaction, salesforce

1 Corresponding Author: Graduate Student, Master of Science, Information Technology of Sripatum University.
Contact Number: +6690-964-9186
Email: pollatat_choypeng@hotmail.com
management. Finally, it will lead to high revenue generation from the goods or services quality.

Generally, the problem of the retail business is due to the demand for various types of goods and the price of goods often changes. This problem should be analyzed in depth to develop a strategy. To develop the strategy and tactic in marketing plans, it can manage the sales volume of goods and services without the effect of changing the selling price. (Patcharaporn Arthorn, 2017)

Moreover, the development of a modern retailer management system can effectively change the performance of traditional workers in the retail business. Using information technology, retailers have the ability to manage this market share effectively, leading to a leadership position and sustainability. (Panchet Na Lampoon & Nathapatha Surapongraktrakul, 2558).

From review literature, Researchers found that most digital retail management systems currently has been developed in the cloud platform. It consists of 1) Warehouse Management System 2) Sales & Marketing Management System 3) Intelligent Analysis and Reporting System that can create a view. 4) Point Of Sales (POS) and 5) Forecasting and Decision Support System as shown in Figure 1.

![Figure 1 The architecture of ODOO prototype system](image)

Therefore, information systems used in retail resource planning play an important role in determining sales prices and discounts. Demand analysis is used in pricing. It correlates with sales volume of goods and services to maximize profits
(Santoso, LW, 2017) by mathematical or statistical calculations by connecting to a database such as what-if analysis. Goal-Seeking is used to solve a variety of data problems, such as large, structured, and unstructured data. (P. Kotler ad G. Armstrong., 2012).

However, the change in the structure of the retail store management process by digital marketing information system has a high cost and investment cost. To solve these problems, the researcher studied and guided the development of a digital retail store management model to distribute motorcycle parts with the ODOO framework. This is an open source license to transform the business process of motorcycle parts into digital platform. (Olson, D. L., Johansson, B., & De Carvalho, R. A., 2015)

**The Objectives**
To develop and evaluate the intelligent business system for product planning for motorcycle spare part retailers.

<table>
<thead>
<tr>
<th>Input</th>
<th>Process</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The Conceptual framework of a model development</td>
<td>Develop and Evaluate a retail management model for the distribution of the original distributor's motorcycle parts to digital.</td>
<td>1. The model of retail management system for the distribution of the original distributor's motorcycle parts to digital.</td>
</tr>
<tr>
<td>2. Data collection from customer and retail planning during year 2014-2018</td>
<td></td>
<td>2. The evaluation results of model development</td>
</tr>
</tbody>
</table>

**Figure 2** The Framework of research development

2. **The Research Methodology**
The researcher collected data from the original system in the case of retail stores, and use the Odoo application as a research tool. To integrate the database system compliance to the business standard platform. Additionally, it also allows users to access information easily as well as supporting for decision-making in planning and improving the quality of retail management process for executives and distributors. (Kitti Pakdevattanakul, 2007)

The development and design of the work process is divided into two parts: (1) the data warehouse and (2) the business process to develop the retail business system to digitize efficiently and effectively (Sarawut Yaowarat, 2007).

1. The design and development of the data warehouse is designed using the Star Schema model and the Cube Dimension model, as shown in Figure 3.
Figure 3 The Design of Data Model in Star Schema

In Figure 3, the analysis and design of the data model use star schema, supporting the multi dimension analysis. The outer part is surrounded by a fact table which contains of the customer, Supplier view, product description and retail management history (Kramer, F., Rehn, T., Schneider, M., & Turowski, K., 2016).


Figure 4 The Digital retail business process model with Odoo framework
3. The Findings
This Experimental research aims to develop a modern digital retail management model for the motorcycle dealer parts. The research was conducted with ODOO commerce application as the research tools. It was used to develop prototype information systems to support and promote market trends, including retail planning activities within the shop. The research findings have been discovered as following below.

1. According to test results on the rack counting process, the program can encrypt the data from the data file and record it as a metadata (.txt file) to the database correctly. Later, users can view the list of classified data by type, such as sales reports. Reported products found and items dropped from the shelves.

2. According to product test results on the shelves, the users can search by barcode code specified. The bar code reader is used to look up for items from a file on the shelf. When the data is found the item, the system will generate the reports which display the results containing the barcode, product name, and description, including 12-digit barcode numbers to easily track results such as product search results, catalogs, shelves, or items recently imported into the shelves with RFID tag readers.

3. According to the test results of the product validation process. It found that the results of the comparison of the accuracy of the input data. The information contained on the rack is validated. By checking the calculation model of the number of products available and the number of products sold. Compare with real products on shelves. This makes data analysis more accurate. Additionally, it is useful to plan inventory for a distributor using to make promotions, cash discounts or reorders planning, including Reduce the number of items to order the next time.

![Figure 5 The Motorcycle Parts Analysis Report in Warehouse](image)

The results of this test have been evaluated by experts. The average score and standard deviation were 4.15 and 0.21, respectively, as shown in Table 1.
## Table 1 The Quality evaluation results by experts.

<table>
<thead>
<tr>
<th>The Evaluation Criteria</th>
<th>μ</th>
<th>S.D.</th>
<th>Satisfaction Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The objective of the retailer for supply motorcycle spare part management.</td>
<td>4.17</td>
<td>0.21</td>
<td>High</td>
</tr>
<tr>
<td>2. The accuracy of the system work.</td>
<td>4.21</td>
<td>0.21</td>
<td>High</td>
</tr>
<tr>
<td>3. The system design UX/UI</td>
<td>4.03</td>
<td>0.21</td>
<td>High</td>
</tr>
<tr>
<td>Total</td>
<td>4.15</td>
<td>0.21</td>
<td>High</td>
</tr>
</tbody>
</table>

### 4. Conclusion

This research has resulted in the objective of development for a modern retail management model for the distributor's motorcycle parts. The knowledge gained from this research can be applied as a digital commerce platform to support overall market trends, and demand for supplies and customers, including planning activities in the store efficiently. As a result of the transition to digital format, retail management performance for distributors is improved as reporting in dimension analysis such as warehouse relationships, sales, cost dashboards.

### References


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