

E-MARKETPLACE SYSTEM TO ELEVATE PRODUCT DISTRIBUTION OF COMMUNITY ENTERPRISE ENTREPRENEURS IN UDON THANI PROVINCE

Natcha Wattanaprapa, Thanakorn Uiphanich and Phachaya Chaiwchan
Suan Sunandha Rajabhat University, Bangkok, Thailand

ABSTRACT

At present, trading or exchanging goods and services has evolved significantly due to the rapidly changing technology and consumer behavior that has evolved alongside changes in technology leading to the rise of e-Commerce or online trade. It also helps reduce costs. Customers can access the store 24 hours a day from all over the world with only having a mobile device that can connect to the Internet. When visiting the focus group of community enterprise entrepreneurs in Udon Thani province, it was found that some community enterprises were not yet ready to use the e-commerce system for some reasons. In addition, there is a lack of knowledge in using multimedia technology to facilitate the creation of product presentations. This research design aims to develop the e-marketplace of community enterprise entrepreneurs in Udon Thani Province. Qualitative data were collected by the researcher conducting an in-depth interview. The majority of the respondents was 11 groups of community enterprise entrepreneurs. 5 sample groups are selected by the use of nonprobability Sampling namely Purposive Sampling technique. These sample group include the Phon Bok Community Cooperative Career Group, Enzyme Fermented Water Agricultural Community Enterprise Group, fermented fish Community Enterprise Group, Thor Paa Ton Khram Community Enterprise Group and a group of community enterprises of painted pottery with the readiness of e-commerce system.

The findings on risk analysis revealed that the strengths of community enterprise entrepreneurs were their business potential for production, transportation and eager to use technology. Whereas weaknesses are their lack of knowledge in online marketing, product image presentation and lack of e-commerce system to serve the needs of entrepreneurs, lack of business opportunity to receive support, development and training from external agencies, the disruptions from the Covid-19 situation and lack of appropriate packaging for transportation.

The findings of the developed e-commerce system model development that through evaluation criteria from 8 experts suggested that the overall efficiency was very good, with a mean of 4.60 and a standard deviation of 0.70. While assessment results from a group of 70 system users indicated that their overall performance was excellent with average of 4.45 and the standard deviation of 0.55.

Keywords: *E-marketplace, Community Enterprise Entrepreneurs, Udon Thani*

INTRODUCTION

Udon Thani Province is a city center of trade and investment, where the main source of income comes from retail. Udon Thani Province has developed and encouraged small entrepreneurs in self-development and career promotion, especially Startups, or innovations adoption to help promote entrepreneurs to achieve economic strength. especially the promotion of community tourism in the aspect of important tourist attraction of the province. It also involves new era trading of Udon Thani Province and goal setting in terms of driving the economy to be a smart province, which is a Smart City, with an emphasis on e-Commerce (Strategic and Information Work Group for Provincial Development, 2018). This is in line with the development guidelines of National Economic and Social Development Plan No. 12 (B.E. 2560-2021) focusing on encouraging the use of digital technology to create business value adding. By promoting the development of entrepreneurs to transform their business into a digital system by creating a platform, digital business e-commerce in the agricultural sector, the manufacturing sector and the business sector, creating online stores and online product standards. Furthermore, it involves promoting the business of new digital entrepreneurs (Start up), small and medium entrepreneurs, and community enterprises and developing a standard system for product and service codes of Thailand to be reliable, increase competitiveness and supports e-commerce transactions, e-Supply Chain and e-Payment management (National Economic and Social Development Plan No. 12, 2016)

Presently, trading or exchanging goods and services has developed remarkably in line with fast-paced developments in technology and consumer behavior that also shifts in line with the evolution of technology

International Journal of Applied Engineering & Technology

causing the creation of a form of e-commerce or online trading. It also leads to cost saving. Customers are able to access the store 24 hours a day from all over the world by only using a mobile device that can connect to the Internet and (Anuchida Chinsiraprapa & Thanin Silpcharu, 2020) have proposed several factors that support successful strategic management, namely Leadership, Network Planning, Teamwork and Information Technology, which are the key driving factors that can help entrepreneurs to operate and manage the organization effectively.

From the aforementioned study, the researcher perceived an increase in business opportunities for entrepreneurs in Udon Thani province. Therefore, there is an idea or concept to develop an e-marketplace system to increase the accessibility of products from around the world by encouraging entrepreneurs to have equipment to support business management for entrepreneurs to become high potential entrepreneurs and elevate the group of existing community enterprise entrepreneurs to become smart entrepreneurs.

OBJECTIVES

To develop an e-marketplace system for community enterprise entrepreneurs in Udon Thani Province

RELATED LITERATURE

Social networks present great marketing opportunity to boost business sale and expand accessibility to business. Social Media Strategy is a vital part of e-Commerce including percentage of promotional campaigns that take place across social media platforms. Numerous companies do business through facebook and other online platforms. Only big-sized companies can be profitable on social media by having to set specific goals. Currently, companies use social media to expand their social network marketing. This help boost business revenue and cut costs in communicating with customers which social networking sites allow customers to chat and express how they feel, they can click like, and can promote the shop by click share (Dewobroto et al., 2021).

The research on the development of e-commerce channel among community enterprises network (Rataphol Sangkhasuk et al., 2017) aims to study the e-commerce distribution and purchase of community enterprise products to develop marketing strategy, to design product distribution system on e-commerce channels and to compare the efficiency of distribution channels between the custom and ready-made ecommerce websites. Drawing upon the sample size of 150 community enterprise product entrepreneurs and 50 community enterprise product consumers, the findings were analyzed in order to develop a marketing strategy and design and develop website www.otopta.com. The findings of the research showed that community enterprise products that consumers have bought or are interested in purchasing through e-commerce are food, clothing & accessories, household items, non- food herbs and beverages respectively. The findings of marketing strategy analysis were 1) Best price guarantee strategy 2) Product packaging strategy. 3) Gift Baskets Strategy 4) Product storytelling strategy 5) Online Distribution Channels Strategy to reach out to potential customers. The findings of the trial selling through the custom website with the highest gross profit were food, beverages, non-food herbs. Household items & decoration and clothing & accessories. By comparing the performance with the Facebook channel, customers can reach Facebook more than the custom websites. It was also found that barriers for purchasing decisions were caused by the experiences of customers who have purchased through e-commerce systems and experienced with fraud, getting the product that was not what they want.

The research on perception on service quality: purchase intention on e-commerce customers (Chatchai Inthasang et al., 2019) is aimed to study customer service quality perceptions influencing product purchase intention on e-commerce customers. It was found that service quality influenced purchase intention of e-commerce products. The finding of this research will help deepen understanding consumer behavior towards product purchase intentions on e-commerce products and entrepreneurs can apply to meet the real needs of consumers in the future. The research is on problems and solutions of OTOP products based on Buddhist methods in Udon Thani Province (Thongkaem & Phaengsoi, 2019). The purposes of this research were to study the knowledge and history of OTOP products in Udon Thani Province, to study current conditions and problems of OTOP products in Udon Thani province, and to set guidelines for developing OTOP products based on Buddhist methods to promote

community economy in Udon Thani province respectively. The finding of the research showed that the production of OTOP products in Udon Thani province was related to the way of life of the villagers and the way of life of the community. It is a product created from local wisdom derived from culture, tradition and way of life. OTOP products usually are produced during spare time when community people have completed farming. It is the production of household products either for their own use or to be exchanged, bartered or sold at production sites, communities, and places set by the government. Current conditions and problems of OTOP products in Udon Thani province were most sales of OTOP products being concentrated in some business groups or some communities, such as VT Naemnueng shop, Nakha fabric shop, and some important tourist attractions of the province. Hence, income is not actually distributed to other communities in the province. As a result, entrepreneurs cannot survive to do business by themselves according to the principles of the One Tambon One Product (OTOP) project. Based upon data collection, analysis of problems and synthesis approaches to solve the problems in this research, the findings suggested that guidelines for solving problems and developing OTOP products according to Buddhist methods to promote and develop community economies in Udon Thani province should have guidelines for implementation as the following. 1) Create standards in the processes and procedures of product production and quality control of production to meet the same standards or create a distinctive identity of products for example fabrics should be of the same width and length or wine production should taste the same in each production. 2) Create and develop to promote the new generation of OTOP entrepreneurs to create sustainability for OTOP entrepreneurs 3) Manage raw material starting from site preparation, planting, maintenance in order to reduce dependency on raw materials outside the community. This can reduce the price increase of middlemen as to help the group to have raw materials for continuous production and quality.

METHODOLOGY

1. The population and the sample group were 11 group of community enterprise entrepreneurs, Udon Thani Province that participated in the project which 5 purposive sample groups were selected. These sample group include the Phon Bok Community Cooperative Career Group, Enzyme Fermented Water Agricultural Community Enterprise Group, fermented fish Community Enterprise Group, Thor Paa Ton Khram Community Enterprise Group and a group of community enterprises of painted pottery.

2. The tools used in the research were the tools used for system development, which were PHP language and MySQL databases, and the tools carried out for data collection were the satisfaction assessment form

3. Data Collection, the researcher implemented the following:

3.1 Study the physical infrastructure of the areas, product information, products of community enterprises in the areas by collecting field data with the focus group technique.

3.2 Collect data by in-depth interview of 11 sample group of community enterprise entrepreneurs, Udon Thani Province.

3.3 Analyze the data collected from the in-depth interview with the use of SWOT as a guideline for further development of the system.

3.4 Analyze the data collected from the interview to create a risk analysis plan consisting of 1. Risk identification 2. Risk assessment 3. Risk level analysis and finally using the findings of the risk analysis as a guideline for the development of the e-commerce marketplace system to enhance the product distribution of community enterprise entrepreneurs, Udon Thani Province.

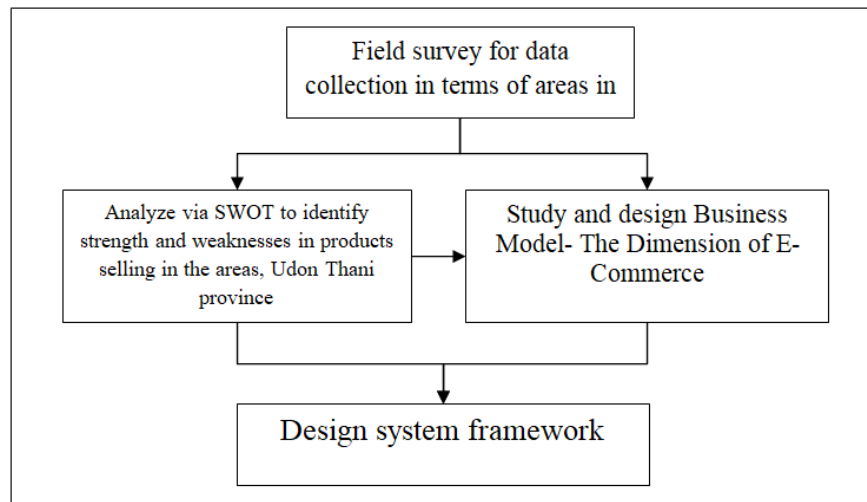


Figure 1 Conceptual framework for studying physical infrastructure of the areas and product information, products of community enterprises in Udon Thani province

4. Design of an e-marketplace system to elevate product distribution for community enterprise entrepreneurs in Udon Thani Province

4.1 System Flow Diagram is a diagram showing the work of developing an e-marketplace system to elevate product distribution of community enterprise entrepreneurs in Udon Thani Province, system users and administrators

As shown in Figure 2.

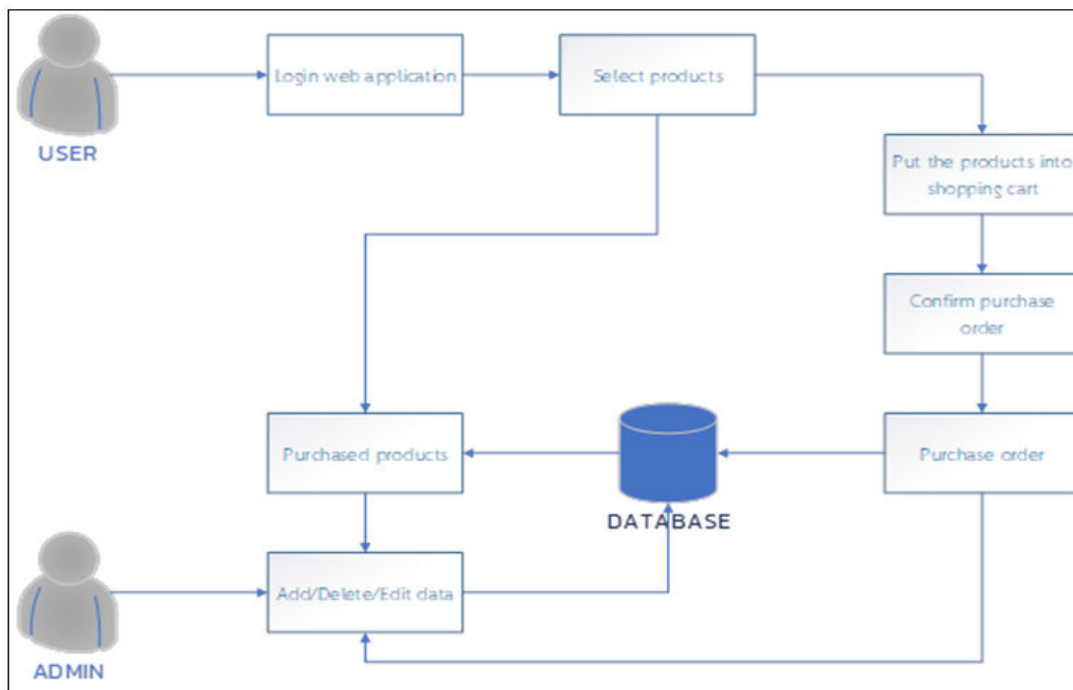


Figure 2 System Flow Diagram is a diagram showing the process of e-marketplace system development to elevate product distribution of community enterprise entrepreneurs in Udon Thani Province

4.2 The static relationship diagram of the system (Class Diagram) is a diagram used to show the classes and their relations (Relation) between those classes as shown in Figure 3.

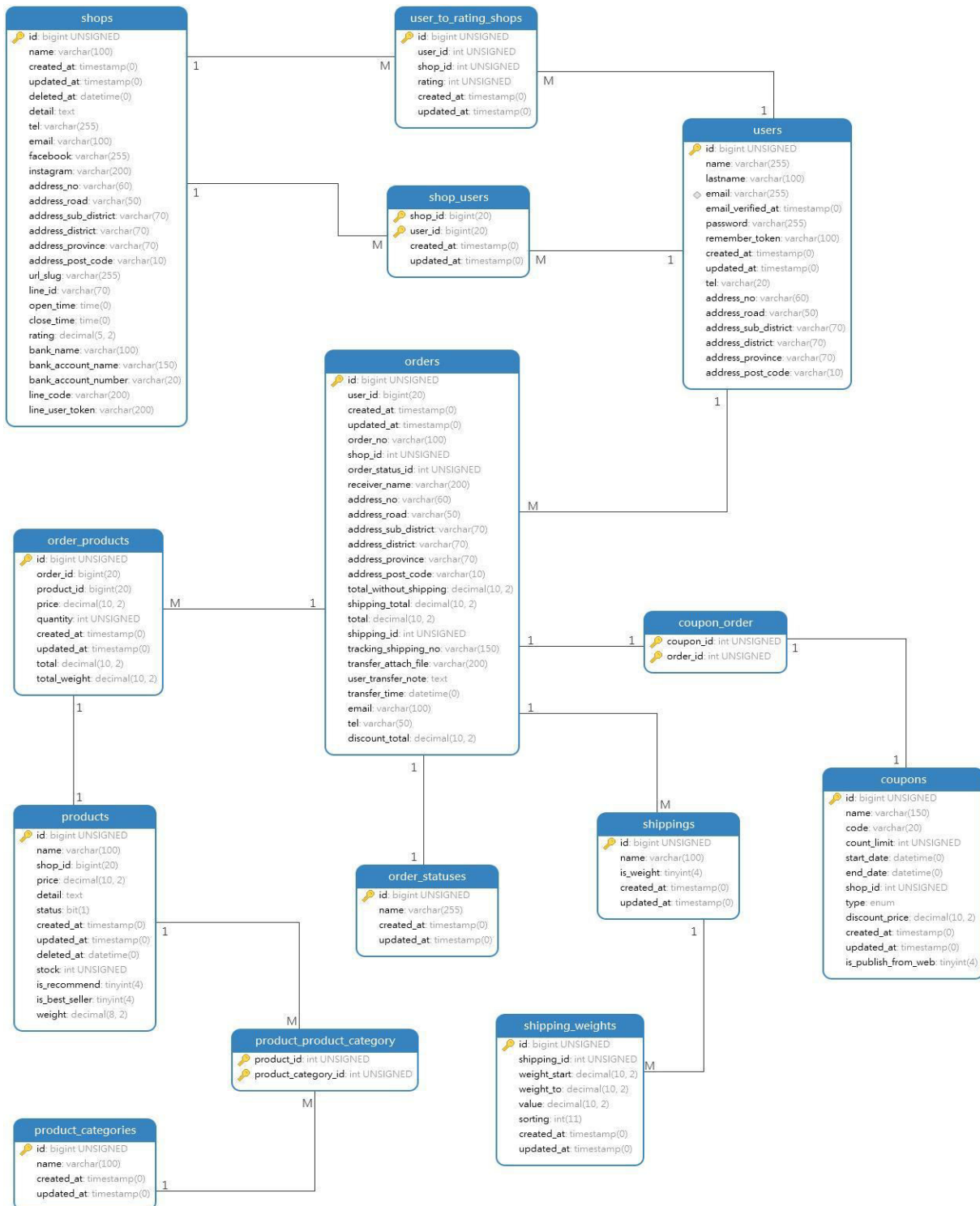


Figure 3 The static relationship of the system (Class Diagram)

4.3 Context Diagram is a data flow diagram showing an overview of the system process and system boundaries to be developed as shown in Figure 4.

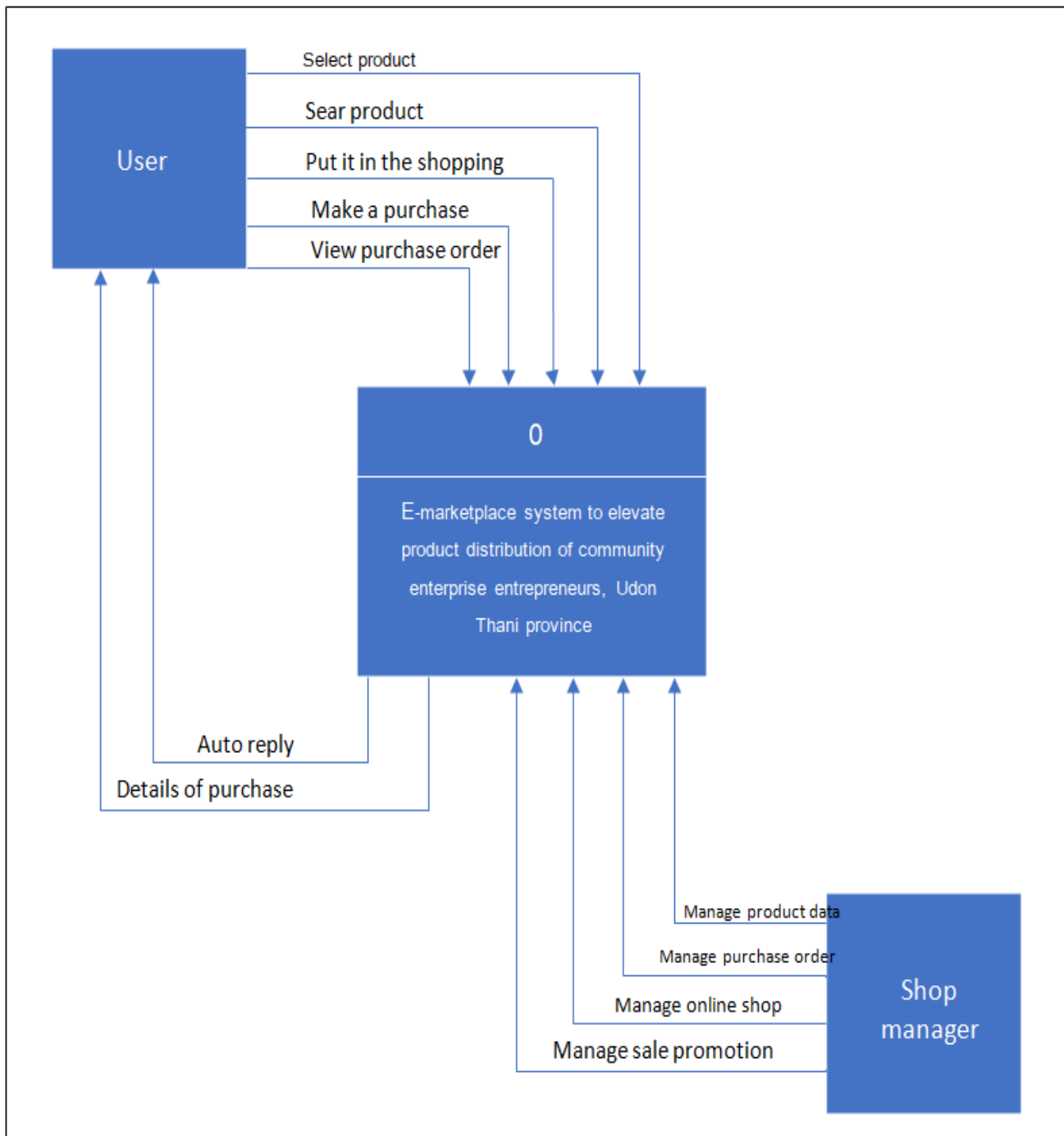


Figure 4 Context Diagram

5. Develop an e-marketplace system to elevate the level of product distribution for community enterprise entrepreneurs in Udon Thani province.

5.1 E-Commerce Application Development process

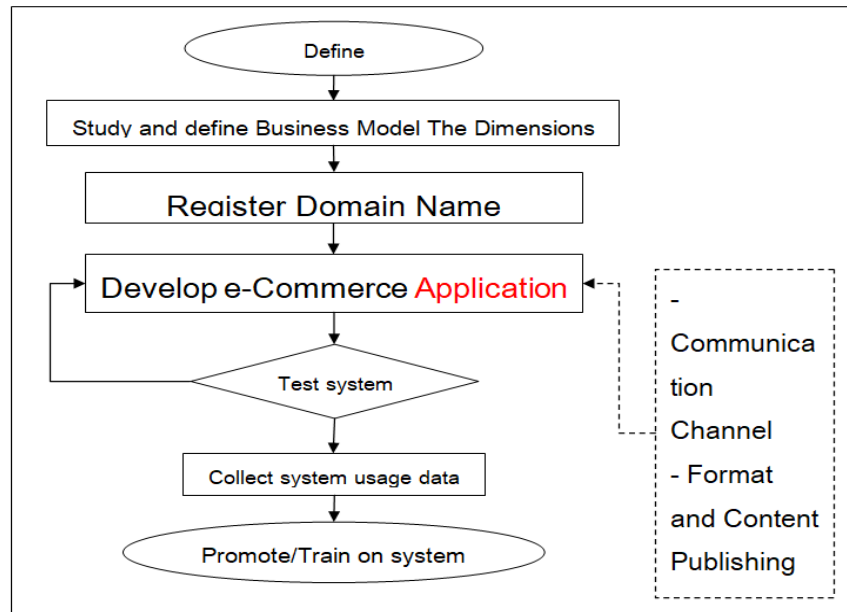


Figure 5 shows the process of an e-commerce system development

5.2 An overview of e- marketplace system development on application of techniques and different computer languages in order to elevate the product distribution of community enterprise entrepreneurs in Udon Thani Province

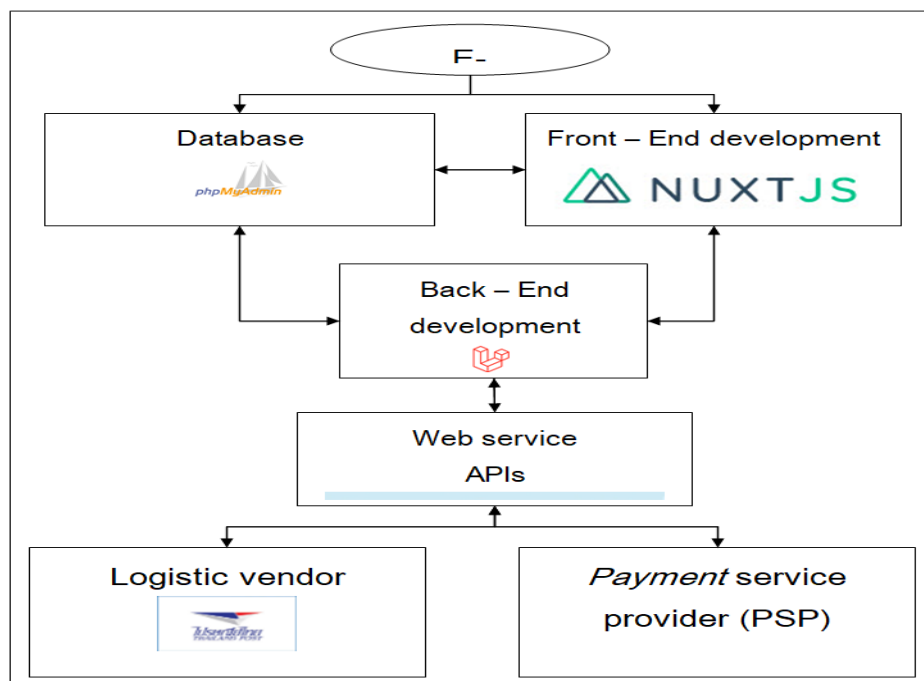


Figure 6 shows the process of applying techniques and different computer languages to develop the e-marketplace system to raise the level of product sales of community enterprise entrepreneurs in Udon Thani province

International Journal of Applied Engineering & Technology

Development of intelligent e-commerce system among community enterprise entrepreneurs in Udon Thani Province is classified into 3 smaller parts namely database development, front-end development and back-end development.

RESULT

The presentation of research results, the researcher carried out the method as follows.

1. Expert system testing method. This is conducted to verify the accuracy of the data and the performance of the system before putting it into production. By testing the front-end and back-end functionalities, testing to prevent or mitigate errors caused by user input, verifying the validity of the system login and the accuracy of data processing.

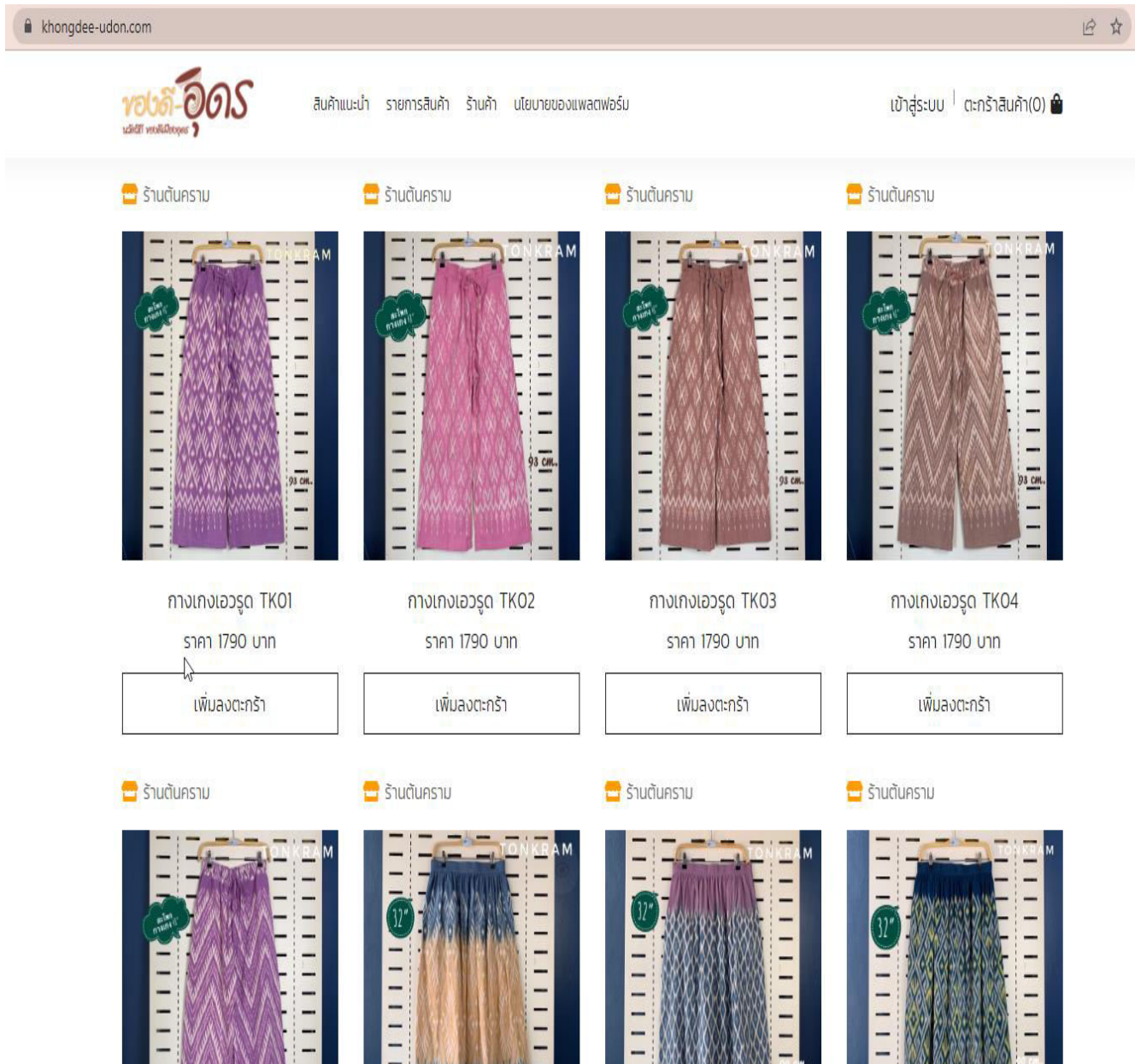


Figure 7 shows front-end shop

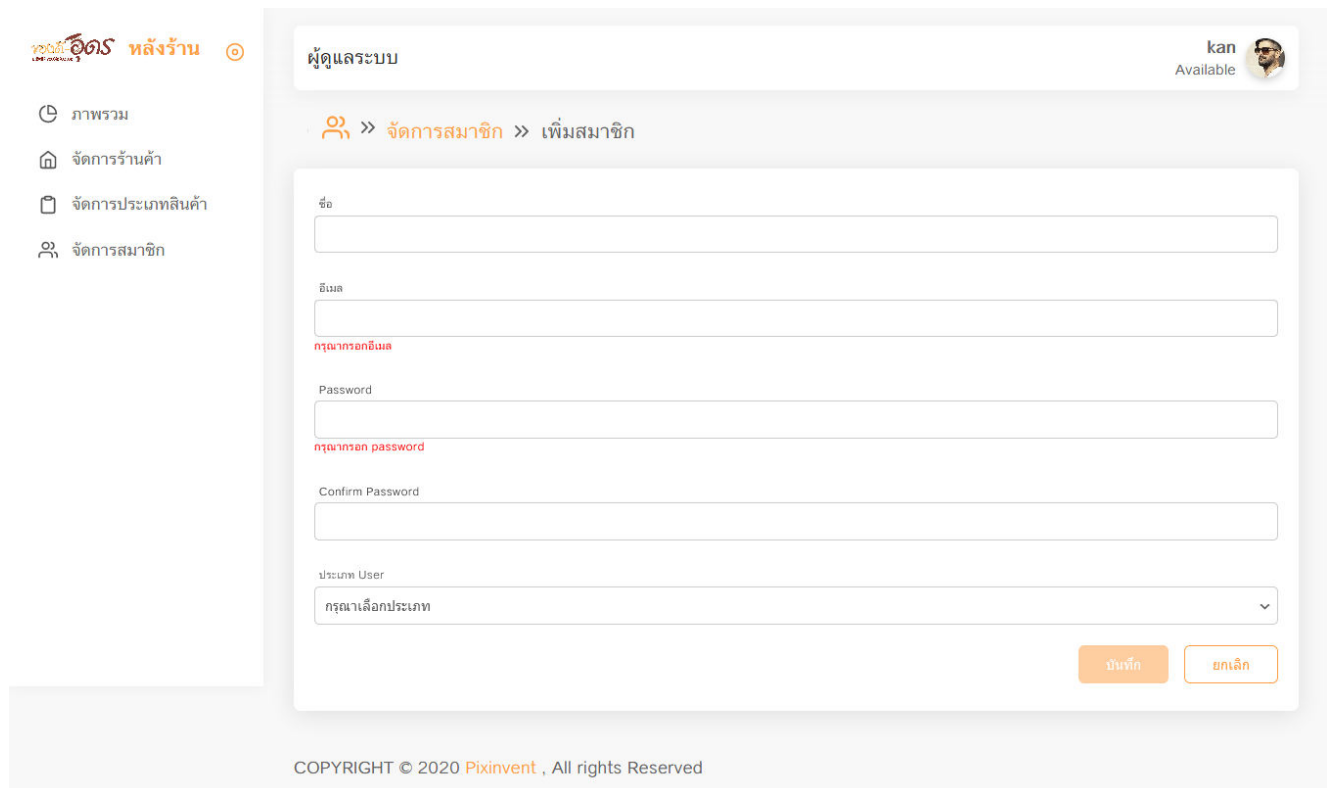


Figure 8 shows back-end shop

2. System performance evaluation by experts and users. It was based on testing by 8 computer experts and 70 general users with questionnaires in 3 areas: system performance; the accuracy of the system performance and the convenience and ease of system use. The research hypothesis was that the overall system efficiency was at an excellent level ($H_0 : \mu \leq 3.50$ and $H_1 : \mu > 3.50$).

Table 1 Performance Evaluation results of Dee Udon's e-commerce system by experts and general users.

Evaluating topic	Expert	Result	General user	Result
System performance	$\mu = 4.50$ $\sigma = 0.75$	Very good	$\mu = 4.37$ $\sigma = 0.57$	Excellent
Accuracy of the system performance	$\mu = 4.75$ $\sigma = 0.46$	Very good	$\mu = 4.56$ $\sigma = 0.55$	Very good
The convenience and ease of system use	$\mu = 4.55$ $\sigma = 0.89$	Very good	$\mu = 4.41$ $\sigma = 0.53$	Excellent

CONCLUSION (S) AND DISCUSSION (S)

1. Conclusion

The research results were in accordance with the set objectives which were an e-marketplace system has played the driving factor to enhance the product distribution of community enterprise entrepreneurs in Udon Thani Province. Drawing upon, the results of the system's performance evaluation from experts, it was at the very good level with a mean of 4.60 and a standard deviation of 0.59, while the results of the system's performance evaluation from general users were at an excellent level with the mean of 4.46 and the standard deviation of 0.47.

2. Discussion

The e-marketplace system to enhance product distribution of community enterprise entrepreneurs in Udon Thani Province is a distribution channel for products which rely mainly on accuracy and speed. Distribution through this channel is also regarded as a direct – to - consumer distribution channel. As a result, customers can get high quality products and the lowest possible prices. The original product distribution of community enterprises in Udon Thani Province was a predominantly offline commerce which was lack of online sales channel. This is consistent with the results of the risk analysis from in-depth interviews of community enterprise groups, Udon province. It was found that problems from the outbreak of the COVID-19 virus affected the distribution of products to shift to e-marketplace system as a product distribution channel of Udon Thani province. The e-marketplace system will enhance and manage the products for startups to be able to upgrade themselves to high potential startups and simultaneously upgrade the entrepreneurs to Smart Entrepreneurs. It also creates a marketing opportunity to reduce the risks from such outbreak of Covid-19 impact and generate income for entrepreneurs in the future. This is consistent with the research' s findings (Pradit, 2018) that the distribution channel is a business activity that allows the produced products can be reached to end consumers by relying significantly on accuracy, security and speed. When a distribution channel for products that reach consumers directly by eliminating middlemen, retailers and wholesalers, will allow customers to consume their products at very affordable prices. Marketers must focus on the service marketing mix that meets the needs of consumers.

Based on the development of the e-marketplace system, it was found that the system could operate in line with the scope and objectives of the research. According to the satisfaction assessment form of e-commerce system users, the performance of the system is assessed at a very good level facilitating the system users in terms of the convenience of purchasing community enterprise products and promoting the distribution of products in Udon Thani province.

SUGGESTION

1. Community enterprise entrepreneurs are able to deploy the e-marketplace system to elevate the level of product distribution of community enterprise entrepreneurs in Udon Thani province for products sales.
2. Adding more variety, referrals and flexibility of shipping methods with local shipping companies is recommended in order to save time for community enterprises
3. Accessibility should be more mobile-friendly, possibly developed in a mobile platform.
4. Adding a variety of payment channels is required to support the system use of users.

REFERENCES

- Anuchida Chinsiraprapa & Thanin Silpcharu. (2020). A Structure Equation Model of Strategic Management for Driving Country Economy of Provincial Chamber of Commerce. *Applied Science and Engineering Progress*, 13(3), 195–201. <https://doi.org/10.14416/j.ijast.2019.01.005>
- Chatchai Inthasang, Pimphan, S., & Khamphroh, A. (2019). *Perception of Service Quality: Purchase Intention on E-Commerce Products*. 14(48), 1–12.
- Dewobroto, W., Nimran, U. N., Arifin, Z., & Yulianto, E. (2021). The Effect of Media Technology on Electronic Shopping. *Webology*, 18(Special Issue 04), 1424–1435. <https://doi.org/10.14704/WEB/V18SI04/WEB18207>
- Pradit, K. (2018). *The Development of Distribution Channels of Rice Products through the Electronic-Commerce System for Bor-Khor's Housewife's Group, the Community Enterprise in Takbai District, Narathiwat Province*. 2(12), 152–164.
- Rataphol Sangkhasuk, Kanlaya Naklungka, Ekphon, W., & Surasawadee, W. (2017). *Development Of E-Commerce Channel Among Community Enterprises Network*. 12(1), 57–64.

International Journal of Applied Engineering & Technology

Thongkaem, K., & Phaengsoi, K. (2019). *The Problems And Solution of OTOP Products Based On The Methods Of Buddhism In Udon Thani Province*. 6(7). <https://so03.tci-thaijo.org/index.php/JMND/article/view/214897>

Strategic and Information Work Group for Provincial Development. (2018). Provincial Development Plan 2018-2022, Review Edition, Fiscal Year 2020. Strategic and Information Work Group for Provincial Development. <http://www.udonthani.go.th/main/download/3782/>

National Economic and Social Development Plan No. 12. (2016). Office of the National Economic and Social Development Board Prime Minister's Office Office of the National Economic and Social Development Board Prime Minister's Office https://www.nesdc.go.th/ewt_dl_link.php?nid=6422