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Analysis of The Application of Information Technology in Improving The Efficiency of Supply Chain Management at Js Florist Store in Samarinda City

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Abstract. This study aims to analyze the application of information technology in improving the efficiency of supply chain management at JS Store Florist in Samarinda City. This study is motivated by the rapid development of information technology and its role in supporting supply chain management, especially for small-scale businesses. This study uses a qualitative descriptive method with data collection techniques through interviews, observation, document study, and literature study. Data analysis was conducted using the SWOT analysis method. The results showed that the use of information technology can improve supply chain management efficiency, as seen from the savings in operating costs of IDR 1,300,000 per month, or equivalent to 17.21%. This proves that the application of information technology at JS Store Florist is capable of improving the efficiency of supply chain management. The use of marketplaces, digital recording, and online ordering strategies has been proven to accelerate production and distribution, as well as providing recommendations for the development of a more integrated digital ordering system to strengthen competitiveness and business sustainability in the face of increasingly fierce competition in the florist business.

Keywords: Efficiency; Information Technology; Small Business; Supply Chain Management; SWOT Analysis.

1. INTRODUCTION

The development of information technology has had a significant impact on various business sectors, including small-scale businesses. In the digital era, information technology is not only a supporting tool but also an important strategy to increase business competitiveness. Based on research conducted by Ningsih & Rasyid (2020), the use of information technology in supply chain management (SCM) practices has been proven to have a positive and significant impact on improving company operational performance, particularly in the small and medium-sized business sectors in Indonesia.

Supply chain management is one of the operational aspects that is greatly influenced by the application of information technology because it helps to streamline the procurement of raw materials, the production process, and distribution to consumers. Based on data recorded by the Central Statistics Agency (BPS), bouquet production in Indonesia throughout 2022 reached 162.96 million stems. This figure represents an increase of 25.68% compared to the previous year, which was 121.07 million. This information shows that bouquet flower production in Indonesia continued to experience significant growth in 2022. This increase is certainly an indication of growing demand and interest in bouquets among the public.

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This research was conducted at JS Store, a florist business in Samarinda City. JS Store is a small business in Samarinda City that is involved in the production and sale of flower bouquet products with a modern concept, using a shop house to produce flower bouquets. JS Store started its business in March 2023 and is located at Jl. Struggle, Sempaja Sel., District. North Samarinda, Samarinda City, East Kalimantan. JS Store produces bouquets with various models and according to consumer demand.

This study aims to analyze how the application of information technology improves supply chain management efficiency in small-scale florist businesses, as well as providing empirical evidence through a comparison of operational costs before and after the application of information technology.

2. LITERATURE REVIEW

General System Theory

According to Ludwig von Bertalanffy (1968), a system is defined as a complex unity of interacting elements that form an organized totality to achieve a specific goal. In the context of supply chain management, this theory provides a conceptual framework that allows for a deep understanding of the complexity of interactions between various parties in the supply chain ecosystem. System Theory emphasizes that to understand complex phenomena, an approach is needed that views the entire system as something greater than the sum of its parts, so that any change in one component will have an impact on other components and the system as a whole.

The explanation of System Theory isan approach to integrating or combining various elements used to understand and analyze the complexity of interactions between various components in a system.This theory is highly relevant in the analysis of the application of information technology in supply chain management, because modern supply chains are open systems that operate in a dynamic and constantly changing business environment. In this case, information technology functions as a tool that facilitates real-time information exchange in the supply chain, from suppliers to end consumers.Bertalanffy's System Theory provides a foundation for understanding how information technology can help improve the efficiency and effectiveness of supply chain management so that all processes become faster and more successful.

Information Processing

Introduced by Jay R. Galbraith in 1973, this theory is based on the idea that the more complex and uncertain business conditions are, the greater the need for organizations to collect, process, and share information effectively. Galbraith emphasizes that uncertainty can be reduced by strengthening an organization's information processing capacity, such as through

the design of an appropriate organizational structure, efficient work procedures, and the use of appropriate information technology and communication systems. Therefore, organizations are not only seen as places for the production of goods or services, but also as information processing networks that must respond to changes in the market and business environment. In the context of supply chain management, this theory provides a basis for understanding that information is the main driver of supply chain efficiency and effectiveness. Companies or businesses involved in modern supply chain processes must be able to integrate information flows from various parties, ranging from suppliers, manufacturers, and distributors to end consumers.

As a middle range theory, this concept is relevant to research on small and medium-sized enterprises, such as florist shops, because it can explain the direct relationship between the application of information technology and increased operational efficiency in supply chain management. With information technology, processes such as stock recording, raw material purchasing, promotion, and workforce management can be carried out more quickly and accurately, thereby minimizing uncertainty in the supply chain. In other words, this theory explains that information technology is not only a supporting tool, but also a strategic means of increasing an organization's capacity to process information and respond to market dynamics more effectively.

3. METHOD

This study uses a qualitative descriptive method with a focus on analyzing the application of information technology in improving supply chain management efficiency at JS Store Florist in Samarinda City. This qualitative approach was chosen because it allows researchers to gain an in-depth understanding of the phenomena in the field. This research was conducted at Florist JS Store as the object of study, a small business engaged in the manufacture and sale of artificial flower bouquets. Data collection techniques included interviews with business owners, direct observation, document studies in the form of operational cost reports, and a literature review of relevant previous studies.

Data analysis was conducted using the SWOT analysis method to identify strengths, weaknesses, opportunities, and threats, then formulate appropriate business development strategies based on the research findings. The analysis process included data collection, data reduction, data presentation, and conclusion drawing. This study aims to provide a clearer picture of the role of information technology in improving the efficiency of supply chain

management, especially in small-scale businesses, and to provide strategic recommendations to support business development.

4. RESULTS AND DISCUSSION

Details of Operational Costs

Table 1. Business operating costs in one month before and after using information technology

Cost	Cost Components	Expense Details	Cost Differentiation		Efficiency Description (Difference)
			With IT	Without IT	
Supplier	Raw Materials	Artificial Flowers	IDR 1,000,000	IDR 1,300,000	IDR 300,000
		Wrapping Fabric	IDR 600,000	IDR 780,000	IDR 180,000
		Hot Glue	IDR 80,000	IDR 100,000	IDR. 20,000
		Wire Rod	IDR 35,000	IDR 45,000	IDR 10,000
		Foam	IDR 200,000	IDR 250,000	IDR 50,000
		Tape	IDR 250,000	IDR 300,000	IDR 50,000
		Spanbon fabric	IDR 100,000	IDR 130,000	IDR 30,000
		Cardboard	IDR 30,000	IDR. 40,000	IDR. 10,000
		Flower tape	IDR 10,000	IDR 13,000	IDR 3,000
Production	Labor	Manufacturer	IDR 2,500,000	IDR 3,000,000	IDR 500,000
Process	Electricity	Lighting	IDR 100,000	IDR 100,000	IDR -
	Wi-Fi	Operational	IDR 100,000	IDR 100,000	IDR -
Marketing	Courier	Courier	IDR 210,000	IDR 330,000	IDR 120,000
Distribution	Promotion	Social Media	IDR 38,000	IDR 65,000	IDR 27,000
Fixed Cost	Shop Rent	Shop	IDR 1,000,000	IDR 1,000,000	IDR -
	Total		**IDR 6,253,000**	**IDR 7,553,000**	**IDR 1,300,000**

Source: Primary Data, Owner of JS Store Florist, processed by the Author

Based on the table above, there is a cost saving of IDR 1,300,000 or approximately 17.21% per month from the total cost. The greatest efficiency comes from raw material and labor costs, which can be reduced through purchasing on the Shopee marketplace at lower prices and flexible work scheduling with part-time workers.

SWOT Analysis

Table 2. SWOT Matrix for JS Store Florist Shop

	Strength (S)	**Weakness (W)**
Internal Factors	1. Utilization of marketplaces for purchasing raw materials 2. Digital stock recording, although simple 3. Social media for promotions and bookings 4. Operational cost efficiency 17.21% 5. Flexible distribution with logistics services	1. Unintegrated IT systems 2. Complete dependence on social media platforms 3. There is no cloud-based SCM application 4. Limited IT infrastructure and data security
External Factors		
Opportunity (O)	**SO Strategy**	**WO Strategy**
1. Growth of the MSME digital market 2. Free/affordable cloud software 3. Government support for digital MSMEs 4. Integrated logistics technology	1. Integrate the marketplace with a cloud stock recording system (e.g. Zoho Inventory) 2. Use cloud ERP (Oddo, SAP Business One) to manage SCM 3. Optimize social media and paid advertising to increase visibility 4. Use the tracking and shipping automation features from the marketplace	1. Take part in MSME digitalization training to improve IT weaknesses. 2. Use free cloud SCM software like stockpile 3. Build logistics collaboration for distribution cost efficiency
Threat (T)	**ST Strategy**	**WT Strategy**
1. Fierce competition in the florist business 2. Media platform algorithms are unstable 3. Fluctuating raw material prices	1. Platform diversification (standalone website, Shopee, Tokopedia) 2. Build a customer database for direct promotions 3. Sales data analysis for more efficient raw material purchasing	1. Backup data on Google Drive/Dropbox for security

Source: Processed by the Author

Business Development Strategy

1. SO Strategy (Strength-Opportunity) :This strategy focuses on leveraging strengths to seize opportunities. JS Store Florist canIntegrating marketplaces with cloud-based stock management systems, such as Zoho Inventory or Odoo ERP, automates raw material restocking. Furthermore, utilizing paid social media advertising can expand market reach and reach more consumers. Integrating shipping with marketplaces makes it easier for consumers to track their orders and speeds up the supply chain.

2. WO Strategy (Weakness-Opportunity) :This strategy focuses on addressing business weaknesses by leveraging opportunities. One important step that can be implemented is the use of cloud-based SCM software, such as ERPNext or Stockpile, to minimize manual work in recording inventory and transactions. Using this software will reduce the risk of data input errors and make it easier for business owners to monitor business performance in real time. Furthermore, JS Store can also participate in various SME digitalization training programs currently offered by the government and e-commerce platforms. This training will help business owners better understand technology-based supply chain management, enabling more efficient and independent business operations.
3. ST Strategy (Strength-Threat) :This strategy leverages strengths to address various threats. One strategy is to create an official store website as a sales platform and join integrated marketplaces like Shopee and Tokopedia, eliminating reliance on social media. This allows JS Store to fully control consumer data, manage promotions as needed, and minimize risks arising from changes in policies or algorithms on the platform. Furthermore, regular sales data analysis is crucial for predicting demand trends and anticipating potential fluctuations in raw material prices. This allows the store to maintain price stability while increasing its competitiveness in a competitive market.
4. WT Strategy (Weakness-Threat) :This strategy is defensive in nature, as it aims to mitigate weaknesses and anticipate threats. One key step is implementing a data backup system using cloud storage services like Google Drive, Dropbox, or OneDrive. This system is crucial to prevent the risk of losing critical data, such as sales reports, stock records, and customer data. Furthermore, supplier diversification is also crucial to maintain price stability and ensure stock availability. This allows JS Store to minimize dependence on a single supplier and be better prepared for market price fluctuations.

IFAS and EFAS Matrix

Table 3. IFAS Matrix

Internal Factors	Weight	Rating	Score
Strengths			
1. Utilization of marketplaces for purchasing raw materials	0.2	4	0.8
2. Simple digital stock recording	0.15	3	0.45
3. Social media used for promotion and ordering	0.10	3	0.3
4. Operational cost efficiency of up to 17.21%	0.15	4	0.6
5. Flexible distribution with logistics services	0.10	3	0.3
Total Strength	0.70		2.45
Weaknesses			
1. IT systems are not yet integrated	0.1	2	0.2
2. High dependence on social media	0.05	2	0.1
3. Lack of cloud-based SCM applications	0.1	2	0.2
4. Limited IT infrastructure and data security	0.05	2	0.1
Total Weaknesses	0.3		0.60
TOTAL IFAS	1.0		3.05

Source: Research Results (2025)

Table 4. EFAS Matrix

External Factors	Weight	Rating	Score
Opportunities			
1. Growth of the MSME digital market	0.2	4	0.8
2. Availability of free/affordable cloud software	0.15	3	0.45
3. Government support for digital MSMEs	0.10	3	0.3
4. Increasingly integrated logistics technology	0.10	3	0.3
Total Opportunities	0.55		1.85
Threats			
1. Intense competition in the florist business	0.25	3	0.75
2. Changes in social media platform algorithms	0.10	2	0.2
3. Fluctuations in raw material prices	0.10	2	0.2
Total Threats	0.45		1.15
TOTAL EFAS	1.00		3.0

Source: Research Results (2025)

Based on the results of internal factor analysis, the total overall score of 3.05 indicates that JS Store has strong internal strengths. This means that the business is able to effectively utilize its resources to support operational efficiency and supply chain management. The use of information technology, such as the use of marketplaces for raw material procurement and digital promotion through social media, is a major factor that strengthens JS Store's internal position. Although there are still weaknesses in terms of system integration and limited IT infrastructure, overall, the internal condition of this business is in the strong category.

From the results of the external factor analysis, a total score of 3.00 was obtained, which means that JS Store is quite capable of taking advantage of external opportunities and dealing with business environment threats well. The main opportunities come from the growth of the micro, small, and medium enterprises (MSME) digital market, advances in logistics technology, and government support for the digital transformation of small businesses. However, threats such as fierce competition among florists and fluctuations in raw material prices still need to be anticipated with adaptive strategies. Overall, JS Store's external conditions are in a position of high opportunity and moderate threat, thus supporting the application of an aggressive (SO) strategy in business development.

Table 5. SWOT Quadrant Analysis

Quadrant	Condition	Strategic Focus	Strategic Direction for Floris JS Store
Quadrant I (Strength-Opportunity)	Great power, vast opportunities	Aggressive Strategy (Growth Strategy)	Cloud ERP integration, marketplace optimization, digital marketing expansion.
Quadrant II (Strength-Threat)	Great power, high threat	Diversification / Stability Strategy	Create a standalone website, combined with integrated sales applications such as Shopee and Tokopedia.
Quadrant III (Weakness-Opportunity)	Weaknesses can be improved with opportunities	Turn-Around Strategy (improvement)	Free SCM software implementation, following digital training.
Quadrant IV (Weakness-Threat	High weakness, high threat	Defensive Strategy	Cloud data backup, strengthening digital security.

Source: Processed by the Author, 2025

a. Strengths (S):Utilizing marketplaces for raw material procurement, digital stock recording and sales transactions, utilizing social media and WhatsApp Business for sales and services.
b. Weaknesses (W):Lack of IT integration, reliance on third-party platforms, poor utilization of SCM and cloud applications, lack of technology infrastructure and data security.
c. Opportunities (O):Growth of digital markets and SME ecosystems, access to low-cost ERP and cloud applications, support for e-commerce platformsand government, integration of logistics technology with marketplaces and social media.
d. Threats (T):Fierce competition among florist shops, modification of all platform algorithms and policies, fluctuations in prices of key raw materials.

5. CONCLUSION

Based on the results of this study, it shows that the application of information technology at JS Store Florist has a significant impact on SCM efficiency, even in small-scale businesses. The use of marketplaces for purchasing raw materials and the implementation of IT has successfully streamlined operational costs by up to 17.21% per month. In addition, information technology not only speeds up the production process and optimizes distribution, but also improves the accuracy of stock management, making operational flows more efficient. Strategies that JS Store can implement in the future to improve SCM efficiency through the use of information technology include starting with the integration of cloud-based business management systems.

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