ANALYSIS OF SUPPLY CHAIN MANAGEMENT IN INDONESIAN CREATIVE INDUSTRIES: AN AHP APPROACH

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Abstract

The implementation of supply chain management can help creative industry to improve their business. However, there are many obstacles that should be overcome, such as, lack of financial, lack of knowledge in maintaining relationship with supplier and customers, and lack of technology. Therefore, this study aims to acknowledge the implementation of supply chain management in Indonesian creative industries and identify the main issues in supply chain management. This study applies AHP approach to analyze the data. There were 50 respondents involved in this study and completed the questionnaires. This study focuses on several criteria such as supplier relationship management, demand management, cash flow, customer service, and product development. The research findings show that managing the cash flow is the most important when one applies supply chain management. The future research is expected to extend the research with other approaches so that the understanding of the issues will benefit the improvement of creative industries.

Keywords: creative industries, supply chain management, AHP

Author's biography

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1. Introduction

Today, the global market requires more distinctive products. In order to fulfill this demand, the company should have capacity to improve their innovation of their products to survive in the business competition. In other words, knowledge-based economy is one of the critical issues to success in the business environment. Knowledge-based economy includes learning economy, creative economy, and open knowledge economy [9]. Creative economy will encourage innovation for design of product and economic growth [15], [3]. For example, the innovation has positive correlation with the market share; and consequently, the more creative economy are established, the more job vacancies are created. Developed countries have been prioritizing creative economy to meet the consumers' needs.

Indonesia has also been improving the national competitive advantages in the last decade by optimizing the role of creative industries. Creative industries have been introduced by the government to the public, such as in the cultural events, and through media. It is aimed to attract more people who have creative ideas to involve in this potential sector. The government of Indonesia has been also providing assistantships to help the development of this sector, such as training, funds, tools and many others. The assistantship is provided by the central and local government.

As a strategy, supply chain management can help the company to integrate and coordinate their activities. In other words, this will provide an opportunity for the company to gain more value added, such as reduce waste, inventory, and logistics cost. However, many firms encounter obstacles to apply supply chain management because of the complexity of this system. Therefore, all units in the supply chain management should have developed long term relationship. Then, all units in the supply chain management should understand that if a unit has low performance, it would impact other units' performance in the supply chain. Therefore, the knowledge of supply chain management practice is important for all units.

The area of creative industries has not been widely studied even it has entrepreneurial activities. However, there are few studies of creative industry discussing the issue of supply chain management practice in the creative industries. Therefore, this study will contribute to enrich investigation in the creative industries and its relationship with supply chain management issue. This study aims to identify the practice of supply chain management in the creative industry and investigate the most important role of several dimensions in the supply chain management practice. Therefore, the findings will contribute to address, which are the most critical point in managing supply chain in creative industries.

This paper is structured as follows: firstly, we explain the situation of creative industries in Indonesia. Secondly, we will discuss the role of supply chain management as the main issue of managing creative industry. Thirdly, we will describe the research methodology including the AHP approach. Fourthly, we will present the result of study. Finally, we finish by assessing the most important issue in managing supply chain in Indonesia creative industry.

2. Literature Review

The concept of supply chain management

There are many researchers who define supply chain management from different perspective. Supply chain management is defined as managing all activities in the upstream, production process, and downstream sides with the aim to integrating all activities [10]. If supply chain management were properly applied by the company, it means that the company might successfully survive in the highly competitive business.

Supply chain management contains several activities, such as, managing relationship with suppliers, demand, cash flow, customer service, and product development [12]. The relationship in supply chain management is critical because this will affect several issues, such as the price of raw material, delivery time, and quality of raw material. There are several types of supplier relationship in supply chain, for instance adversarial and long term relationship. In fact, there are several SMEs that have been practicing their relationship in adversarial form. The reason for this, SMEs might be flexible to

have low price of raw material because they do not have long term contract with several suppliers. It might be similar to the creative industry that this type of relationship has been dominating their operation.

The demand management in supply chain is also critical to manage because consumers have several considerations to purchase the products. The external and internal factors might impact the consumers' decision. Therefore, the firm should focus on several activities in managing the demand. For instance, open information to the all units with the aim to improve integration, coordination, and collaboration [14]. All units should be involved in supply chain in terms of developing the product. It is similar situation for the creative industries, which their products have distinctive type compared to other businesses.

Thus, extending the channel of distribution is compulsory with the aim to enlarge the market of their products [7]. Finally, one of critical activities in supply chain is managing the cash flow. The units will sustain the system as the cash flow is properly managed [16]. The trust will be maintained and this will impact all operation and performance. Lummus and Vokurka [7] claim that the cash flow cycle time can be achieved as long as the integration of supply chain is also high. Thus, Mistry [8] suggests that small business should apply supply chain management in order to improve the cash flow. Therefore, it can be seen that supply chain management will improve the competitive advantages of the company.

The Scope of Creative Industries

Idea plays an important role in creative industries and its lead to human intellectual [13]. Creative industries are supported by three pillars, for example creativity, skill, and talent [11]. These pillars will impact the characteristics of the products but it is sensitive to copy. Creative industries are associated to several issues, for instance copyrights, patents, design or trademarks [1]. However, the scope of creative industries is not only part of the arts products but it is more to extensive area [4] (DeNatale and Wassal, 2007). According to Indonesian Ministry of Commerce [6], creative industries include media publishing, electronic media presentation with cultural content, cultural presentation, arts and culture intensive, design, and creativity with technology.

There are five key factors for creative industries to succeed, which include vision, focus, financial acumen, pride, and urgency [5]. This will provide an opportunity for creative industries to operate their activities with more flexible employment. In addition, the individuals who are involved in creative industries should have capacity and capability to communicate, maintain network, and building a solid team to solve the business challenges [2]. Furthermore, several key success factors should be focused by creative industries including encouraging creativity, stimulating behavior, brainstorming for creative ideas and suggestions, more free time for employees to think of ideas, and flexible management system [13]. Thus, it is clear that there are internal and external critical success factors impacting the sustainability of creative industries.

3. Methods

This study aims to identify the particular issues, which can affect supply chain management practice for creative industries. This study is categorized as descriptive study because the causal relationship among variables was not tested. The focus of this study is to prioritize the main issues in supply chain management practice in creative industries. The data was collected by one to one interview of creative industry in Central Sulawesi Province. Non-probability judgmental sampling was chosen as an approach to identify the respondents. The identification process was conducted by considering several categories such as the type of business and products. Therefore, there were 50 respondents who completed the questionnaire in this study. The AHP scale 1-9 was used in the questionnaire as follow.

Tab. 1 Nine-point Pairwise Comparison Scale

Numerical Value	Definition
1	equal importance
3	weak importance over one another
5	strong importance
7	very strong importance
9	absolute or extreme importance
2, 4, 6, 8	Intermediate values between two adjacent judgments

The data was analyzed by following several steps. Firstly, the goal, criteria, and alternatives are identified. Secondly, the pair wise comparison matrices of all criteria and alternatives are constructed. Thirdly, the weights of criteria and local weight are determined by using normalization procedure. Finally, local weight is synthesized and it is followed by normalizing the global weights. All the data was processed on Microsoft Excel Software.

Tab. 2 The Stages of AHP Hierarchy

Goal	Criteria	Sub Criteria
Determine supply chain management practice in creative industries	Demand Management(DM)	share information with supplier(DM1); forecasting (DM2); planning capacity(DM3)
	Cash Flow(CF)	provide loan to the customer(CF1); pay the obligation to supplier(CF2); share information to supplier(CF3)
	Customer Relationship(CR)	effectively meet customer order(CR1); efficiently meet customer order(CR2); meet customer demand with high quality(CR3); flexibility(CR4)
	Supplier Relationship(SR)	adversarial relationship(SR1); long term relationship(SR2); supplier involvement in quality program(SR3)
	Product Development(PD)	supplier involvement in product design(PD1); customer involvement in product design(PD2)

4. Results and Discussion

AHP is one of methods for solving managerial and technical problems with complex decision. The AHP procedures will construct the criteria into sub criteria as presented on Tab. 2. Then, the criteria can be analyzed by independent pair comparison analysis, which is available on Tab. 3. The rank of criteria and sub criteria can be identified by comparing the local weight. The priority vector is similar to the local weight. Meanwhile, the global weight is obtained by multiplying the local weight with higher priority of the criteria.

Tab. 3 Pairwise matrix for comparison between criteria

Criteria	Demand Management (DM)	Cash Flow (CF)	Customer Relationship (CR)	Supplier Relationship (SR)	Product Development (PD)
Demand Management(DM)	1	0.2	0.2	0.2	0.1
Cash Flow(CF)	5	1	3	3	3
Customer Relationship (CR)	5	0.3	1	0.1	6
Supplier Relationship(SR)	5	0.3	7	1	5
Product Development (PD)	7	0.3	0.2	0.3	1

Tab. 4 Pairwise comparison of demand management   Tab.5 Pairwise comparison of cash flow

Tab.6 Pairwise comparison of customer relationship

Sub Criteria	Effectively meet customer order (CR1)	Efficiently meet customer order (CR2)	Meet customer demand with high quality (CR3)	Flexibility (CR4)
Effectively meet customer order (CR1)	1	0.33	0.33	0.5
Efficiently meet customer order (CR2)	3	1	3	3
Meet customer demand with high quality (CR3)	3	0.33	1	3
Flexibility (CR4)	2	0.33	0.33	1

Sub Criteria	Share information with supplier (DM1)	Forecasting (DM2)	Planning capacity (DM3)
Share information with supplier (DM1)	1	0.2	0.2
Forecasting (DM2)	5	1	0.5
Planning capacity (DM3)	5	2	1

Sub Criteria	provide loan to the customer (CF1)	pay the obligation to supplier (CF2)	share information to supplier (CF3)
Provide loan to the customer (CF1)	1	0.2	0.33
Pay the obligation to supplier (CF2)	5	1	3
Share information to supplier (CF3)	3	0.33	1

Tab.7 Pairwise comparison of supplier relationship

Sub Criteria	Adversarial relationship (SR1)	Long term relationship (SR2)	Supplier involvement in quality program (SR3)
Adversarial relationship (SR1)	1	0.2	0.5
long term relationship (SR2)	5	1	3
supplier involvement in quality program (SR3)	2	0.33	1

Tab. 8 Pairwise comparison of product development

Sub Criteria	supplier involvement in product design (PD1)	customer involvement in product design (PD2)
supplier involvement in product design (PD1)	1	7
customer involvement in product design (PD2)	0.14	1

Tab. 9 The Global Weight

Criteria	Local Weight	Sub Criteria	Local Weight	Global Weight
Demand Management (DM)	0.041	DM1	0.090	0.004
		DM2	0.353	0.014
		DM3	**0,556**	**0.023**
Cash Flow (CF)	**0.355**	CF1	0.106	0.038
		CF2	**0.633**	**0.225**
		CF3	0.260	0.092
Customer Relationship (CR)	0.177	CR1	0.067	0.012
		CR2	**0.400**	**0.071**
		CR3	**0.400**	**0.071**
		CR4	0.133	0.024
Supplier Relationship (SR)	0.306	SR1	0.122	0.037
		SR2	**0.648**	**0.198**
		SR3	0.230	0.070
Product Development (PD)	0.122	PD1	**0.875**	**0.107**
		PD2	0.125	0.015

Tab. 9 shows that creative industries should focus on controlling the cash flow as the most important issue in managing supply chain management compare to others. In addition, the following issue is to maintain relationship with supplier and it is nominated as the second important issue in supply chain management practice. Furthermore, customer relationship, product development, and demand management are nominated as the rank third, fourth, and fifth respectively. For the sub criteria, supplier involvement in product design has high local weight if compared to other sub criteria in this study. Meanwhile, pay the obligation to supplier has the highest global weight so that the creative industries should have proper control to manage the cash flow. Managing the cash flow is part of the capability to sustain the performance of supply chain management practice. Thus, it depicts that creative industries expend more effort to reduce the risk compared to other aspects. The scale of business is another reason to keep their business on the track.

5. Conclusion

Creative industries are one of emerging sectors and they provide national competitive advantage. As a part of strategy, the practice of supply chain can help the company to sustain their business. This study is conducted to identify the issue in managing supply chain for creative industries by using AHP. This study focuses on several dimensions in the practice of supply chain management with different criteria and sub criteria. The empirical result shows that the most important criterion is the cash flow, while the supplier relationship is the second most important criterion. In addition, customer relationship, product development, and demand management are the third, fourth and fifth important criteria, respectively. Furthermore, the sub criteria of product development is the largest local weight

among sub criteria, while the global weight of pay the obligation to supplier is the largest compare others. This means that managing the cash flow should be prioritized by the creative industries with the aim to improve their performance.

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