

## SUPPLY CHAIN MODEL DESIGN FOR “WEDANG UWUH” SMALL AND MEDIUM ENTERPRISE (SME) IN DAERAH ISTIMEWA YOGYAKARTA (CASE STUDY ON PROGRESS JOGJA SME)

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### ABSTRACT

*“wedang uwuh” as the icon of Bantul region, Daerah Istimewa Yogyakarta were the legacy that needs to be conserved. This research was aimed to model the supply chain on Small and Medium Enterprises (SMEs) of “wedang uwuh” on one of the SMEs supervised by the Department of Industry, Trade and Cooperative of Bantul, DIY. Model designed using empirical data model that collected by interviewing the stakeholders. Moreover, by this supply chain model, it is obtained to develop and provide clear the flow diagram of of supply chain for SME and in addition to solve the common problems arisen on SMEs, especially “wedang uwuh” SME.*

*Key words: “wedang uwuh”, SMEs, SCM, Modeling.*

### 1. INTRODUCTION

By the year of 2015, Indonesia will be facing ASEAN Economic Community (AEC) (Republika, 2014). ASEAN will be the open market based on production, where the product, service and investment flows will be free flowing as the ASEAN deal. This would create highly competitive not only domestically or locally on a country, but also regionally in South East Asia.

The development of SME (Small and Medium Enterprise) is the elaboration of the third pillar of AEC Blueprint that consist of action plan and time target for 2015, with the result that SME is considered one of the sector to drive the equivalent economics in the area. ASEAN considers four main priorities related to SME, which are accelerating the development of SMEs; strengthen the ASEAN SMEs competitiveness and dynamics by fascilitating access to information, market, human resources and expertise, finance and technology; strengthen ASEAN SMEs to solve macro economics problems, financial difficulties, and trade liberalization challenges; and also to elevate the SMEs contribution for overall economic development and ASEAN as territory development (Witjaksono, 2013).

AEC can be treated as a market opportunity or as a thread, especially for SMEs in Indonesia. One of the SME that start to grow and are targeted to ‘go international’ is the SME of ‘Wedang Uwuh’ product. In Daerah Istimewa Yogyakarta (DIY) Province, ‘Wedang Uwuh’ SMEs product started to be known by the society. Evenmore, ‘wedang uwuh’ is becoming the icon of Bantul region, DIY province. Department of Industry, Trade and Cooperative of Bantul, DIY tried to introduce and develop this traditional drink in order to be able to compete with modern drinks (Republika, 2014).

The word “wedang Uwuh” comes from the Javanese language “wedang” and “Uwuh”. “Wedang” means beverage/drinks and “Uwuh” means trash (especially foliage/leaves trash), so if it is translated, “wedang uwuh” means beverage made of foliage. “Wedang Uwuh” is an original culinary from Imogiri Bantul, Yogyakarta, Indonesia, which must be preserved. Besides of its good taste, “wedang Uwuh” did not have any side effects so it is safe for consumption and contains some properties such as aroma therapy, overcoming fatigue, restoring stamina and as a high anti-oxidant. This drink is a mixture of “secang” woods, ginger, nutmeg leaves, cinnamon leaves, twigs cloves, clove, clove leaf. “Wedang

Uwuh” are usually sold near the tombs of the kings at Imogiri and sold in plastic packaging bonded with wax (Rosi, 2012).

The classic problems of SMEs in Indonesia also found in ‘wedang uwuh’ SME, which are unattractive packaging, not good enough marketing, and no special distribution channel. Moreover, wedang uwuh SME also having difficulties with the raw material supplier. Unstable price of raw material, and especially for a rainy season, it is difficult to find raw material. Thus will leads to low product value and product prestige for customer. Supply chain management (SCM) would be able to overcome these issues because of SCM is a group of activities and related decisions to integrate supplier, manufacture, warehouse, transport service, retailer and consumer efficiently (Ling Li, 2007). Furthermore, product and service could be distributed in precise quantity, time and location to minimize cost for fulfilling customer needs.

Current quantity of SMEs in Indonesia is 55.2 million with a considerable contribution, which is 57% of Indonesian Gross Product Domestic (GDP) (Hasan, 2013), so that SMEs need to prepare the strategy to survive and develop to face AEC. Government, businessman, and Indonesian people were expected to actively collaborate in elevating competitiveness of Indonesia. The strategies that can be applied were focusing on to the potential, regional, economic development, collaboration of rule and policy between departments, the right capacity building for SMEs key persons, and applying SCM (Republika, 2014). Supply Chain implementation could be conducted firstly by generating supply chain model, in order to direct the objectives towards the solution and integration of all components. Every SME has specific structure. Wedang uwuh SME also has its own structure. Because of that, this research will provide SME wedang uwuh with the supply chain model for SMEs.

Researches on the development of supply chain model has been widely applied in Indonesia as well as in various countries. In Indonesia, the supply chain model of small business products has developed for batik products by taking a case study in Kampung Batik Laweyan Surakarta

(Retnawati and Sukesni, 2010). There are four models of the supply chain that can be used as a reference for modeling the supply chain in the SME. Another method is by conducting SCOR (Supply Chain Operations reference) to map the supply chain of “songket” SMEs in Palembang (Sharif, 2012).

The study is conducted not only in Indonesia, but also in a variety of countries. One example is the symposium held in Taipei, Republic of China, in which discussed the cases of the application of SCM in SMEs in ASIA (Goh, 2002). The countries that are involved in this discussion were the country of Singapore, Fiji, India, Indonesia, Republic of Korea, Malaysia, Nepal, the Philippines, and Sri Lanka. The main challenge identified from the conclusions of the symposium is the low awareness of good SCM practices in SMEs. SMEs are slow in implementing SCM, SCM in SMEs is limited and localized, SMEs have a low level of use of IT for SCM, and SMEs want support from the government for SCM development.

Continued with the research conducted by China et al (2012) revealed how the adoption of SCM in SMEs conducted in the country of Malaysia. At the beginning, SMEs in Malaysia do not have enough knowledge about SCM and doubted the benefits may arise from the SCM, such as that SCM can move in an extraordinary change in business processes toward a positive outcome, better service quality, cost reduction and efficiency. This resulted in the needs and challenges of the implementation of SCM in Malaysia.

The challenges in the implementation of SCM in SMEs due to the operating capacity of SMEs are small and the structure form is sensitive, so the possibility of mistakes in the SCM deviation will result in large losses. This is reflected in studies conducted in the country of Turkey, where the number of SMEs in Turkey is high, but low national income means there is a low efficiency. Therefore, Çalipinar (2007) invented a theoretical model of SCM for SMEs that is able to meet the needs of SMEs in Turkey.

To answer the challenges in the implementation of SCM issues in SMEs, it is important to assess how to design a proper supply chain model in accordance with the

needs of “wedang Uwuh” SMEs, and refer to models of existing supply chain. There have never been previous studies on the design of supply chain model in “wedang Uwuh” SMEs. Therefore, the research study will be conducted in Progress Jogja SMEs, one of Yogyakarta’s SMEs which has stood since 2009 and still continues to exist and evolve with various kinds of its “wedang Uwuh” beverage products (original, bags, and instant). It was all done for the purpose of SCM to provide real solutions in synergies of the integration of all components in the system, so that the efficiency and effectiveness can be obtained for the future progress.

## **2. THEORETICAL BACKGROUND**

### **2.1. The Definition of Micro Small and Medium Enterprises**

According to the bill of SMEs, micro enterprises are enterprises owned by citizen, having at most 5 employees, a net worth of Rp 50 million excluding land and buildings, business and / or maximum annual sales of Rp. 300 million. Based on the definition of the Ministry of Cooperatives and SMEs, small businesses are the economic activities carried out by individuals or households and an agency that aims to produce goods or services for commercial trade and have a sales turnover of one billion dollars or less. According to the bill of SMEs, small businesses are citizen-owned businesses with 6-19 employees except the service and trade sector, a net worth of USD 50-500 million and / or annual sales of USD 300 to 2.5 billion and stand alone.

The definition of medium-sized enterprises by the Ministry of Cooperatives and SMEs are the economic activities carried out by individuals or households and group of people/agency that aims to produce goods / services for commercial trade and have a sales turnover of one billion dollars. Meanwhile, according to the bill of SMEs, medium-sized business is a business that has 19-100 employees, a net worth of Rp 500 million to 10 billion and / or annual sales of Rp 2.5 to 50 billion, stand alone, and has legal entity with the majority of citizen ownership.

Development of SMEs in Indonesia has been carried out by the Office of the State

Minister of Cooperatives and Small and Medium Enterprises (MSME State Ministry). Besides the State Ministry of MSME, other agencies such as Department of Industrial, Trade and Cooperatives, Minister of Finance and Bank of Indonesia also perform the function of the SMEs development in accordance with their respective powers. The development of a conducive business environment for cooperative and Micro, Small and Medium Enterprises (MSME) is intended to improve the competitiveness of KUMKM by creating vast business opportunities and a healthy market mechanism.

### **2.2. The Concept of Supply Chain Management**

According to Chopra and Meindl (2007), supply chain has a dynamic nature but involves three constant flows, the flow of information, products and the flow of money. The main goal of any supply chain is to meet customer needs and generate profits. According to Ling Li (2007), Supply Chain Management (SCM) is a set of activities and decisions that are interrelated to efficiently integrate suppliers, manufactures, warehouse of transportation services, retailers and consumers. With the expectation that goods and services can be distributed in the exact amount, time and location to minimize the cost to meet consumer needs.

There are two main strategies in the emergence of supply chain management, which are efficiency and responsibility (Liao and Hsieh, 2010). Efficiency is intended to reduction in operating costs, and responsibility is as a quick reaction to satisfy consumer demand. Gunasekaran et al. (2008) explained that the need to develop a solution of effective cost for the organization will be more flexible and responsive to changes in consumer demand. The challenge ahead is how to simultaneously reduce operating costs and improve service to consumers.

In other words, Supply Chain Management (SCM) can be defined as the integration of all components of the production and supply processes, which are material flow, information flow, and cash flow that starts from the process of obtaining the

raw materials to deliver products to end users at a right time, right price, and in the lowest possible cost.

### 2.3. Implementation of Supply Chain/ Supply Chain Management in SME

Application of Supply Chain Management (SCM) in SMEs is a challenge because SCM requires a serious integration of the whole process, for example, one of the success sign of SCM is a company must share information about the stock of raw materials, production and promotion estimation, as well as to customers and suppliers planning. For some companies this is a difficult thing, because the fear of company secrets will be known by competitors, this can result in the lack of supply chain effectiveness. SMEs have limitations in implementing SCM, the limitation is the lack of expertise in the management of supply, the high level of competition in the supply chain, lack of cooperation in the SCM, the lack of knowledge about customer management, distance with customers, suppliers and the distance to the investment needs in the field of IT. In essence, in implementing SCM, SMEs have limitations in resources, how they should protect themselves from the competitive challenge, especially from the domination of big companies and they did not want their control functions of the assets is limited (Chen et al, 2004).

The way SMEs treated the importance of SCM is different, in other words SMEs do not consider the supplier as a colleague, as perceived by a large company. But feel the presence of the supplier as a process that protects them from the lack of production. This is why SMEs do not have the bargaining power with the big companies. To increase the bargaining power, vertical supply chain is required (Udomleartpresert et al, 2003).

The purpose of the model in Figure 1 is to maximize bilateral profits and increase the SMEs bargaining power with suppliers (Udomleartpresert et al, 2003). SCM offers the advantages of vertical integration by not describe about the cost (Calipinar, 2007).

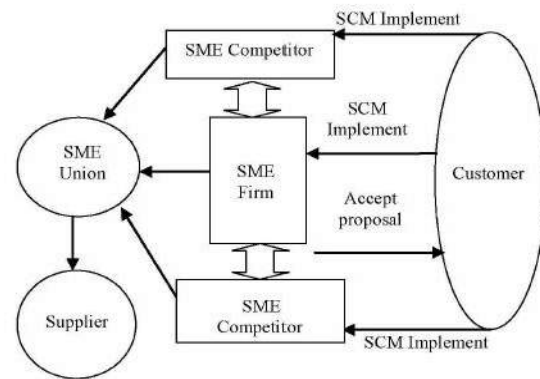


Figure 1. Vertical Chain Management Model

Some research has been done regarding the implementation of Supply Chain at SMEs. Champman (2000) offered five reasons for conformity between SCM and SMEs, the reasons were, SMEs had a critical relationships and business decisions that might affect the competitiveness of the supply chain thoroughly, difficulties in restructuring business, an opportunity for the development of SCM with the growth of the organization, ERP as business solutions, and the needs of Information Technology.

In his research, Quayle (2003) identified SCM trends in UK's SMEs. The first findings include how SMEs can improve the leadership, strategy and reduction of waste. E-commerce will help to transfer information to and from SMEs and SMEs need to shift the direction toward collaboration between elements. Gunasekaran and Ngai (2003), proposed a framework for SMEs in developing its logistics operations. Campbell and Sankaran (2005) proposed an inductive framework to improve supply chain integration through increased participation of suppliers.

### 2.4. Conceptual Model of SCM in SMEs Field

In 2007, Calipinar proposed a theoretical model in supply chain management, which is removed from the problems of SMEs that occurred in Turkey. With all the limitations of SMEs in implementing SCM, Calipinar adapting Vertical Chain Management Model introduced by Udomleartpresert et al, in 2003.

Caliper (2007) divided theoretical models into two stages. Stage-1 illustrated the supply chain on the supply and production

centers and stage-2 illustrated the supply chain on product and customer center. On Supply-production (stage-1), the model consisted of the supply center, distribution center and production center, which are integrated with SMEs' cooperatives. Product-Customer center (stage-2), the model consisted of a large supplier, retailer and customer center. Customer center worked to serve local customers, both domestic and abroad. The model also illustrated the flow of material and information flow that occurred in the supply chain. The theoretical model of the SMEs supply chain can be seen in Figure 2.

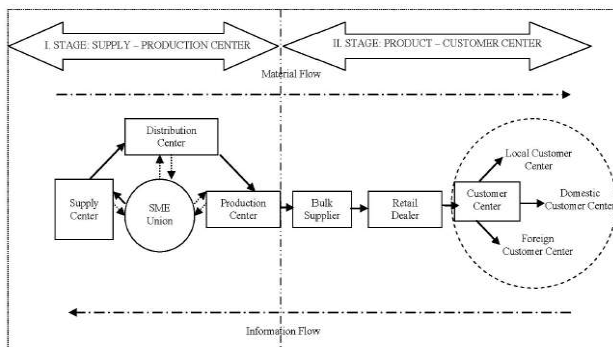


Figure 2. SME Supply Chain Theoretical Model

Based on previous studies, this research will focus on the design of the supply chain model of “wedang uwuh” SMEs, which is the cultural heritage of Yogyakarta Special Region. With the “wedang uwuh” supply chain model, it is expected to increase the good of knowledge in the field of Supply Chain Management which were excavated from the typical Indonesian local wisdom.

### 3. RESEARCH METHOD

Data collected from the exploration of existing models compared with the results of the investigation through interviews with some of the parties associated with the SME. It will be used as the basis for designing the model of “wedang uwuh” SCM. The model is then verified and validated by using expert judgment and face validation.

### 4. RESULT AND DISCUSSION

Figure 3 is a model that represents the flow of the supply chain that happens to a manufacturer of wedang uwuh “Progress Jogja”, which are an SME assisted by Department of Industry, Trade and Cooperatives in the region of Bantul, Yogyakarta.

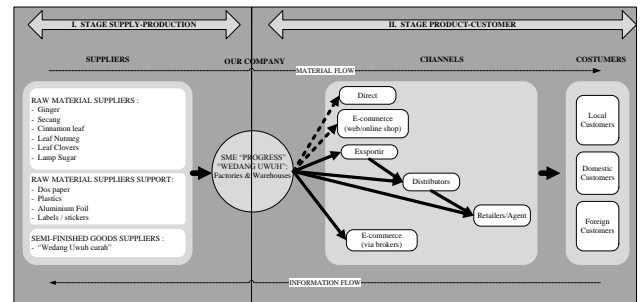


Figure 3. “wedang uwuh” SMEs Supply Chain Model

This model is divided into two stages. Stage-1 (supply-production) and stage-2 (product-customer). Stage-1 (supply-production) illustrates the supply chain from supplier to manufacturer (factory and warehouse), stage-2 illustrates the supply chain from the product to the customer. In stage 1, the supply chain consists of three suppliers, which are:

1. Raw material suppliers (ginger, secang, cinnamon leaf, nutmeg leaf, clovers leaf and lamp sugar)
2. Raw material suppliers support (dos paper, plastics, alumunium foil, labels/sticker)
3. Semi finished goods which called “wedang uwuh curah”.

All supplies flow of the stage-1 is done without intermediaries. The production process of raw materials and semi-finished goods is carried out in two places of production. The first is in Sleman, in a special area which produces “wedang uwuh” in boards and bags. The second is in Bantul who produces original, bags, and instant “wedang uwuh”.

In the product-customer (stage-2), to distribute the products to consumers, SMEs using two types of distribution (with and without intermediaries). For flow distribution

without intermediaries, "wedang uwuh" SMEs sell their products directly to consumers through two ways: direct sales and through an online store that they manage themselves.

For flow distribution with intermediaries, "wedang uwuh" SMEs using four types of distributions, namely:

1. Factory/Warehouse-Exportir-Distributor-Retailers/Agents-Customers.
2. Factory/Warehouse-Distributor-Retailers/Agents-Customers.
3. Factory/Warehouse-Retailers/Agents-customer.
4. E-commerce with broker

## 5. CONCLUSION

This SCM modeling presents about supply flow and information flow which occurred in SME that produces beverage product which called "wedang uwuh".

Problems which occurred in SMEs such as in functional business process, and other problems such as material supply, because of has not distribution process for it self, fluctuation material price, and specific to a particular season, such as during the rainy season there are difficulties in obtaining the raw materials.

With the existence of this study, it is expected SCM (Supply Chain Management) will be able to answer these problems and there will be further research to answer the basic question of SMEs particularly in SMEs "wedang uwuh", so that goods and services can be distributed in the amount, time and exact location to minimize the cost to meet consumer needs, as well as the popularity of "wedang uwuh" as a traditional special beverage that can compete with modern beverages.

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