SUFFICIENCY ECONOMY: THE SOLUTION FOR KEY SUCCESS IN SUPPLY CHAIN MANAGEMENT

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ABSTRACT
Stability in business and confrontation of global economy crisis has become a major issue nowadays. Globalization has a direct impact on changing in worldwide business environment. Supply chain management is therefore brought into several business sectors to overcome such problem. However, an important factor of supply chain management concept is a relation between partners in supply chain. It is therefore for any decisions made to concentrate on a concept of sufficiency economy that has been promoted widely in the past few years. The objective of sufficiency economy concept is to keep all business partners closer in their relationship and build trust among individual.

KEYWORDS
Supply Chain Management, Sufficiency Economy, Profit Maximization

1. Introduction
This paper attempts to describe how the sufficiency of economy contributing to a concept of supply chain management (SCM). The sufficient economy deals with three properties such as sufficiency consistent with the potentiality of individuality and society; reasons behind, and face adversity. However it may existed by several conditions (i.e., well-inform, circumspect, careful and moral principle). SCM has been encountered by several problems such as distribution network configuration on suppliers, facilities, distribution strategy, inventory management, or in particularly Information. A detailed description on each problem illustrated as follows:

- Distribution Strategy: Centralized versus decentralized, direct shipment, Cross docking, pull or push strategies, third party logistics.
- Information: Integrate systems and processes through the supply chain to share valuable information, including demand signals, forecasts, inventory and transportation etc.
- Inventory Management: Quantity and location of inventory including raw materials, work-in-process and finished goods.

In order to describe more clearly on profit maximization, using the concept of sufficiency economy will make supply chain easier to be managed by considering revenue per unit. This revenue per unit is a success of SCM among partners. Additionally, the steady state of economy and the ability to face with economics crisis are occurred according to a changing in global economy referred to as "Globalization." Globalization may have an impact on a changing in business environment worldly that cause SCM more difficult to develop. In terms of SCM,

2. Concept of Sufficiency Economy
Sufficiency means something that is adequate for someone according to individual society. It should not be less or more than expected and should not take advantage of others. On the other hand, reasoning means any decision made for doing needed to be done with a predetermined plan. Reasoning is considered to be made according to relevant factors and implications. Furthermore, resistant is referred to as a preparation of preventing something in the future that may occur. Those changes occurred from such impact are found from external or internal environment.

Therefore, sufficiency is occurred in association with 2 vital factors:

- Knowledge is defined as (i) facts, information, and skills acquired by a person through experience or education; the theoretical or practical understanding of a subject, (ii) what is known in a particular field or in total; facts and information or (iii) awareness or familiarity gained by experience of a fact or situation. Philosophical debates in general start with Plato's formulation of knowledge as "justified true belief". There is however no agreed definition of knowledge, nor any
prospect of one, and there remain numerous competing theories [6].

- Ethics is a major branch of philosophy, is the study of values and customs of a person or group. It covers the analysis and employment of concepts such as right and wrong, good and evil, and responsibility. It is divided into three primary areas: meta-ethics (the study of the concept of ethics), normative ethics (the study of how to determine ethical values), and applied ethics (the study of the use of ethical values) [6].

3. Problem Solving of Each Firm with Philosophy of Sufficiency Economy

Any decisions made should follow the potentiality of all activities started from production, human resource, financial, and marketing. Ability in business competitive advantage will further advance a maximum profit. For operational decisions, any planning should be reasonable with a consideration of related factors such as costs or revenue. Considering costs can be ranged from raw materials, man power, machine, tool, factory, fixed costs. Such factors have limitations in resource reallocates and revenue by pondering a trend of future implications with being more elaborate and does not deceive other people. Therefore, one needs to retain knowledge, elaboration, ethics, sincerity, stringency, diligence.

4. Profit Maximization Base on Sufficiency Economy

A company that determines a profit level under a consideration in parallel to sufficiency economy \( \left( \prod_i^* \right) \) needs to obtain an approval from stakeholders in annual meeting. It needs to be done accordingly in an official agreement of business partners with customers who purchase a product or service from a company. Considering a concept of sufficiency economy, this company needs to develop trust among each partner sincerely, shares information, allocates profit and benefit fairly, or advocates in developing business potentiality. The business partners would have to share the similar goal and objective to gain a required level of profits under the concept of sufficiency economy \( \left( \prod_i^* \right) \).

Once, individual partner clings on the philosophy of sufficiency economy, a possibility of business gain will be much more than expected and sustain with continuation in a market. Both parties may gain profit and business competitive advantage in supply chain. Therefore, a system of economy in the supply chain may sustain and be strengthened provided that sufficiency economy is developed.

From the rational behind of sufficiency economy concept, this research study proposes the mathematical model by assuming 3 hypothesis statements.

Hypothesis 1: Business in supply chain produces a product with a combination of monopoly and competitiveness in conjunction with an agreement of business partners.

Hypothesis 2: Production firm or business in supply chain must gain a maximum profit, considering a commitment of supplier and company’s profits.

Hypothesis 3: Profit level is done according to an approval of company stakeholders in annual meeting.

5. Model of Profit Maximization in Supply Chain

5.1 Model: Before Holding on Efficiency Economics

This model is relevant to the forth step of sufficiency economy that is thought to be “a win-win situation.” It is hypothesized that if individual partners gain a maximum profit, then a cooperation and coordination among the partners will be increased substantially. Therefore, performance in supply chain management will be enhanced according to profit maximization.

Market

Every firm in this supply chain produce his good in monopolistic competition market.

Firm in Supply Chain

There are “n” firm In this supply chain, firm n sale final good to consumer and firm 2,...,n-1 sale intermediate good to another firm in supply chain and firm i use input from i-1 except firm 1 who produces raw materials.

\[
\prod_i = R_i - C_i
\]

Where \( \Pi_i \) is profit of firm i (i= 1,...,n)
\( R_i \) is Total Revenue of firm i
\( C_i \) is Total Cost of firm i
\( \tau_n \) is Total Fixed Cost of firm i ; \( \tau_n \geq 0 \)
\( \Phi(q_i) \) is price of product \( i \)
\( q_i \) is product of firm \( i \)
\( n \) is the firm who produce final good for consumer

1, ..., (n-1) are the firm who produce intermediate good and/or raw material in supply chain

Such that Total Revenue Function (\( R \)) and Total Cost (\( C \)) function of firm \( i \)

\[
R_i = \Phi_i(q_i)q_i, R_2 = \Phi_2(q_2)q_2, ..., R_n = \Phi_n(q_n)q_n \quad (2)
\]

\[
C_i = \Psi_i(q_i) + \tau_i, C_2 = \Psi_2(q_2) + \tau_2, ..., C_n = \Psi_n(q_n) + \tau_n, \quad (3)
\]

Hence Total profit of firm “\( n \)” is

\[
\text{Firm 1: } \Pi_1 = \Phi_1(q_1)q_1 - \Psi_1(q_1) + \tau_1
\]

\[
\text{Firm 2: } \Pi_2 = \Phi_2(q_2)q_2 - \Psi_2(q_2) + \tau_2
\]

\[
\text{Firm } n: \Pi_n = \Phi_n(q_n)q_n - \Psi_n(q_n) + \tau_n \quad (4)
\]

**Profit Maximization**

Before cooperative as partnership by holding on sufficiency economy, each firm in supply chain has maximized profit individually. In monopolistic competition market, individual producers will gain a maximum profit under \( MR = MC \) in a short term of profit maximization.

Problem of each firm is

\[
\text{Maximize } \Pi_i = R_i - C_i \quad (5)
\]

First order condition (FOC) with respect to \( q_i \)

\[
\frac{\partial \Pi_i}{\partial q_i} = \frac{\partial R_i}{\partial q_i} - \frac{\partial C_i}{\partial q_i} = 0 \quad (6)
\]

\[
\frac{\partial R_i}{\partial q_i} = \frac{\partial C_i}{\partial q_i}
\]

\[
MR_i = MC_i \quad (7)
\]

This means the changing of price will effect to firm \( i \)'s profit.

To consider necessary condition, firm \( i \) in supply chain be able to maximize profit at marginal revenue equal to marginal cost by himself which they ought to get negative profit or loss.

**5.2 Model: After Holding on Efficiency Economics Profit Maximization**

After cooperative as partnership by holding on sufficiency economy, each firm and supplier in supply chain has a maximum profit for one firm rather than one plant.

Problem of each firm is

\[
\text{Maximize } \Pi_i = R_i - C_i \quad (8)
\]

Assuming firm \( i \) has 2 supplier 1, 2

When firm 1 maximize profit by treat firm 1, 2 as partnership

Hence:

\[
\text{Max } \Pi = R_i(q_1, q_2) - C_i(q_1, q_2)
\]

First order condition (FOC) with respect to \( q_1, q_1, q_2 \)

\[
R_1(q_1, q_2) - C_1(q_1, q_2) = 0 \quad (9)
\]

\[
R_1(q_1, q_2) - C_1(q_1, q_2) = 0 \quad (10)
\]

\[
R_2(q_1, q_2) - C_1(q_1, q_2) = 0 \quad (11)
\]

From considering necessary condition, firm \( i \) have to think of firm 1 and 2 for maximize profit as every firm do in supply chain. Therefore, the aforementioned model under a concept of sufficiency economy in company with business partner agreement will fully maximize profit in production, resource allocation, information sharing, and revenue of supplier and company illustrated in Equation (8), (9), and (10). These equations are different from the case of no agreement made for producers that have less efficiency of production. The producers may lost revenue and go bankrupt resulting in encountering a problem of economy recession.

**6. Conclusion and Recommendation**

In any economy system under supply chain consideration may have a variety of products or services accordance with individual business policy. Mostly, many companies do not pay close attention to develop a close relationship in becoming business partners. By doing so, this will strengthen a cooperation between both parties and can extend the cooperation to 2nd, 3rd, or in deeper levels of
suppliers/partners. The ultimate goal of such cooperation among business partners is to produce a product with a minimum cost. However, the minimum cost may cause a level of quality deteriorated in a long run. Meanwhile, a buyer may still use a purchasing policy to gain a profit in a short run resulting in the supplier that offers a low price unable to grow in the market. This issue will have a direct affect on high production cost, and cannot offer a lower price in the long run. Using the policy of a buyer in conjunction with sufficiency economy concept may realize a positive result due to the buyer in supply chain would receive a higher quality level of raw materials from its suppliers. It is due to the fact that the buyer made a practical decision to buy from the suppliers, because they offer a reasonable price that leads to an appropriate level of profits made for sustaining in economy.

References