

# Initiative Strategies on How to Increasing Value Add of the Recycling Business

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**Abstract**—The current study was the succession of a previous study on value added of recycling business management. Its aims are to 1) explore conditions on how to increasing value add of Thai recycling business, and 2) exam the implementation of the 3-staged plan (short, medium, and long term), suggested by the former study, to increase value added of the recycling business as immediate mechanisms to accelerate government operation. Quantitative and qualitative methods were utilized in this research. A qualitative research consisted of in-depth interviews and focus group discussions. Responses were obtained from owners of the waste separation plants, and recycle shops, as well as officers in relevant governmental agencies. They were randomly selected via Quota Sampling. Data was analyzed via content analysis. The sample used for quantitative method consisted of 1,274 licensed recycling operators in eight provinces. The operators were randomly stratified via sampling method. Data were analyzed via descriptive statistics frequency, percentage, average (Mean) and standard deviation. The study recommended three-staged plan: short, medium, and long terms. The plan included the development of logistics, the provision of quality market/plants, the amendment of recycling rules/regulation, the restructuring recycling business, the establishment of green-purchasing recycling center, support for the campaigns run by the International Green Purchasing Network (IGPN), conferences/workshops as a public forum to share insights among experts/concern people.

**Keywords**—Strategies, Value Added, Recycle Business.

## I. INTRODUCTION

**S**UGGESTED by some thinkers, the problems facing Thailand are a result of a dynamic struggle of technology, communication, telecommunication, including the forceful competition in trade. The struggle between these forces results in the globalization of, for instance economic activity [1]. The dynamics give Thais wealth, health, and extravagant lifestyle. However, the lifestyle of the wealthy is the overriding threat to the national resource reservation [2]. One of the critical problems Thailand critically facing is the environments. The expense of over use of natural resources causes the country trade deficit due to over imported amount of natural materials for business and industry. Waste separation/recycling could be a possible solution and considered as one of the four urgent matters (i.e., unemployment, poverty, equality of income distribution, overuse of natural resources) in the National Agenda to be taken fast action for improvement. Responding to the policy, national campaign called 4Rs (i.e., Reduce, Reuse, Reject,

Recycle) was launched for resource preservation as proof of an effort from the government [3]. Strategies on how to increase value added of the recyclable waste earn public and private interest; however, the inefficient law enforcement, the lack of cooperation among the governmental units, as well as the mismatched governmental supports to the need of recycling business obstruct the initiation of the strategies. The implementation of the strategies, if made, would be beneficial to the business, strengthen national economy, and raise the quality life of Thais.

The former study *Increasing Added Value of Recycling Business Management: A case of Thailand* was conducted by Siraphatthada (2010) [4] explored 1,079 licensed recycling operators in 8 provinces in the central part of Thailand, including an informal interview and focus group discussions with key business owners in the garbage separation, recycle shops, the recycling community as well as relevant government agencies, about problems/obstacles of the recycling business, and supportive roles of the government units. The study recommended the implementation of the three-phased strategies to be benefit for recycling business: 1) short-term (1 year) is to reduce costs of logistics and labors, 2) medium-term (2-3 years) is to strengthen business management via the establishment of the recycling business center to maintain communication for mutual understanding and cooperation between the entrepreneurs and the locals, and 3) long-term (5 years) is to search for outbound markets for the import/export of the product made by recycled waste. Wisuthikarn (2008) agreed that the establishment of the center as the access to share enterprises' information is financially benefit [5]. He suggested that the inclusion of shipping transportation in a strategic plan to promote recycling business could lower the cost and lead to better negotiation of price. He continued that the benefit might not be for retail traders but only for large recycling business. From the studies mentioned, the researcher has learned that there might be no one strategy benefit to all. Also she learned that both private and public recycling business including local recycling communities has their own expertise, experiences, and information circulated in a limited pool of their own people. The share of these could broaden insights and experiences embedded in business as processes or practices (e.g., how to increase work performance, to raise competitive advantage, to create innovation, to share lessons learned). The focus of the share is on the management of knowledge as a strategic asset and enables the business to learn among others.

Resource shortages caused by the world wars, and other such world-changing occurrences greatly encouraged

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recycling [6], Levels of metals recycling are generally low. In 2010, the International Resource Panel, hosted by the United Nations Environment Programme (UNEP) published reports on metal stocks that exist within society [7] and their recycling rates [8].



Fig. 1 Bales of crushed steel ready for transport to the smelter



Fig. 2 Bales of crushed plastics ready for transport to the smelter



Fig. 3 Bales of crushed plastics ready for transport to the process

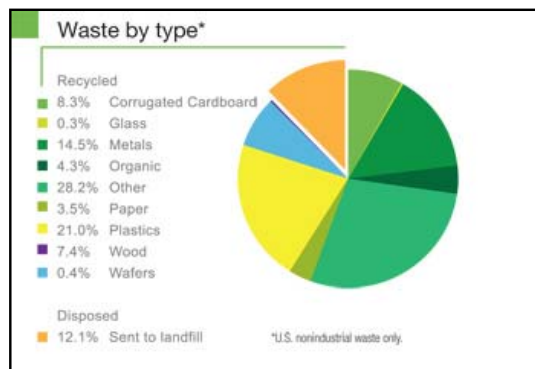


Fig. 4 Waste was recycled in 2011

TABLE I  
NUMBER OF WASTE

Waste Type	Numbers (tons)
Bio-organic fertilizer and liquid fertilizer	200,000
Waste-recycling	2,950,000
- Paper	914,500
- Glass	737,500
- Plastic	354,000
- Metals	855,500
- Aluminum	88,500
Total	3,150,000

Source: 2009 Pollution Report by Pollution Control Department, The Ministry of Natural Resources and Environment [12]

The number of waste both from household and industry has been rising due to number of factors, for instance increasing population, national economic growth, and industrial promotion. The waste to be recycled is collected mostly by local recycling operators (i.e., transferring of solid waste from the point of use and disposal to the point of treatment). As shown in Table I, the highest amount of waste is paper, metals, glass, plastic and aluminum respectively. However, the number of waste made available for recycling process is few. The need in recyclates is increasing due to vigorous campaigns run by government and business sections.

Recycling business is rapidly growing. Thanks to the fact that there are few number of recycling operators that operate with well-structured and complete recycling treatment, the business is full of prosperity with being success for economic well-being [8]. In addition, the recycling business is perceived socially as ungracious by most people, and that keeps the share of recycling market/business low and uncompetitive. Interestingly, the demand for reused/recycled product in Thailand is rising. The number of waste (i.e., paper and plastic) made available for recycling/reuse is however lower than the demand. Respectively, 48 percent and 22 percent of the wasted paper and plastic are made used. It is clearly seen that a great market share of recycling (paper and plastic) business has high chance of success and would possibly bring great benefit.

Currently the amount of recycling operators (i.e., informal waste collectors --waste pickers, junk men -- collecting recyclable materials by foot or in pushcarts, tricycles, and pickup trucks; licensed waste collectors – full-loop recycling

companies/organizations) is growing at rapid rate. They do curbside collection of mixed waste, in which all recyclates are collected and mixed in with the rest of the waste. The operators are different in administrative operation, budget, and waste management (i.e., collection -- to collect recyclates from the general waste stream; sorting -- automate process, removing by hands). To be standardized, there should be some form of organizational formats among the operators [9] including cooperatives, associations, companies, unions, and micro-enterprises to share mutual interest and to form partnership with business/government to increase selling power [10].

The strategic plan is worth to consider to be put in practice and, possibly, to make value added contributions to the recycling business as well as waste management. The plan would elicit expertise, experiences and information of individual businesses. Thus, the operation of the entrepreneurs, local recycling communities, and governmental units are strengthened, raise life quality and health of Thais, and better the national economy. The businesses are seen as an enabler of organizational learning. For further studies, knowledge management (i.e., a range of strategies and practices used in an organization to identify, create, represent, distribute, and enable adoption of insights and experiences learned in the business) is recommended to be employed. Interviews are a qualitative data collection tool good to be used. Selection of sampling provinces which possess a number of appropriate factors to be learned for Best Practice helps the future studies to make great contribution to management literature. Undertaking the studies strategies the private and public recycling business may have a pool of available knowledge content in the development/provision of management, facilitate managing innovation, leveraging the expertise of people across the sectors, solving wicked problems, as well as raise the level of trust among the sectors.

## II. RESEARCH METHODOLOGY AND RESULTS

This policy participation action research combines quantitative and qualitative methods in both data collection and analysis procedures. For qualitative data collection/analysis, 50 participants including recycling operators (licensed by Wongpanit Waste Separation Plant and by the Department of Provincial Administration) and government units in provinces were selected via stratified random sampling with a confidence level of 0.95 (Hair,2006: 161) [11]. For quantitative data collection, questionnaires were developed and trial out with a group of 30 recycling entrepreneur, who did not participated in the study. The measure coefficient of reliability of the questionnaires ranges from 0.7 up to standards set. Frequency, percent value, mean scores, and standard deviation were employed for analysis. The sampling includes were local operators in the provinces located in the upper part of the central country.

## III. FINDINGS

### A. Public Attention

Waste recycling gains attention from households. More attention was paid to sorting waste and making them ready for transferring to the place for recycling treatment. By means of the cooperation, the cost of separating recyclable materials from the rest of the waste is lower. The selling price of recyclable waste is satisfactory, and that becomes a motive for households to take part in recycling. Besides, collections are done by waste collectors at the point of residential areas with punctuality and a professional manner (e.g., registered list of customers). This provides public convenience and reduces the amount of waste sullyng the sidewalks.

### B. Obstacles

Licensed recycling operators are facing administrative costs, which keeps rising due to a poor accounting system, hard to access business information (e.g., sources of recyclates, advanced technology), and shortage of loans for short-term cash flow.

### C. Poor Mutual Cooperation

Mutual cooperation between recycling operators licensed by Wongpanit Waste Separation Plant and those by the Department of Provincial Administration is rate due to high competition (i.e., information is confined to certain operators so that few could access the sources of recyclates).

### D. Exceeding Number of Relevant Official Units

The exceeding number of government units causes the complexity of the liaison (i.e., response with seriousness and sincerity but do so with cumbersome and unwieldy administrative processes) [6].

### E. Strategic Actions

A 3-phased strategy was recommended: a) the short-term (1-year plan) is to develop a quality business system in terms of finance (e.g., efficient accounting system, low-cost logistics, low-interest/long-term loans for investment and cash flow), b) the medium term (2-3 year plan) is to support the use of advanced technology for waste separation/recycling, to create a sense of trust and teamwork among recycling operators in regions as part of the business community, to establish a center both for retraining/upgrading skills needed in the recycling business and for social structures (e.g., mutual cooperation among shared-interest operators, elicits for technical elites needed in the recycling business), c) the long-term (5 year plan) is to expand the domestic market abroad for goods/products made of recycled materials, to get the government assistance in terms of R&D for advanced technology/machinery development.

## IV. CONCLUSION

The study provides recommendations for Thai government units to implement the three-staged plan: short, medium, and long terms. The recommendations could be used for the foundation for strategic implementing of the plan. They

include the development of logistics, the provision of quality market/plants, the amendment of recycling rules/regulation, the restructuring recycling business, the establishment of green-purchasing recycling center, and support for the campaigns run by the International Green Purchasing Network (IGPN), conferences/workshops as a public forum to share insights among experts/concern people.

It also advised that Thai government pay attention to recycling to process materials (waste) into new products to prevent waste of potentially useful materials, reduce the consumption of fresh raw materials, energy usage, and air/water pollution by reducing the need for conventional waste disposal. National policies have been launched to raise public awareness about environmental management control for encouraging recycling practice among consumers both in households and industry. Responding to the policies, both government units and business firms have run campaigns to increase the care for natural resource usage/preservation. It is agreed that recycling/reusing could ease the country's economic loss due to the balance of trade deficit (e.g., the import of natural materials from abroad). Recycling business could play a key role in modern waste reduction, and support the implementation of the national policies as well as ease the balance of trade. Due to the increasing need for recyclates and the great amount of recyclable waste left available, the recycling business is potentially growing. Households are cooperative since local recycling operators do curbside collection at residences. However, the exceeding amount of government units cause complexity in the liaison (i.e., response with seriousness and sincerity but do so with cumbersome and unwieldy administrative processes). It would be beneficial if the exceeding amount of government units could be streamlined so that cooperation between groups of them moves in the same direction.

## V. RECOMMENDATIONS

Based on the study, recommendations are made and divided into 5 parts as follows:

1. Government policies
  - 1.1. To adjust taxation systems and tax rates for licensed operators.
  - 1.2. To provide the recycling business financial securities so as to enable the business for commercial loan.
  - 1.3. To create a model of control for regulating operations and entrepreneurs recycling businesses (e.g., licensing registered ones).
2. Business responsibility
  - 2.1. To streamline the government units dealing with the recycling business so as to have unified registrations and rules.
3. Management
  - 3.1. To have a coding system to get the recycling business running honestly (e.g., open bidding in public in the presence of all who may wish to witness).
  - 3.2. To standardize pricing so as to provide benchmarks, that individual recycling operator can use to judge fair prices.
  - 3.3. To provide low-interest business loans.

- 3.4. To solve the problem of illegal foreign labor (e.g., expanding the time period for registration).
4. Technology and transportation
  - 4.1. To support in-house research on recycling technology (i.e., to advance garbage separation systems)
5. Education and campaign
  - 5.1. To support training to retrain/upgrade skills needed in the business.
  - 5.2. To establish centers for mutual cooperation among recycling operators to strengthen selling power.
  - 5.3. To promote cooperation between the licensed/non-licensed recycling operators in an attempt to establish business networks.

The results showed that Government appears to lack of unity and integration management to drive the strategies of creating value added to the recycling business. There have many projects and programs promoted by the government, but there are many problems or Inefficient also the recycling business have not an opportunity to participate with government to set the recycling policies. The major suggestion of this study is as follow.

1. A government should promote the establishment of the recycling industry according to a concept of Green purchasing products that are environmentally friendly (Eco-Products) are more likely to buy more and more in a global.
2. To promote the campaign for the activities of the International Green Purchasing Network or IGPN to obtain support from relevant agencies including Ministry of Industry, Ministry of Commerce, Ministry of Natural Resources and Environment, Department of Energy, Ministry of Science and Technology.
3. To promote Conference Workshop or the "A public forum" to share their experiences to strengthen the recycling business with the Thai Guru of Recycling.

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