

TRANSFORMATION TO ENTERPRISE SUSTAINABILITY CASE STUDIES OF MANUFACTURING AND SERVICE ENTERPRISE IN THAILAND

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Abstract:

Emerging literature on enterprise sustainability suggests that all types of enterprise may adopt “Triple Bottom Line” approach to facilitate enterprise to sustainability. However, there is still a relatively limited understanding of how such sustainability might be implemented and measured in enterprise practice including manufacturing industry as well as especially in service industry. This paper presents preliminary findings from a case study of Thailand enterprises that play key role to supply product and service to the larger manufacturing company and corporation. Learning from the case study provides interesting insights into the drivers, enablers, and some unanticipated additional benefits of service industry sustainability measurement beyond the compliance, and so contributes to extending the existing body of knowledge.

Keywords: Enterprise Sustainability, Enterprise Sustainability Measurement, Sustainability in Service Sector, Strategic Sustainability in Small and Medium Enterprise

1.0 Introduction

Most of enterprise executives know sustainability challenge will shuffle the business from leader to loser depend on how they response to this changes. The way to create value creation will be changed to align with sustainability principle. In fact, based on the academic and practitioner implication, the sustainability must be the critical issues for enterprise to position themselves to survive for their economic benefit and also creating environmental and social value simultaneously. As known that sustainability performance is now generally understood as the combination of economic, social, and environmental performance. Its performance aim to build long-term survival for the enterprise in 21st century. The enterprise need to understand deeply what and how can make business sustain in long term. Furthermore, the enterprise aims to create their sustainability performance to satisfy stakeholder including community and society needs and expectation

The effects of the industrial revolution had caused the world to the era of unemployment, poverty, and disease the cause the society proclaimed the justice align with the Malthus foresee that the world will be encountered the limits to growth caused by resource deprivation (Mebratu, 1998) Currently, sustainability become the important challenges for most enterprise rather than the best quality or cost leadership (Serban and Kaufmann, 2011).

The simplest way that the enterprise can demonstrate the survival mode in their business is to perform the positive financial and broader economic sustainability performance. Its sustainability is one of the most crucial dimensions of the triple bottom line approach. Enterprise sustainability is related with long-term sustainability of an enterprise (Delai and Takahashi, 2011). It is not traditional only financial performance, but the enterprise should transform its performance to cope with the sustainability approach by linking economic performance overlap with environmental and social dimension which means that the enterprise additionally need to demonstrate their capability to make positive economic contribution to local community, society, and this global. To increase the long-term survival opportunity, the environmental and social issues need to integrate to strategic goals and strategy to guarantee economically sustainable.

2.0 Literature Review

2.1 Sustainable Development and Sustainability

WCED has been defined “Sustainable Development” since 1987 and urged the academic research to develop the framework for corporate and industrial level. Elkington (1998) is one of the pioneers who proposed the definition of corporate sustainability focuses on the triple bottom line. Also, Artiach *et al.*, 2010 align the definition of sustainable development to the corporate level, which define as “the business and investment strategy that seeks to use the best business practices to meet and balance the needs of current and future stakeholders”. Since then, the demand of implementing sustainable development in the micro level has been required by not only the government agencies, but also the requirement along the value chain. Additionally, the manufacturing and service enterprises had been pressured from different stakeholders to adopt sustainability practices in their strategy and operations levels in provide the results of sustainability performance to public. The principle and application of environmental integrity, economic prosperity and social equality to its products, policies and practices in expressing actions in favor of sustainable development would require to integrate to their business process and system around the world during the last decades. However, the adoption of sustainability to all level of enterprise is a difficult task because the enterprise needs to think of the multi-dimensional nature of sustainable development (Bansal and Roth, 2000; WBCSD, 2002; Goyal *et al.*, 2015).

2.2 Enterprise Sustainability

The negative impacts of enterprise processes and activities including production processes raised up for global and national concerns about the total benefits that the earth received from them. The rate of fossil fuel consumption had been increased sharply. The enterprises operation are expected to consume double the natural resource and generate the greenhouse gases to the

environment more than 36% of total gas emission (Tonelli *et al.*, 2013). The consideration of green production, low carbon, safety, or energy efficient approach in order to reduce the carbon footprint of the enterprise will affect the whole system since more than 30% of emission came from industry and 90% of waste generated by commercial and industrial sectors would be the part of global solution. Therefore, enterprise sustainability refers to transformation process that can create value for economic sustainability, environmental sustainability, and social sustainability leveraging on technological nature. The transformation path would take into action at material, product, process, plant and system of production levels. Tonelli *et al.* (2013) proposed that there are the options which could assist the enterprises including manufacturing and service enterprises transform themselves to the next level such as added value with rapidly reduce input material and energy consumption in producing existing goods, reuse the discarded extracted material, redesign industrial system, or develop new or reconceive business models (Schaltegger *et al.*, 2012). Product and process design will play typically role to find out the technology that can reduce the pollutants, the hazardous wastes, resources use, and energy consumption.

Unfortunately, the nature of enterprises system currently require the continuous exploitation of new emerging markets for business growth, the enhancement of products and processes through new manufacturing technology to satisfy the demand growth, sourcing low cost supply as well as concentrate to reliability and optimization to sustain margins, investing in CSR activities to build up their positive image since most of the initiatives limited to project that make viable on economic benefit. Therefore, in order to have successful transformation process (Schaltegger *et al.*, 2012), the enterprise need to apply tools and framework to manage business environment on resource scarcity and supply uncertainty (Tonelli *et al.*, 2013), integrate social and environmental risk align with organizational strategy management (Hart, 1975; Hart and Milstein, 2003), replace customer value proposition with a sustainable value proposition (Srivastava, 2007; Richardson, 2008), not limit only build customer/supplier relationships but shift to stakeholder concerns, needs and expectation, manage security and dependencies of the resources between supply and demand (Hart and Milstein, 2003; Meadows and Randers, 2004), create closed-loop management on material cycles, resource flow, chain to save energy, water, waste and materials costs within plants and throughout supply chains (Tonelli *et al.*, 2013; Taticchi *et al.*, 2010) as well as innovate the product that can restore renewable resources and development of communities (Gupta *et al.*, 2011), shift from silo approach to management to holistic approach with fundamental of value creation (Tonelli *et al.*, 2013; Gupta and Benson, 2011; Richardson, 2008).

2.3 Sustainability Performance Measurement

There is only question that have been asking routinely among enterprise executives “Are our products, processes, services, and facilities sustainable from the global complexity? To answer on this question, the researchers and practitioner paid the attention to develop Sustainability Performance Measurement (SPM) to measure the ability of enterprise based on economic and non-economic factors which could base on quantitative approach rather than qualitative approach. (Elkington, 1998; Epstein, 2008; Taticchi *et al.*, 2010; Taticchi *et al.*, 2012). Since, then, the traditionally performance measurement (PM) had been evolved to the sustainability performance measurement (SPM) that expand the performance measurement to environmental and social performance and reporting. (Elkington, 1998; Schaltegger *et al.*, 2003; Schaltegger and Wagner, 2006; Epstein and Roy, 2003; Epstein, 2008). SPM must be holistic and systematic approached of that integrate organizational strategic planning and day-to-day operations to business operation. The enterprise need to focus on four perspectives which are inputs (external, internal and business context, human and financial resources), processes (leadership, strategy, structure and systems), outputs (sustainability performance and stakeholder reactions) and outcomes (long term corporate financial performance) (Epstein, 2008). Currently, SPM could assist the organization and enterprise move forward to conformance, certifying, compliance and reporting with given standards to performance in relation to stakeholder needs and expectations (Schaltegger and Wagner, 2006; Epstein, 2008; Porter *et al.*, 2013; GRI, 2012). SPM may not only measure all dimensions of a company but also evaluate the performance throughout value chain both upstream suppliers and downstream customers (Goyal *et al.*, 2013; Beschorner, 2013; Hubbard, 2009; Porter and Kramer, 2011).

From the last two decade, there are a wide range of framework and initiatives developed to measure sustainability performance of organizations and enterprises including principles of

sustainability measurement, sustainability accounting, and sustainability reporting initiative. The sustainability performance measurement (SPM) has been distinguished in to two types of performance measurement. Firstly, strategic sustainability performance measurement that follow sustainable development concept (GRI, 2010; DJSI, 2010; Searcy and Elkhawas, 2012) The Global Reporting Initiative, 2010 one of the sustainability framework for enterprises recommended that the organization and enterprises should use its framework for measuring and reporting enterprise economic, social and environmental performance to stakeholders. The Dow Jones Sustainability Indexes (2010), the other prominent sustainability measurement framework, provides a set of measures and weightings that are used to assess the sustainability opportunities and risks to develop economic, environmental and social issues both relate to/from the enterprise, in order to reach the sustainable business goals.

Furthermore, the sustainability evaluation system has been used as the methodology to monitor and track the progress both qualitative and quantitative of strategic sustainability aspects as well as operational improvement aspects. The sustainability performance measurement approach has been proposed to public which enable the enterprise to monitor, evaluate, and improve internal processes and the triple bottom line performance align with the stakeholder needs and expectation. SPM has been evolved in different approaches such as “Responsive Business Scorecard” (Van der Woerd and Van der Brink, 2004), “DartBoards and Clovers” (Bonacchi and Rinaldi, 2007), “Environmental Friendly and Ecological Sustainability” (Enquist *et.al*, 2007a; Enquist *et al.*, 2007b)

Secondly, sustainability performance measurement that adopt from social responsibility and environmental management concept. Social responsibility (SR) is the concept that an enterprise is accountable for its impact on all relevant stakeholders (Bansal and Roth, 2000) which companies not only integrate social and environmental concerns with their business operations and stakeholder interaction, but also consider economic as well as non-economic issues and measuring non-economic aspects of performance (Enquist *et.al.*, 2006; Schaltegger and Wagner, 2006; Porter and Kramer, 2011). SR can be defined as a sustainability concept that could assist the enterprise holistically managing the balance between financial value, environmental concerns and social obligation and surviving from complexity and uncertainty from external context. (Elkington, 1998; Enquist and Edvardsson, 2006; Keeble *et al.*, 2003, Tat). Therefore, social responsibility concept can be a proactive approach and new business model for creating the values to stakeholders (Edvardsson and Enquist, 2008; Schaltegger *et al.*, 2012).

3.0 Empirical Study

3.1 Research Approach

The researchers have been working with Thai Chemical Engineering (TCE; trading enterprise) and Dairy Home (Organic milk and yogurt producer) in Thailand, approximately one and half years. Data for this case study was collected by analyzing strategic organizational documents and internal sustainability reports, Internet documents and information, interview with top management in different managerial positions, and personal observations at the enterprise,. These have provided research team with an extensive basis for developing this case.

The researchers also rely on experience and the literature in order to present the evidence in various ways as the interest in this case relates to organizational change rather than specific problems. The construct of this case study is designed with purpose to analyze and conduct an in-depth study of the role of enterprise sustainability in service industry at the TCE and SMEs family-owned manufacturing, Dairy Home, in Thailand. The case study method was chosen in order to assess and reveal the strength and extremity (Yin, 1994) of creating sustainability and value.

Thai Chemical Engineering and Dairy Home Case Studies

Thai Chemical Engineering is one of Thailand leading sellers of chemical treatment product for waste water treatment system of sugar cane industry, boiling and cooling system, solid waste disposal system in general manufacturing site and household level. The core competency of TCE relate to the

area of water and chemical substances. The company is located in Bangkok, Thailand, which is one of the major purpose of these case studies, has a capacity of more than 2,500 ton per year (in 2015), with an annual turnover of 200 million baht approximately 60 employees. The company has more engaged with food and agricultural manufacturing plant in by offering pre and post sales service. Since 2014, most of the large corporation and manufacturing in Thailand required the main suppliers in their supply chain go beyond social responsibility in order to support their strategic direction. Enterprise sustainability is the crucial requirements between suppliers and large corporation both domestic and international level. Moreover, the company required the new business model to turn up the market share and competitiveness since it declined gradually since 2012.

Diary Home Co, Ltd., small family-own business, one of the leading organic dairy products including organic milk and yogurt in Thailand, is founded since 2004. The company is located in Nakhon Rachasima, Thailand. The company has sale revenue over 145 million baht over 2015. The number of employee is 166 employees. Since the dairy product has relied on the raw material from suppliers, so the engagement program has been developed and routinely executed with suppliers to ensure that the raw material (raw milk) continuously deliver to the manufacturing. Top management set up business policy under the slogan "Good, Clean, and Fair". Top management team commit to provide organic, high quality, and safe product to consumers, produce clean product that do not effect to environment as well as fair pay to employee and suppliers.

Transformation of strategy planning process

Thai Chemical Engineering and Dairy Home executives commit to transform themselves to be sustainable enterprise by adopting "triple bottom line" approach as well as the engagement theory. The future sustainability challenges were discussed by their management team align with needs and expectation of prioritized interested parties to rethink long term purpose rather than day-to-day operation basis. As the results, they can identify new business sustainability opportunities and new values to shift the enterprise to new paradigm. The business future challenges statement have been indicated the several challenges by integrating between economy, environmental, and social issues.

Sustainability strategic destination had been set up in the medium and long term. The companies expand to scope of their destination not only company financial issues as done before but environment and social development destination had been determined on this stage. The traditional balance scorecard of Kaplan and Norton has been turned into enterprise sustainability-balanced scorecard which includes 4 perspectives (sustainability perspectives, stakeholder perspectives, process perspectives, and Input perspectives). Them-based management were applied to manage and execute holistically. The company used stakeholder engagement approaches to analyze the future needs and expectation among identified stakeholders and then identify stakeholder value proposition. Finally, the outcome perspective (sustainability), the enterprise set up 3 strategic objectives, which show the balancing between economy, environmental, and social goals.

Engaging with the interested parties

Thai Chemical Engineering and Dairy Home start to expand the scope of building the relationship not only main customers but also made sense to engage with also with local communities, supplier, and employee (Perrini and Tencati, 2006; GRI, 2012). On this account, the companies set up the program to enhance the employee capabilities skills in communication and negotiating in order to dialogue with concern parties. They applied AA 1000 (Accountability Standard) as engagement framework to develop the systematic engagement process within the enterprise. They start the process by identify the main stakeholder that may affect to triple bottom line outcomes and then prioritized the group of stakeholders. Then, the dialogue plan would be initiated. There were 5 groups of interested parties that both of enterprises were highly concerned; employee, customers, suppliers, communities, and business networks

Economic Enterprise Sustainability Measures

TCE market share has been declined gradually in 2015. Furthermore, the firm's sales turnover was only Baht 200 million in 2015. In 2014 TCE sales of chemical substance were 2,500 ton that are 90% of their total chemical sale. Chemical Engineering's management took sustainability seriously as

a core part of the company, beyond social responsibility, and develops and implements its sustainability model.

Diary home also has sales turnover increased from baht 130 million in 2013 to baht 145 million baht in 2015. Also, the market share has been raised up from 0.2% to 0.3% in 2015. The production capability is over 2,100 ton per year. The management team commit to sustainability and sufficiency as the business core competency. Social responsibility and various international management system standards are the crucial elements to step up the company to this level. The economic enterprise sustainability measure beyond the compliance relate to (i) increase Productivity through technology and environment issues, (ii) integration of economic and environmental sustainability., (iii) co- creation the innovation, and (iv) Implement Management System

Environmental Enterprise Sustainability Measures

TCE and Diary Home management team had assessed the significant environmental aspects that could impact to environment. Basically, the companies complied with local environmental law and regulation. However, energy consumption and waste were highly concerned by both top management team. Regarding to the aspects, they decided to build new infrastructure and technology to provide better environmental performance for communities and overall environment. The environmental enterprise sustainability measure beyond the compliance relate to (i) green procurement, (ii) integration of economic, environment and social sustainability, (iii) green technology and Infrastructure, and (iv) reduction of energy consumption

Social Enterprise Sustainability Measures

Both of the companies had concerned the social aspects in term of internal boundary. Top management team consider the safety environment as the first priority for employee. New organizational culture has been determined and implemented such as sharing, long term thinking, and self-learning behavior. As the results, each personal set of objectives relate to working and living performance set up and monitoring the progress routinely. The social enterprise sustainability measure beyond the compliance relate to (i) sharing (integration of social and environmental sustainability), (ii) safety, and (iii) life after work hours and retirement

4.0 Discussion and Conclusion

The enterprise sustainability revolution require the integration of the sustainability concept to strategic direction and business process by demonstrating that, at date, the emerging approach can improve the business outcomes in term of economic, environmental, and social performance comparing with the past and current approaches.

The provided case study show the several approach that the SMEs in service and manufacturing enterprise can reach sustainability concept by mobilize the change from top management commitment, apply strategic sustainability thinking to business strategic planning process, adapt the BSC framework to transform the sustainability strategy into operations, and determine and routinely engage with the group of interested parties to determine business risk and opportunities. Industrial sustainability can be pursued in many different ways of thinking;(i) influence the eco-efficiency concept to both demand side and supply side, (ii) utilize the modern technology to enhance the operational excellence, productivity, and respond to receiver of output behavior (iii) better understanding how can create the life balance for employee, and (iv) co-create with interested parties to innovate product, process, and new business models.

TCE and Diary Home understood the importance to play the business game that influence from suppliers, customers, partners, communities, and regulators in the 21st century. The uncertainty from external context forced the enterprise to realize new approaches to business model by implementing significant changes to operations and achieving important benefits in terms of win-win or win-win-win situation. Sustainability strategy development would be the one of the key success factors of this transformation.

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