The Art of the Kaizen Approach for Sugar Production in Ethiopia: Lessons from the Methara Sugar Factory

Asayehgn Desta, Ph.D. Sarlo Distinguished Professor of Sustainable Economic Development, Barowsky School of Business, Dominican University of California

Business Process Reengineering (BPR) deals with fundamental organizational change, or is the great-leap approach to redesigning and retooling. It seeks to bring a radical approach to creating a breakthrough in organizations trapped in outmoded and outdated business processes. Top managers and consultants design new ways of doing things and force companies to go beyond continuous improvement of existing products, services, and processes. Though innovative, BPR is being challenged by some companies looking for a strategic remedy that will contribute to the sustainable improvement of their performance and quality, add value for their customers while minimizing cost and eliminating waste.

To counteract the expensive and technology-intensive strategy proposed by BPR, many managers and policymakers have embraced the Japanese management philosophy of Kaizen. For incremental change of productivity and addition of value, Kaizen uses a gradual approach using existing technology, training work teams, humanizing the workplace, and liberating the thinking of top management and employees at all levels. Since Kaizen requires the use of existing technology and the retraining of existing workers, many poor countries that lack capital embrace Kaizen management practices for improving their enterprises.

A case in point is the Methara Sugar Company in Ethiopia where the production of sugar declined substantially. This was because of mismanagement of the company, disregarding juice leakage, repetitive loss of electrodes, and the outright stealing of sugar and spare parts. More importantly, the cane cutters negligently left uncut 4cm to 22cm of the canes still containing sucrose. In addition, when machines broke down, there were lengthy delays for repairs and servicing while waiting for outside technicians rather than using in-house technicians. With the anticipation that the Kaizen management technique would enable it to increase the quantity of sugar, meet the needs of consumers and be globally competitive, the Methara Sugar Factory adopted the Kaizen management technique in 2013.

With the introduction of the Kaizen management techniques at the Methara Sugar Factory, Ethiopia, the overall performance of the company may be considered remarkable and from the outset the sugar plantation area has a panoramic view. In pursuing Kaizen standards, the Methara Sugar Factory has achieved a nationwide average sugarcane crop yield of 126.93 tons per hectare. Currently, both the sugarcane plantation and sugar production have increased by 35% and 37% respectively. The production cost of one unit quintal of sugar has decreased by
about 23 Ethiopian birr and the overall time efficiency has increased by about 20% since the company has embarked on Kaizen (Methara Sugar Company, June, 2013).

Also, the Kaizen management strategy, by involving everyone in its organization to work together, has achieved improvement without large capital investments. Kaizen is ingrained in the minds of both managers and workers because slogans about the Kaizen philosophy are posted all over the factory as reminders to improve the efficiency of the existing infrastructure. Not only for the factory workers, the posters give valuable lessons to visitors letting them know there is no end to improvement and that many small incremental developments will accumulate into substantial gain. The workers appear highly motivated and feel that the company has improved their morale and safety. For example, by and large, the health services center is very clean and gives both preventative and curative services to the workers of the company and their families. The most remarkable aspect of the Kaizen socialization process is that it has positively affected the workers to practice at home what they have been socialized to do at the sugar factory.

Over time, upon the company’s total mastery of Kaizen, the performance measures are likely to show a road to success. However, the sustainability of the company should not be seen only in the production of highly productive cane sugar (sucrose). But, it should extend to the production and processing of other products that include, molasses, bagasse (the residual dry fiber of the cane after cane juice has been extracted, that can be used as a fuel source for the boilers, production of paper, cardboard and panel boards. Bagasse could be used as a replacement for wood in many of its applications); dried filter cake (used as an animal feed supplement, fertilizers, and source of sugar wax); and the production of ethanol used as a biofuel alternative to gasoline. By diversifying the energy security, Ethiopia could conserve its scarce foreign exchange reserves on fuel imports, thereby lowering its exposure to price volatility in international oil markets (Alemu, D., Feb 26, 2013). Finally, while the company is wrestling with the Kaizen management strategy, it needs to figure out how the excessive electricity generated from steam could increase its revenues by selling to local power companies.

Realizing that a sugarcane crop is very sensitive to climate, soil type, irrigation, fertilizers, and insects, instead of growing sugarcane year in and out on the same land, it is admirable that the company is growing peas to prevent damaging the ecology of the soil (including depletion of soil nutrients that prevent the vulnerability of sugarcane to insects). However, in our world today, no product sold in the market can be developed without taking into consideration its impact on the environment. Therefore, the company would be able to achieve sustainable productivity if it further addresses the impacts of environmental and social concerns such as soil degradation, biodiversity, the overuse of water, air and soil pollution and the processing effects of cane and beets. For example, when sugar mills are cleaned, a tremendous amount of organic matter is released into the environment and streams. It reduces oxygen levels in the water, and kills freshwater biodiversity. Sugar plantations need to be irrigated using water
dripping system where only a small percentage of applied water is used by the crop ((see for example, WWF, 2005).