Can Top Management Sustain Quality Programs?

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The fundamental concept in quality initiatives is continuous and unending efforts to strive for quality. Continuous improvement can be attained through organized activities that constantly search for more effective and efficient processes. The main issue at hand in the implementation of these programs eventually deals with sustainability issues. Can the organization create an environment that is supportive to these activities? Most analyses and researches find that top management is responsible for many of these failures as it is not able to sustain its commitment to these programs.

This paper aims to explore this question using a model that relates top management commitment and other organizational variables and the SD approach nicely represent the sustainability issues as equilibrium situations that extend to infinity. The model is based on suggestion schemes as the vehicle to gaining the desired improvement.

The Model

The basic process of the model is the generation of new suggestions and their subsequent implementation. The generation of suggestions is based on the perception of organizational support to these initiatives, while the implementation of suggestions is based on the current level of suggestions that had been accepted and the time to implement them. The implementation time, in turn, is influenced by both top management and middle management. Such time index indicates the relative availability of time by management so that implementation time is inversely related to the time index. The perceived organizational support is based on three manifestations of top

management commitment: top management visibility, middle management involvement and a rewards system.

Top Management Visibility. Interviewed employees feel that it is important for top management to be seen to take an active role in the quality improvement program through regular review of suggestions, attendance in presentations and visits to the shop floor. The present paper conceives this importance through the fixed time allocated by top management for these activities, and compared with the required time attention by the workers. This time index indicates top management's visibility which contributes to perceived support. The required time from top management is a function of the number of suggestions under study and for implementation.

Middle Management Involvement. The present model views middle management as being instrumental in evaluating and implementing suggestions. Thus, time allocated and time requirements are similarly represented as in top management visibility. The allocation process is not only affected by middle management's commitment but also affected by a perceived threat to their authority. This latter variable is a function of the number of new suggestions generated.

Rewards. The third indicator of top management commitment is the rewards system. The central part of the reward system is similarly an evaluation of the adequacy of rewards to the participant's efforts. That is, actual rewards are compared with expected rewards. These expected rewards are a function of both efforts from generating new suggestions and the effect of past satisfaction from the rewards. As more satisfaction is experienced, expectations are raised. This relation model the observations that workers tend to demand more and more rewards.

The Simulation

The model was initialized so that perceived support is zero, and this is done through zero values for allocated time by top management and middle management, and actual rewards. A step

function is introduced for each of these submodels. These step changes may represent what top management had chosen to implement at the initiation of the program. Figure 1 shows the results of implementing only one of these manifestations at one time.

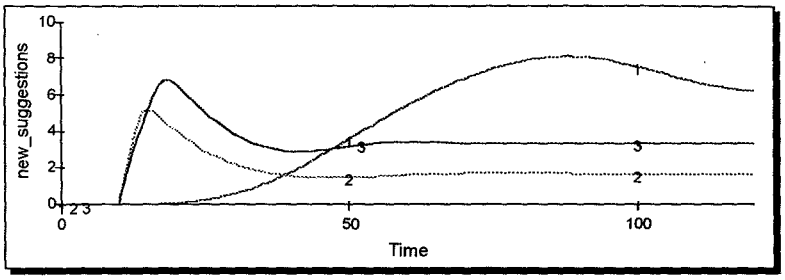

Figure 1. Implementing single aspects of the program: rewards only (1); middle managem time only (2); and, top management time only (3)

Line 1 resulted from a step increase from 0 for actual rewards at time 10. A gradual reaction to the step change is seen and peaks just before time 100. This is mainly due to the lags in the adjustment processes for satisfaction from rewards, perceived support, and average expected rewards. Longer simulations show that there are damped oscillations.

Line 2 represent the results from a step increase in time allocated for quality improvement by middle management. There is a rapid increase in new suggestions generated leading to a fast overshoot of the actual allocated. The delays in perceived support continued to push the new suggestions until perceived support registered that decreased time allocation index, followed by a decline. Finally, Line 3 for top management time shows very similar results as the step changes in middle management time.

As top management can implement each of these aspects separately, a TQM approach usually suggest a more holistic perspective. Figure 2 shows a simulation of all three aspects implemented simultaneously at time 10. The results show that the trough of the decline is not as

low as in the earlier simulations as the rewards system pushes perceived support at this time, allowing earlier recovery. However, the dynamics of the rewards system also brought with it the damped oscillations.

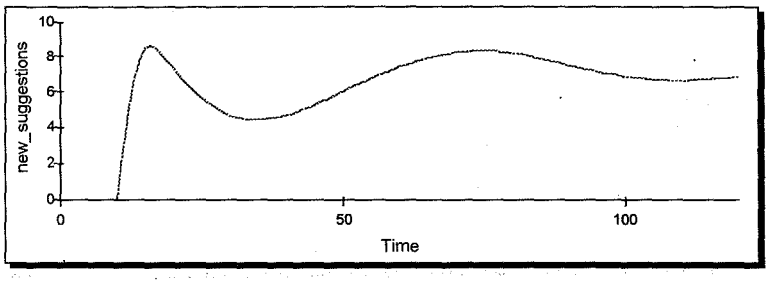

Figure 2. Results when all three aspects are simulataneously implemente

Conclusion

What may be apparent from the above simulations is the decline after the initial increase, typically interpreted as failure after initial success of the program. Such declines however are part of the feedback structure of the system: reactions are bound to overshoot their targets due to delays in averaging processes. These averaging processes, as they are mainly impressions and perceptions inherently introduce delays that affect reactions, inevitably resulting to these declines as they adjust to search for their equilibrium.

A most probable reaction from top managers of quality programs is the sense dissatisfaction or frustration over their efforts when faced with declining trends. This could potentially lead to abandonment of their improvement initiatives. What SD and this particular model can primarily offer is the insight that declining trendss are but part of the system's attempt to search for its equilibrium, and not necessarily the failure of their quality efforts. Secondly, it offers a way to search for the leverage in order to find ways of improving system performance, knowing that balancing loops with delays dominate the implementation process. Finally, this model suggests the point that there is a natural limit to top management's commitment as a driver of quality improvement efforts.