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Life Cycle of Productivity Improvement Activity

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ABSTRACT

The objective of this article is to propose life cycle of productivity improvement activity. In each phase of the cycle, major characteristics and suggestions are discussed to attain efficient and sustainable application. Productivity improvement activities has life cycle and unique characteristics in each phase. The paper is one of the first to link life cycle concept to improvement activity. It can be used as a fundamental study for academia to further research in this integrated area and for practitioners to efficiently and sustainably implement such activity.

Keyword: Productivity Improvement Activity, Life Cycle, Sustainable Development, Characteristic

1. INTRODUCTION

Many activities such as 5S, Quality Control Circle (QCC), Kaizen Suggesting Scheme (KSS), 6-Sigma, Total Productive Maintenance (TPM) have been initiated to improve productivity. They may be called concepts, techniques, tools, activities, operating systems, management systems, management philosophies, depending on the applied context. For example, Total Quality Management (TQM) and Supply Chain Management (SCM) can be determined as both management philosophy and operating system [1]. In this paper, these will be called “activity”.

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Living things and inanimate objects both undergo a life cycle. Product life cycle comprises four phases namely introduction, growth, maturity and decline [2]. In product life cycle research, characteristics in each phase have been analyzed in aspects such as general strategy, profit, revenue, cost, product development and business competition for effective strategic decision. For instance, Mohan and Krishnaswamy (2006) [3] found that, for an industrial product, demand of marketing activity in each phase is different. In addition, product life cycle can be analyzed in many levels from industrial level, product category level to individual product level [4]. Chattopadhyay (2001) [5] had studied the relationship between product life cycle and customer relationship management and then initiated customer relationship life cycle. Moreover, Parzinger (1997) [6] had reviewed literature and proposed a hypothesis in the relationship between TQM component of Powell (1995) [7] and each phase in the product life cycle.

Productivity improvement activities such as 5S, KSS, QCC can be determined as products that organizations initiate for organizational development. Like general products, these activities have a life cycle. When these have been applied into the organization, there is a phase to introduce them to the employees until the employees recognize, understand and involve in these activities. Employee participation in the activities will grow very rapidly to maturity level. Finally, such popularity will decline with many reasons till death.

Although fundamental productivity improvement activities are recognized for organizational development, their real implementation in organizations is still ineffective and unsustainable. From experience, the author found that after an improvement activity has been applied for a certain period, employees may lose enthusiasm and become less involved in such activities as that in the initial phase. Eventually, that activity will no longer exist in the organization. Once the customer requires the company to reapply that activity or the company faces problem that needs such activity for improvement or there are new management team with new development policy, that past failed activity will be reintroduced as a response to that demand. At a later stage, involvement in that activity will decrease and eventually disappear. That activity will be re-implemented again once there are aforementioned demands. As a result, the objective of this paper is to apply the concept of product life cycle to productivity improvement and then discuss major characteristics with recommendations to efficiently and sustainably implement the activity in each phase.

2. LIFE CYCLE OF PRODUCTIVITY IMPROVEMENT ACTIVITY

Similar to product life cycle, life cycle of productivity improvement activity in this paper is composed of 5 phases. They are 1) Introduction, 2) Growth, 3) Maturity, 4) Decline and 5) Death. Employee involvement has a vital role in any activity and management. Vanichchinchai (2012) [8] found that employee involvement has a significant positive direct effect to partnership and has significant positive indirect effect on a firm's supply performance through partnership. From his experience as a productivity consultants, the author has observed and proposed that each phase in a life cycle includes employee involvement (or customers, for that matter, who are involved in the activity or product) which also directly affects outcome of the activity as shown in Figure 1; and, Table 1 summarizes major characteristics in individual phase. However, it should be noted that there might be other factors relating to employee involvement and sustainability of the activity such as company policy, management style, resource, type of business.

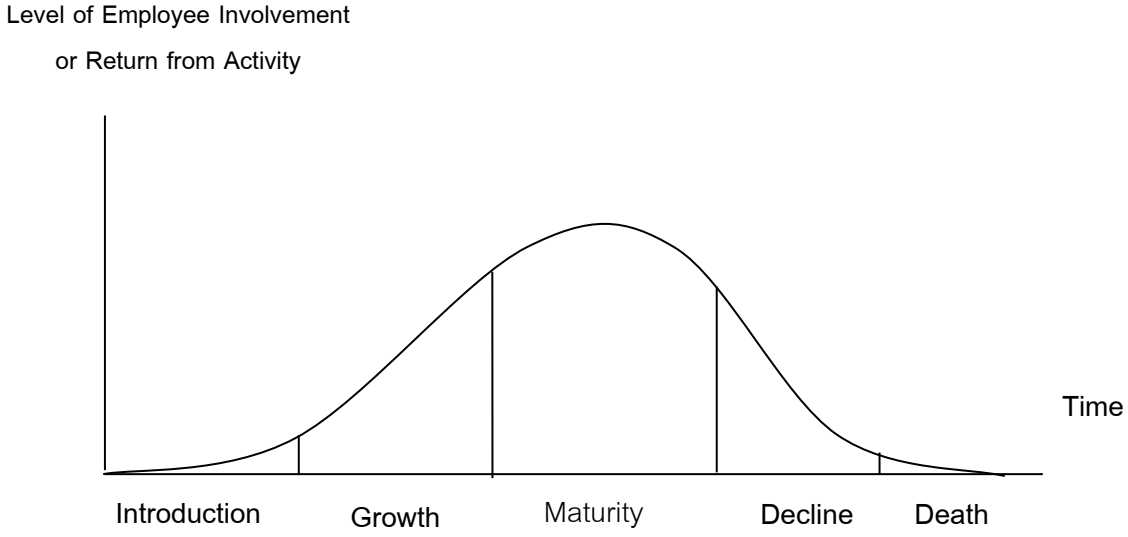

Figure 1: Life Cycle of Productivity Improvement Activity

Table 1: Characteristics in each phase of productivity improvement activity

Characteristic	Introduction	Growth	Maturity	Decline	
				Maintenance or Development	Death
Participant and Commitment	Low	Higher rapidly	Stable	Lower	Lower
Promotion	To get recognition	To encourage commitment and involvement	To maintain involvement	To motivate involvement	To reduce promotion
Boundary	May be in pilot area	Expand to other areas	Cover all related areas	Maintain the existing areas	Reduce to only necessary areas
Pattern	Initiate own pattern	Develop pattern to fit problem	Standardize core pattern	Create and introduce new pattern	Reduce pattern and maintain improvement practice and performance
Core issue	Training and promotion	- Coaching for implementation, up-front problem solving; - Should not introduce new activity	- Maximizing return; - Standardizing - May introducing new activity	Re-investing in training, promotion and creating new pattern	- Maintaining improvement practice and performance - Collecting knowledge
Investment	High	Higher	Lower	Higher	Minimum
Return	Low	Higher	Maximum	Lower	Lower
Key person	Executive management	Working team and coach	Working team	Executive management	Working team

2.1. Introduction

This is the initial phase that the productivity improvement activity is just introduced into the organization. The activity is new. Most employees have no prior knowledge. The number of employees, degree of involvement and commitment in the activity is low. The main target in this phase is to build recognition in the minds of employees to the importance, necessity and benefits of this new activity including recognition of their roles and responsibilities. At this phase, the organization may adapt and tailor suitable activity patterns for its specific demands. For complex or large-scale activities, the organization may recruit a dedicated working team, external consultant or select only a pilot area for improvement. If the trial improvement is successful, replication to other areas will be implemented at a later time. Training, communication and promotion are crucial for employee understanding, recognition and interest in the activity until the employees have sufficient knowledge and skill to participate successfully. The promotion may be conducted through slogan contest, information board, meetings, official working team appointment, activity kick-off day, etc. At this period, the organization must significantly support and invest in personnel, time, training, equipment, money and so on. However, tangible return from the activity is still low. Working team or key persons in cooperation or implementation such as staff from personnel department, training department or organization development department or even implementing functions play vital roles for definition and preparation of the activity. Leadership of organization owners or top managements is critical to encourage employee participation by showing their strong commitment and support. This may be done by reward, involvement in activity, official policy announcement, official working team appointment or even often talk about the activity, for example.

2.2. Growth

At this phase, the employees have enough commitment, knowledge and skill through promotion and training. The number of employees involving in the activity grows rapidly. This may be because they realize the importance of the activity or they are compelled by company policy. Key staff successful in primary introduction may earn personal pride or be recognized for showing loyalty. The main goal of this period, then, is to motivate employee commitment and involvement. The activity must spread from pilot phase to other areas. This expansion helps increase participation and popularity of the activity, too. Promotion is still needed for more commitment and involvement. Loyal staff may be given roles as productivity facilitators in expanding and convincing more colleagues to involve in the activity. Although there are some returns from the activity, it is still minute. More practical problems emerge during growth. The working

team must adjust activity patterns according to such up front problems. Thus, roles of the working team in expansion, problem solving skill and coaching are crucial. Expense in activity implementation is still high because of expansion requiring additional training, promotion and investment in specific issues. At this time, the organization should not introduce other additional activities which will lead to confusion, lack of commitment and involvement in this growth phase.

2.3. Maturity

At maturity, activity has been developed to reach maximum and stable levels. Skillful employees are consistently and continuously active in the activity. Results of the activity are obvious. The main goal of this phase is to maintain a degree of employee participation as long as possible. Activity should be spread to all concerned functions in the organization. Major activity patterns should be standardized or make uniqueness for the organization. Investment in training and promotion is less since most employees have already been involved. Motivation should be done occasionally to remind the employee of the importance of the activity by showing the returns the employee receives from participating in the activity, for example. Return at this phase is the highest. Therefore, the organization should collect benefits from the activity as much as possible. The challenge in this period is how to sustain the degree of employee participation. It must be realized that if the level of involvement does not decrease, the activity performance will not decrease. In case that the organization has a policy to introduce a new productivity improvement activity, it can be conducted concurrently with the existing, well-understood, committed and standardized activities.

2.4. Decline

At this phase, the employees start to feel a sense of weariness and become less involved in the activity. Commitment and involvement decline. These may be due to insufficient additional activity development, new tactics and even training from the previous phase. Sometimes, when the organization introduces a newer productivity improvement activity the former activity may seem out-of-date in the eyes of the employees. The employees must spend time and attention on the new activity in accordance with company directives. Fewer new employees join and existing employees participate less in the activity. As a result, return from the activity is lower. Signs of declining participation must be carefully monitored. There is the critical decision point on whether the organization wants to continue or terminate the activity.

For a fad, which is popular in a short period, the organization may decide not to continue or reduce implementation areas to cover only needed areas with expenditure reduction. However, in case of fundamental

activities such as 5S, KSS, QCC, ISO9001 which must be maintained, the organization should invest more in creating and proposing new patterns or tactics to show that such activity is still modern and interesting. Additional promotion and training can be employed to enhance a degree of involvement to reach the former levels (Figure 2) or even higher, if done very effectively (Figure 3). For example, Charoen Pokphand group (C.P.), one of the biggest Thai conglomerates, has upgraded 5S to 7S [9]. Toyota developed its Just In Time (JIT) concept to Toyota Production System (TPS) [10]. Some organizations, especially those in the automotive industry, further adapt TPS to become their own production system to encourage pride and involvement such as Valeo Production System (VPS), Thai Summit Production (TSPS). Such development and motivation may be minor such as linking employee involvement to performance appraisal, offering award or contest. There can also be bigger changes or creations for example, upgrading to a new version of ISO9001 [11], integrating many quality or management systems together, investing in information technology in Supply Chain Management (SCM), applying to national quality award, QCC, KSS contest. Thus, this phase needs strong leadership of the executive management for this major decision and change.

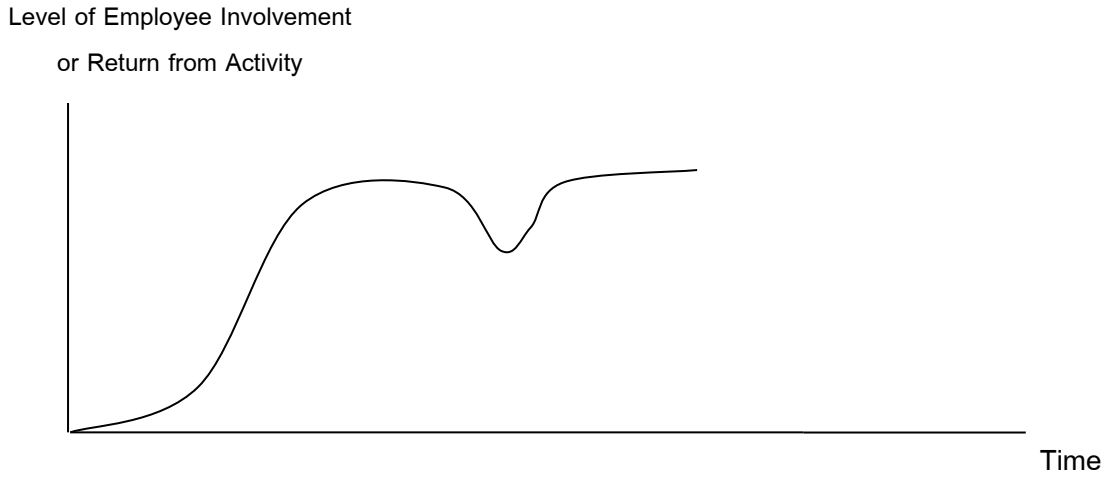

Figure 2: Stimulate the activity to reach the former level

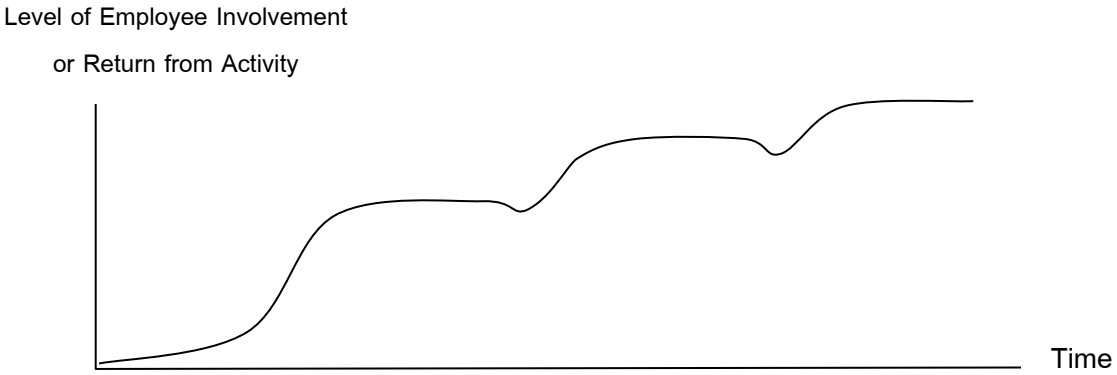

Figure 3: Upgrade the activity to higher level

2.5. Death

The last phase is the activity termination. The organization may not want to keep the activity or the working team can not encourage more employee involvement. At this period, there are very few employees still active in the activity. Investment in the activity should be minimized. Yet, some remaining benefits and experiences exist. Knowledge management (KM) is important at this time. The working team should collect or standardize the beneficial performances of the activity for sustainability; although, the activity itself will be ended. For example, setting the lower defect rate from 6-Sigma activity to be targeted for daily operation and documenting those improvement measures to be standard work instruction. Even though individual productivity improvement activity comprises technically different components, tools, techniques in detail, some major concepts and principles in activity management and implementation are similar and may be applicable to each other; for example, official working team appointment and kick-off.

3. CONCLUSION AND RECOMMENDATION

Productivity improvement activities have life cycles like all living things. Inefficient and un-sustainable improvements are major problems which a number of organizations have encountered. Careful monitoring on life cycle of the activity is significant for resource utilization and sustainability. The organization will be able to review implementation strategies or tactics according to unique characteristics in individual phase in life cycle. For future research, approximate duration of each phase of individual type of productivity improvement activity should be studied by considering contexts such as type of industry, size and culture of organization, etc. Then, the implementing organizations will be able to predict time for each phase more precisely. This will efficiently improve implementation planning and preventive measures against

problems in each phase. In addition to degree of employee involvement, the impact of other factors to activity sustainability such as company policy, management style, resource, type of industry should be studied, too.

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