Self-evaluation model for TQM activity

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Abstract

Objective evaluation is necessary for the company to know the level of its TQM activity and to improve it. This article proposes self-evaluation model for TQM activity through comparison study of the examination viewpoints for the Deming Prize with criteria of the Malcolm Baldridge National Quality Award. Proposed self-valuation model consists of three evaluation categories i.e. management system, management performance and survey /audit system. Evaluation on these categories is done for process and performance by using scoring method. This self-evaluation model is useful for checking the progress of TQM and make company recognize the strength and weakness of its TQM activity, namely, positioning analysis.

Key Words : TQM activity, Self-evaluation, Scoring method

1. Introduction

In Japan, TQC was recently changed into TQM(Total Quality Management) where the framework of TQM was enlarged and expected to be more useful management technology and tool than TQC for increasing competitive power of the companies[1].

On the other hand US companies are very well conditioned in management performance and promote TQM activities aggressively. The typical movement is Six Sigma which was originated by Motorola and was introduced into many companies. GE is one of the successful companies in its speedy implementation with high benefit. Thus many companies would like to promote TQM effectively and efficiently.

On the other hand, ISO9000 has become very popular quality assurance model in the world where "Internal Quality Audit" is unique specified requirement which is not seen in TQM model and is very useful for companies to check their quality systems by

themselves and improve them quickly according to audit results. This shows importance of evaluation in improving quality systems.

This article proposes new self-evaluation model for TQM activity by using the evaluation framework and concrete check list. This self-evaluation model is expected to make companies recognize the levels of their TQM activities or systems and their strength and weakness which will lead to improvement of TQM.

2. Comparison study of existing evaluation models

Three existing evaluation models i.e.the Deming Prize Criteria, MB Award(Malcolm Baldridge National Quality Award; MBA) Criteria and Motorola's QSR(Quality System Review) Guideline are studied in comparison to make our original self-evaluation model. The features and attractive points of those three models are as follows.

(1) The Deming Prize model

The Deming Prize is Japanese original one established in 1951. As it was first Quality Award in the world, it has been benchmarked by many foreign countries especially in 1980s. For example , MB Award was created after studying the Deming Prize model The Deming Prize model focuses on quality and customer. Now new version in 1999 has expanded its scope from customer focus to stakeholder focus which are customer, employee, shareholder, supplier (subcontractor) and society.

In addition, it consists of leadership and strategy, management systems, management infrastructure and QC methods.

Management systems include day to day management, cross-functional management, policy management. Process management is also highly regarded where PDCA cycle is applied to day to day management and continuous improvement by QC method is requested. Another feature is human resource management in management infrastructure which especially focuses on self-realization and individual growth through QC activity. QC circle is typical example for self-realization and increasing motivation.

(2) MBA model

in 2000 year MBA model, business results are most important item which cover 45% weight of all the items. Stakeholder value or satisfaction including customer satisfaction (CS) is important in this model. Moreover benchmarking is requested to keep or strengthen company competitive position and to improve business performance. This model is pursues management quality which means not only product quality but also business quality. Quantitative scoring method by six stage adopted here is unique and helpful for companies to conduct self-

evaluation.

(3) QSR model

Motorola's QSR is internal review guideline for quality system and integrates ISO9000, QS9000, MBA model with Six Sigma based on TQM. Such integration makes internal QSR replace external ISO9000 audit. In addition, check list method(1-4 ranking) is adopted where highest rank 4 means being benchmarked by other companies.

3. New self-evaluation model

3.1 System concept

After comparison study above mentioned, new self-evaluation model for TQM activity is proposed. The concept of this new model is as follows.

(1) TQM concept

This evaluation model is based on TQM concept which corresponds to the Deming Prize model where TQM contributes to realization of corporate objectives through stakeholder satisfaction especially customer satisfaction. Pursuit of quality is vital to customer satisfaction and organization power, namely core competence which consists of core technology, speed(quick response) and vitality is needed for increasing quality.

(2) Survey and assessment system

As the aim of TQM is to increase stakeholder value as mentioned in the above (1), regular and/or irregular survey system of stakeholder satisfaction must be established.

Typical examples of survey system in Japan are Kao's "Echo system" for daily necessities and Asahi Chemical's "Hebel three stage questionnaire study system" for prefabricated house.

To keep high quality of management system, suitable assessment is necessary which is also called diagnosis in TQM.

Internal quality audit requested by ISO9000 is one sort of this assessment.

(3) Performance Evaluation

As TQM must contribute to management performance or business performance ultimately, business results i.e. profitability, ROE(Return on Equity), ROA(Return on Asset) ,cash flow etc. are naturally evaluated and TQM's contribution to them should be also evaluated.

Another important viewpoint for evaluation is organization ability or core competence as the result of TQM.

(4) Management system evaluation

TQM's management system is evaluated from viewpoints of both process and performance.

ISO9000 is good evaluation model for quality system or process conformance to standard or specification, but ISO9000 does

not evaluate any performance of quality system. This new model evaluates performance in terms of "management elements" which are Q(Quality), C(Cost), D(D1=Demand or quantity, D2=Delivery time), S(Safety), E(Environment).

These are key factors for business performance. Fig.1 shows self-evaluation model for TQM activity built based on this concept.

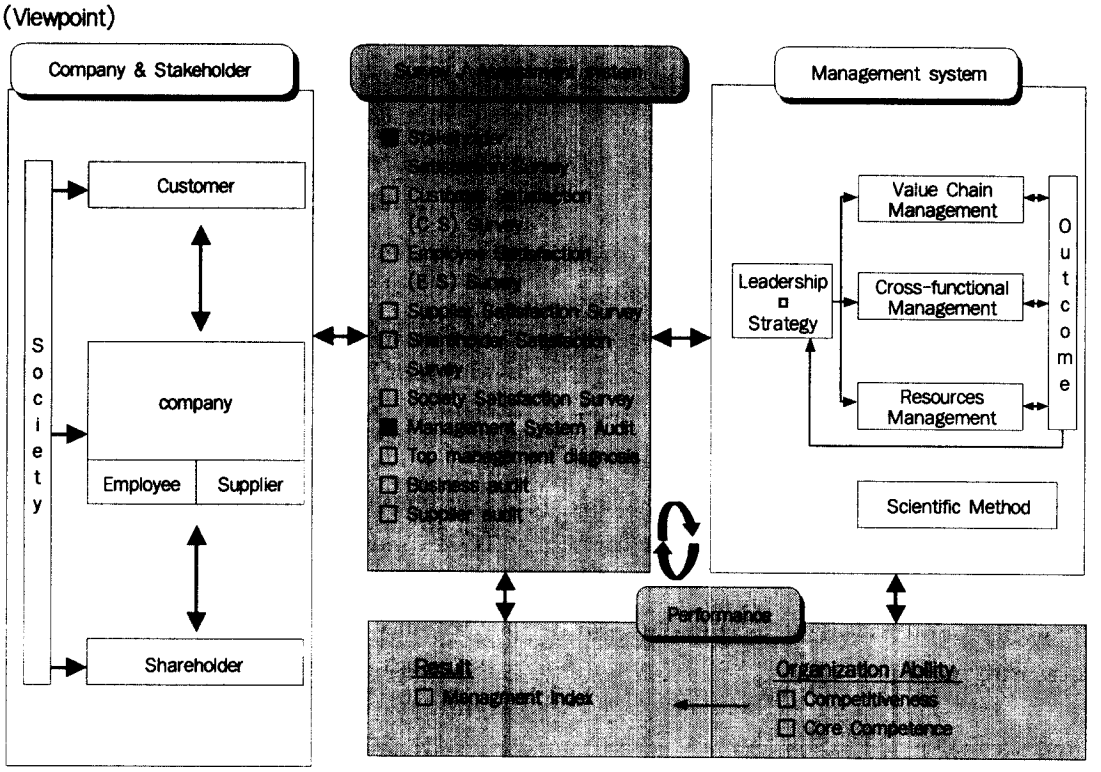
3.2 Check list

In new evaluation model, check list is introduced and it consists of three evaluation parts which are management system, management performance and survey / assessment system.

Quantitative scoring method is also incorporated where full score is 1000, 400 is allocated to both management system and management performance, 200 is for survey / assessment system part.

This score allocation is based on case study in Konica corporation. Each evaluation part is divided into evaluation category and item(A)(B) hierarchically. Minimal leveled evaluation item(B) is scored with rank 1-4

Fig. 1 Self-evaluation model for TQM



where 4 is excellent level equal to being benchmarked by other companies or competitors and 1 is the lowest level.

Table 1 is proposed check list for self-evaluation. Score allocation in the category may be changed by the intention of the company.

Table 1 Check list

	Evaluation Category	Score	Evaluation Item(A)	Evaluation Item(B)	Process Score (Rank= 1-4)	Output Score (Rank= 1-4)	Total Score
Management System Evaluation 400	Leadership/ Vision/Strategy	100	Vision/Strategy (Strategic Managent)	Philosophy,Vision,Strategic Plannning,Long/middle term Plan (goal,means,stakeholder view points)			
			Risk management	Risk Prevention for the change of management environment and safety to avoid accident,disaster			
			TQM implementation strategy	Goal,means of TQM activity			
	Value Chain Management (Divisionwide-management)	80	Customer focus	Customer communication,Responce to claim & complaint, Feedback system(PDCA cycle)			
			Policy Management	Benchmarking,Annual policy,Setting control item, Goal&means, Implementation,Top management Diagnosis			
			Daily management	Clarification of individual task & goal,Achieving goal by problem-solving, Keeping standard, Rotating PDCA cycle,Improvement, Recurrence prevention,Efficiency of process managent(cost,speed), Keeping ISO9000			
			QC Circle	Effectiveness & efficiency of improvement, participation rate			
	Cross-functional Management (Management Elements= Q, C, D1, D2, S, E)	80	Quality Assurance	Keeping ISO9000,Market claim,Process defective, Efficiency (cost,speed) Subcontractor management (Supplier &outsoucing management)			
			New product Management	Effectiveness of new product,Cycle time,development cost			
			Cost management	Cost planning,Cost control by product			
			Demand control Time Control	Inventory-level,Production capacity control Cycle time control(lead time control)			
			Safety management	No.of accident,Keeping ISO18000,OHS			
			Environment management	Keeping ISO14000,LCA,Recycle,Zero emission			
	Resource management	80	Human skill development	Education,traininig,Management by Objectives, Perforamnce review, Skill certificstion			
			Organization management	Outsoucing,Reengineering,Oranization development, e for decision making,Knowledge management			
			Technology management	Core technology,Funadamenatal technology,Intellectual property, Technology transsfer			
			Information management	Information system(Q,D2),Database,Standardization, Configuration management,Secrecy control,Information			
			Facility management	TPM,Global production system,Pant(equipment) renewal & maintenance			
	Scientific mathod	60	QC method	Q7,N7,S7,P7,Statistical method,DE,MA,QFD,FMEA/FTA			
			Integration with other management technology	IE,VE,TPM,Reengineering,IT			

Management Performnce Evaluation 400	Management results	100	Manegement Index (performance)	PL(sales amount,profit,market share), BS (ROA, turnover), Cash flow, Consolidated account,TQM's contribution to management) index			
			Stakeholder value	POE,EVA,Rating,ES,CS,Subcontractor satisfaction rate, Society satisfaction rate(Balanced scorecard),TQM's contribution			
	Organization Ability (Coreco mpetence, on Comtetitiveness)	200					
			Management Elements	Quality,Cost,Quantity(Capacity),Cycle time,Safety,Environment			
		100	Growth	Growth rate of management index,proportion of new product proportion of new business,business & product lifecyle			
			Core technology	Patent(domestic,overseas),technolgy transfer, technolgy adopted in de facto standard			
			Speed Flexibility,Timing	Customer correspodence,Cycle time,delivery time			
			Vitality	No. of suggestion,Team&QCCircle activity, Organization level(Flat organization),Management age			

Assessment system 200	Stakeholder satisfaction survey system	150	Stakeholder satisfaction survey	Survey system for CS,ES,Subcontracror satisfaction, Shareholder satisfaction,Society satisfaction			
	Management /Qulity review system	50	External audit,diagnosis	ISO/QS9000,Consulting & diagnosis by professionals, Business audit			
Total score (max=1000)				▫ Management system evaluation score= ▫ Management perfrmance evaluation score= ▫ Asseeement system score= Total score= (Comments)			

4. Conclusion

New self-evaluation model for TQM activity is proposed with concrete check list. This enables company to find strength - weakness of TQM activity and to make improvement of TQM from points of effectiveness and efficiency. Thus utilization of this self-evaluation model will play an important role in increasing competitiveness of companies.

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