

Integrity of EFQM Model and its Link to Key performance results (case study: Iranian auto sector)

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Abstract: This paper reports the findings of a survey and case study research on the application of EFQM model in Iranian automotive manufacturing companies. This paper assesses the usefulness of the EFQM Excellence Model for decision-making on organizational improvement activities through a two-year assessment of selected companies by EFQM model. The objective for study is to analyze their appropriateness for identification of problematic situations and identification of problems. The paper concludes that the EFQM Excellence Model is appropriately structured to perform the first phase of the analysis, i.e. identification of a problematic situation, but on the other hand, the model does not offer any specific guidelines about the second phase, i.e. improvement plan and Result orientation. The research indicates that the model does not prove to show the validation of enablers Effect to result area's and also, it doesn't have a structured approach about how to exploit strengths or about how to classify or prioritize areas of improvement. We have proposed a process model for excellence roadmap and two important conceptual issues. The first conceptual issue is related to the question of whether the excellence behavior and trends of a company is appropriately reflected in the criteria used for measuring excellence. The second conceptual issue is that of interrelationship between the criteria's in EFQM model, which is the base for decision making for improvement by applying self-assessment results.

Index Terms: Benchmarking, EFQM model; self-assessment; organizational analysis, Improvement Plan

I. INTRODUCTION

Increased competition has motivated many senior managers in manufacturing organizations to evaluate their competitive strategies and management practices with the aim of improving organizational performance. With a diminished workforce and the need to sustain performance, organizations are striving to define, implement and sustain Excellence Roadmap practice.

It is argued that new management assessment tools integrates strategy, management practice and organizational outcomes to create a quality organization that continuously improves and sustains better performance. During last decade Quality management Award has been used as countrywide and globally criteria for comparison of improvement. Quality Management award present in Europe is one of the three major Awards, in a form of The European Foundation for Quality Management (EFQM) Excellence Model, which has its origins in TQM (Sandbrook, 2001).

The model provides a framework for managing quality and continuous improvement in an organization. It is composed of five 'enablers' (leadership, people, policy and strategy, partnership and resources, processes) and four 'results' (people, customer, society and key performance) (Ruiz-Carrillo and Fernandez-Ortiz, 2005). The model has also the added advantage of providing a set of measures for 'hard' and 'soft' quality.

Iranian industry leaders following this global trend have introduced EFQM practice to their supply chain to improve its supply base competitiveness during last four years. The question raised is whether EFQM model is an integrated framework for sustainable development of Iranian industry. Is

the criteria developed for European industry fit the world practice and specifically Iranian business environment? The following section will review the same challenges for the researchers and introduce the research problem in more detail.

II. RESEARCH PROBLEM AND STUDY PURPOSE

Much has been written on the TQM philosophy and methods by quality practitioners or "gurus" (Deming, 1986; Crosby, 1979; Juran, 1991; Feigenbaum, 1983). Surprisingly, little rigorous research has been done to establish the link between TQM practice and organizational performance. The common rationale for many TQM initiatives is that they will pay off "five or six years down the line" and the CEOs can only hope that shareholders are willing to wait that long. Bowles & Hammond (1991) believe that until a firm connection between TQM and the bottom-line is made, measured and regularly reported to senior management, CEOs are not going to take TQM seriously. Many studies have been conducted that attempt to test the link between TQM practice and organizational performance (GAO Study, 1991; Powell, 1995). However, these studies generally lack statistical and methodological rigor. Similar set of researches on EFQM as a successor of TQM practice has shown that the model has inconsistency to performance and there is no relation between the scores obtained by the applicants to The European Quality Award within each criterion and the criterion weight (Dahlgaard, 1998; DDKP, 2000). This indicates that companies have not aligned themselves according to the weights and this might be because

they disagree on the weights determined by EFQM or because they are not lead according to the principles of excellence (Dahlgaard, 1998).

The criterion of The EFQM Excellence Model and its related weights, shown in Figure 1, have always been an important part of the model since its introduction in 1992 and this is also true for most of the other award models (Porter, 1998). This stems from the fact that the award models are intended to be instruments for comparing an organization with other organizations or to rate an organization against a commonly adopted scoreboard (Lascelles, 1996; Conti, 1997).

In this respect, the causality of The EFQM Excellence Model has been examined previously (Eskildsen, 2000a; Eskildsen, 2000b) but very little research has been done on the weight structure. This is not surprising because for organizations that are trying to stay in business in today's increasingly competitive world, excellent results are not created by focusing on the result criteria, but instead by improving performance within the enabler criteria (Conti, 1997).

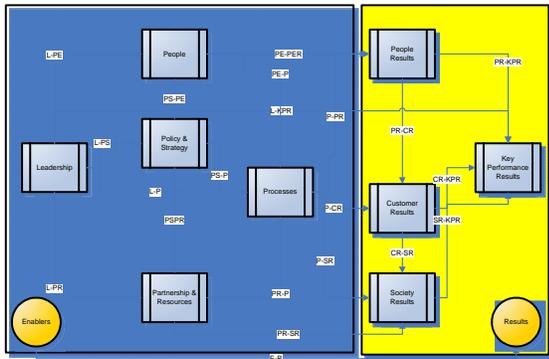


Figure (1) – EFQM model, its criterion with possible interactions

This builds on the premise that the organizations recognize and acknowledge the relationship between the enabler and the result criteria in The EFQM Excellence Model. This has already been confirmed by previous research (Eskildsen,1999; Eskildsen,2000a) and it therefore seems logical that companies would rate the enabler criteria higher than the result criteria.

1) *Criteria casual model in EFQM*

Excellence Award as stated in EFQM model has the built in intention of improvement in performance of companies, therefore an understanding framework will help companies to define the roadmap of excellence in relation to their understanding of area for improvement and focus points. Fortunately, in recent years, the focus has shifted so that companies no longer focus solely on financial results (Kristensen, 1999; Evans, 2000).

The ability to satisfy customers as well as employees has gained increasing attention as the competition for both market share and people has stiffened and especially the ability to measure employee and customer satisfaction has received increasing attention (Dahlgaard, 1998). It can therefore be expected that “Key Performance Results” and “Customer Results” are perceived as more important than “Society Results” and “People Results”.

“Leadership” and “Policy & Strategy” are also perceived as being almost synonymous and since these two criteria have an

almost similar effect on the remaining three-enabler criteria, (Eskildsen, 2000a) it is very difficult to rank the enabler criteria according to their importance and interaction. The model and its conceptual relationship are supposed to be as follows due to experiments cited in literature (see figure 2).

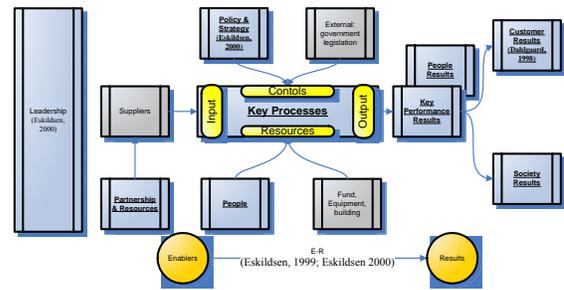


Figure (2) – Process model of EFQM framework

2) *EFQM practice in I.R. Iran*

Introduction of Excellence model to Iranian companies started at 2000 and the first countrywide assessment of EFQM, as a selected framework of Iranian authorities, has been conducted in 2002. The most profound impact of Quality Management and excellence practice on organizational performance has been in the Iranian Steel making and Automotive Industry. This industry has clearly demonstrated that the revitalization of old manufacturing businesses is possible and it will continue to show improvements in quality and productivity.

Although recent surveys on EFQM practice is not focused on its generality of application but it is assumed that such a framework is suited to different cultures (i.e. countries) as well as different sectors of business, we will address this issue through following hypothesis.

Hypothesis H₁: The first assumption to be tested is thus that the Enablers criterion affects the Result Criterion in The EFQM Excellence Model.

Hypothesis H₂: The assumption that Iranian companies are focused within the enabler block, meaning that enabler criterion is perceived as more important than the others are.

Hypothesis H₃: The assumption that Iranian companies are more focused on “Customer Results” & “People Results” & “Key Performance Results” than on “Society Results”

Hypothesis H₄: The assumption that there are relations between Result criterions with its specific enabler factors

Hypothesis H₅: The assumption that there are focus strategies to perform better on an EFQM score model

III. SURVEY DESIGN

We designed a two-year EFQM assessment program for forty companies. The companies taken in our analysis are from different business sectors but almost in automotive supply chain. The assessment team selected for the process consists of fifteen teams of four people with different expertise. The formats and the criteria have been reviewed by teams. To calibrate the results, all teams have analyzed a case study and all assessment has been compared with the base report.

In order to analyze the model, an IDEF representation of EFQM model has been prepared which is shown in figure (3).

As indicated in IDEF model, there are a set of Result

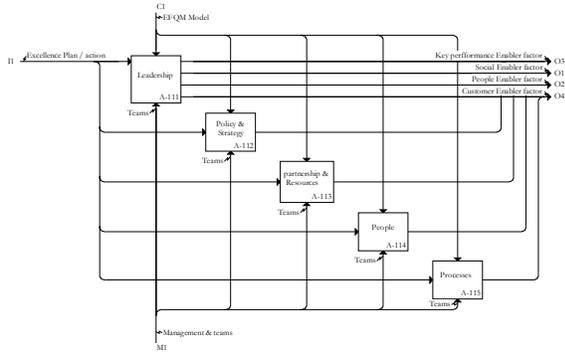


Figure (3) – EFQM model & its enabling factor effect on results

Enabling Factors (REF) $\{O_1, O_2, O_3, O_4, O_5\}$ where $\{O_i = g_i \{\forall A - 11j\} \quad j = 1, \dots, 5$ And $j =$ Enablers in EFQM Model. Such representation of result enabling factor comes from this hypothesis that “a combination enabling factor is exist for each result category”.

Hypothesis H6: Result Enabling Factors (REF) for each result category is different with others.

The outcome of the assessment and changes on the score is taken as indicators of model relationship where the assessor effect on the companies is taken as random effect. This is true because the assessment team has been selected randomly and on two consecutive year all teams has assessed different companies.

IV. ANALYSIS OF RESULTS

Analysis of assessment records has been done from four different perspectives, which are categorized as:

- Enablers & Result Relations
- interrelationship between enablers
- interrelationship between Results
- Model Relationship & Result Enabling factors (REF)

1) Enablers & Result Relations

In relation to the concept of TQM & excellence models, it is assumed that there is a positive direct relationship between enablers and results. Our analysis proves that such relation does exist where the weights are identical in EFQM model. Therefore, the hypothesis H1 is valid. Sensitivity analysis of weights on enabling & result items indicates that if the items are being normalized, the hypothesis of H1 is still valid.

Rate of improvement for enablers and results shows that enablers are not significantly changed while significant changes in result indicators. Such an analysis indicates an unbalanced growth toward excellence. Review of the survey shows that enablers has been improved as per table (1).

	LEADSHIP	STRATEGY	HR	PARTNER	PROCESS
2005	18.82	15.88	18.23	17.35	23.52
2006	20.76	16.12	21.19	22.54	33.51

TABLE (1) – ENABLERS TREND (MEANS, RAO R (5, 23) = 5.52; p < .0018)

All result criteria (people, customer and key performance results) are significantly correlated except society result. This criterion is affected by people result and does affect on customer result.

2) Interrelation between enablers

The Five factors defined in EFQM model have been defined to cover most important areas of an organization toward its excellence roadmap. Even though current weight to each factor resembles its importance as enabler, we have reviewed their interaction to validate the weight factor for organizations. The results are summarized in table (3).

	Leadership	People	Policy	Process	Partnership
Leadership	-	+			
People		-		+	
Policy			-	+	
Process				-	
Partnership					-

Table (3) – interaction of EFQM elements

3) Interrelationship between Results

Results in EFQM model are supposed to indicate different perspective of an organization and more interconnected. The analysis we have done shows that almost all result indicators are mutually interrelated except society results, which does not have interconnection with key performance results. The model of significant interactions is shown in figure (5)

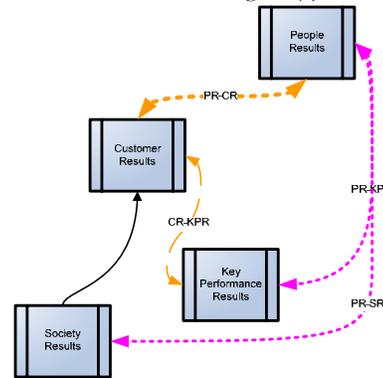


Figure (5) – Result interaction effect on EFQM model

4) Model Relationship & Result Enabling factors (REF)

Model consistency of EFQM has been reviewed through analysis of direct relationship of Enablers to results that we call them as Result enabling factors (REF). The interaction of enabling factors, which is not clear in EFQM model, has been defined through ANOVA analysis of result data. The outcome of our analysis indicates of following cause and effect relationship Table (4):

Result Enabling Factors	Results
Leadership has significant effect on KPR Processes has significant effect on KPR HR has significant effect on KPR Partnership & Resources has significant effect on KPR	Key performance Indicators
Policy and Strategy has significant effect on Customer results Processes has significant effect on customer result HR has significant effect on Customer results Partnership & Resources has significant effect on Customer results	Customer Results
Processes has significant effect on People result	People Results

TABLE (4) – RESULT ENABLING FACTOR OF EFQM MODEL

Combining all relevant cause and effect relationship in EFQM model is presented in figure (6). As shown in model, all factors in model are not correlated which is in line with the understanding of a process model of a business.

The model represents new concepts on road to excellence where the EFQM and other awards are not clear on these aspects. Understanding the root cause of performance improvement & all other results according to our model presents the critical flow of improvement and its related steps.

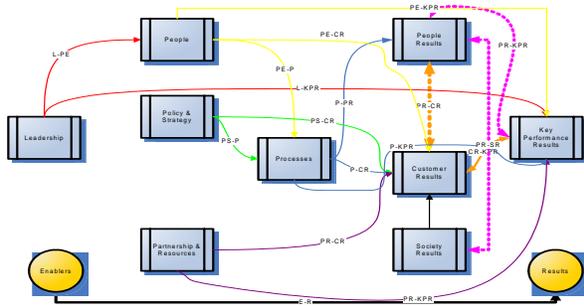


Figure (6) – EFQM model and significant relationships

Scenario building for improvement through understanding of viscous model of change will create certain roadmaps for different organization. Even though change mechanism for organizational planning may follow different path, our survey shows the following path are most effective flows:

Leading people to change the process of certain result improvements on people, customer and Key Performance Results with a focus on commitment of people on customer results. (*Leadership and employee oriented scenario*)

Implementing an effective Policy & strategy to change the process for improvement plans on results with a focus on customer results. (*Strategic management scenario*)

Establishment of a partnership & resource management to improve the end results on customer and key performance indicators. (*Partnership scenario*)

5) Revised process model for EFQM

Interaction of model parameters in EFQM model and its significant relations leads to a new framework and process model for excellence shown in figure (7)

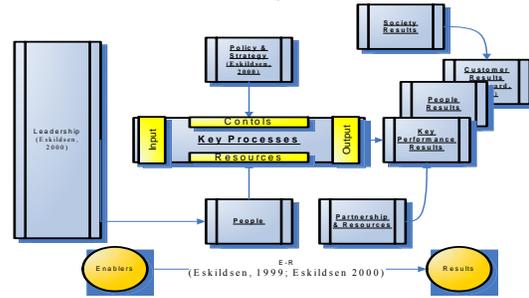


Figure (7) – Revised Process Model of EFQM

Our model indicates that the core of improvement is the process management where the People as a mechanism of change and Policy & strategy as a control mechanism will lead organizations toward excellence. In addition, the partnership & resource management will support business for its key performance results, which shows a parallel process toward excellence. Therefore, the engines for improvement are two main processes, internal key processes and partners as an outdoor process.

V. CONCLUSION

Many authors have provided useful guidelines for EFQM assessment for developing performance measurement systems and organizational excellence planning. Different decision makers want different information from measures and indicators to serve their own goals and improvement plans.

In this paper, we have argued that traditional approach of applying EFQM excellence model, as an assessment model is not a well-defined and consistent criterion to define the gradient of change, which fail to meet the needs of improvement plans for enterprises. There are four main problems with EFQM assessment techniques, which render them invalid for use in quality planning roadmap. These are lack of model relationship on interaction of enabler's effect to results criterion, enabler's interaction and focus points, scenario building for change and process model of the EFQM. We have analyzed improvement scenario of selected companies and showed that to design the excellence plan, there is a need for process view of EFQM system with critical road map of change that can provide enterprises with the information they require to make business decisions toward excellence.

We have shown the process for improvement in real practice of Iranian companies while considering the elements of EFQM model. The significant interactions of its elements are also reviewed and main interactions have been categorized in three main process: 1- leadership and employee oriented scenario 2- Strategic management scenario 3- partnership scenario.

The new process view of EFQM based improvement plan is also presented. Such formulation of EFQM provide fast feedback to decision makers that have the intention to foster improvement rather than simply monitor performance. We have demonstrated that there results are mutually interconnected and focus on every aspects of result criterion will have effects to other result areas.

VI. CONTACT

Dr Jamshid Nazemi is currently assistant professor in industrial Engineering department and a senior consultant in management & industrial Engineering systems. He received his BA & MS & PHD degrees in Industrial engineering from Sharif University of technology and Science and research Unit, Azad University, Tehran. Dr Nazemi has more than 20 years of experience on Process Design & Quality Engineering. He has applied Change management approach including TQM implementation projects; IT projects to enable business strategies, and supervision of EFQM implementation in a group of companies in Iranian Auto industry. Dr Nazemi Currently is board member of IIE (Iran industrial engineering society).

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