# APLICATION OF METHODS, TOOLS AND TECHNIQUES IN TOTAL QUALITY MANAGEMENT

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### **ABSTRACT:**

In working on quality management use of tools, techniques and models always plays a role. From the great variety of available techniques and models, organisations select the ones which are most applicable them to their own unique situation. Although there have been many techniques and models developed over the years there are few which are prominent if look at the use of them in organisations.

For the organisations described, in the end, the techniques are nothing more than enablers for the development of the organisations competences.

An important variable is found in the task maturity (knowledge of, and experience with, quality concept, techniques, tools and philosophy) and psychological maturity (the ability to face certain responsibilities) of the employees.

**Key words:** Tools, techniques, total quality management, improvement,

## 1. INTRODUCION

The organisations described show how leadership and change management are both essential for and contribute to the effective development of organisations.

In most of the organizations described managers deem to realise that people are potential source of competitive advantage. Therefore, one may prefer to speak of collective human development instead of organisational development. People are not seen as a problem – as something without which organising and managing would be much easier. Instead, effective organisations are " empathic", they realise that people have their own emotions, fears, triggers and ambitions. Consequently, these organisations develop approaches which may be labelled as people oriented.

This orientation is not primarily chosen because of its "rightness" but because of its effectiveness. It becomes visible in the way the organisations described have developed their leadership and change management practices.

The human factor becomes more and more a source of competitive advantage. Organisations who have a personnel policy which is both progressive an consistent prove to be more effective over a longer period of time. Quality management is an example of such a philosophy or set of values, it provides managers with a language and a perspective in which consistency and the longer term are elements.

#### 2. LEADERS AND CHANGE MANAGERS

Management seems to mean the management of meaning, managers develop a shared language and provide their people with terms of reference. All their activities seem to focus on he will to get the message across. These activities have to focus on establishing direction, aligning people, and motivating and inspiring.

The activities can be categorised on the one hand as "instrumental" – the design of structures and systems – and on the other hand "charismatic" – the development of a vision, motivating people and taking care of other cultural aspects.

These managers are deeply aware of their personal dreams and ambitions. Effective managers seem to be managers who are in touch with their passions and power.

The effective leadership style varies with the situation, characteristics and development phase. Most organisations show development from a rather directive style – heavily relying on systems, procedures and a prominent leader – toward a more participative one – grounded I employee involvement, extensive training focused o both the transfer of techniques and values and empowerment.

However, top management commitment remains a necessary condition throughout the whole process, otherwise quality loses its high priority status. The degree of employee involvement proves to be dependent on their task maturity (knowledge of and experience with quality concepts, techniques, tools and philosophy) and psychological maturity (the ability to face certain responsibilities, to act as an empowered employee)

The managers are both "leaders" and "architects", that is to say they combine a charismatic and a more instrumental role. Both roles contribute to what is define as the development of shared terms of reference. These managers tell their story not only by developing a vision, defining values and energising the organisation, but also by developing structures and systems, introducing techniques, models and tools. All these actions contribute to the objective of getting the message across. As mentioned earlier, the quality management philosophy provides managers with a language, it incorporates both values and models techniques and tools.

Most organisations explicitly deny the effectiveness of pre-packaged programmes and the transferability of success. The organisations described paint a history of common sense. They do not consider their problems and challenges as being unique. But they are aware that because of reasons oh historical development, cultural background, market circumstances, leadership characteristic. Each organisations is a unique organisations. These unique organisations ask for unique approaches.

The organisations described have succeeded in balancing their uniqueness and the need to learn from external sources. Each organisations sees itself as unique and consequently develops its own way to excellence.

# 3. LEADERSHIP TOOLS AND TECHNIQUES

From the great variety of available techniques and models, organisations select the ones which are most applicable to their organisation. They modify existing techniques to adapt them to their own unique situation.

For the organisations described the techniques are nothing more than enablers for the development of (in particular) the organisations competences.

Several organisations prefer to the importance of learning. Both performance measurement and improvement are backed by an integrated learning system. This consists of integrated

system at different organisational levels and focuses on the representative total quality management (TQM).

The organisations consider learning to be a philosophy and an attitude, and not just another method. They develop systems at different organisational levels and with varying grades of sophistication. They also underline the need to combine instruments and methods with the transfer of values in training and development.

Effective organisations seem to have learnt from other organisations (benchmarking).

Several organisations have developed ways to transfer both methods and instruments (hard) and values (soft). They consider methods as necessary elements of a continuous improvement approach. In their vision, the internalisation of values and benefits is critical if the continuous improvement philosophy is to take hold. The organisations have to compete on the quality of the human factor.

Some companies show that they are able to learn at varying organisational levels and to connect this experience into a learning system. In this way they develop a system which aligns learning at a strategic, systems (departments, teams) and operations levels. These organisations rely heavily on their value systems and information systems. The value system ensures a common frame of reference which helps to interpret information coming from measurement and analysis.

Another technique use is the application of quality circles, were a quality circles is defined as a group of workers from the same functional area who work voluntarily with some clear rules on a quality problem. Quality circles have been in existence for some time and still seem to prove their worth.

A dominate tool in quality management is the use of the "Deming Wheel". (PDCA circle). These four steps provide a lot of organisations with a quideline for working on quality and to assure a continuous process in their organisation.

Some organisation seem to be aware of the fact that learning organisations thrive on adequate information and knowledge. Almost all organisations make use of financial criteria and measurement systems.

For several organisations the customer has been the starting point for continuous improvement. In this respect external customers are the dominant ones. However, many examples refer to the importance of internal customers. The way employees approach these customers can be a critical success factor (CSF).

Several of the organisations described benefited from benchmarking in implementing quality management. Benchmarking can be described as the systematic comparison of the performance of an organisation against that of other departments/subsidiaries (internal benchmarking) or organisations, competitors or leading companies in the industry. The analysis and comparison may be focused on products, processes and practices. I doing this the organisation gathers standards for improvement and insights which may lead them to better performance. The organisations described show that benchmarking is only effective when it is done from a realistic perspective.

Statistical methods have proven their value for many organisations. The use of the methods varies from very advanced to simple standard methods. The objective of using these methods is to have a process in which variation is the results of normal causes and not from special causes. This means that the process will be predictable. One of the most used methods is Statistical Process Control (SPC). This method makes use of information gathered by analysing the process and the product.

Besides, this there are techniques which are used for management and planning, the seven new tools (relations diagram method, affinity diagram method, systematic diagram method,

matrix diagram method, matrix data analysis method, PDPC – process decision programme chart, method and arrow diagram method)

These methods are not so intensively used in Europe as the traditional the seven basic tools – statistic and logic based instruments used for working on quality. The seven tools are case-effect diagram, checksheet, Pareto analysis, control charts, flow diagram, histogram, scatter diagram.

## 4. CONCLUSION

In creating an effective balance between soft and hard factors leadership plays a critical role. Managers work both on transferring enthusiasm and values and developing structures, systems and procedures, including the introduction of techniques and tools. The effective leadership style depends on the specific situation, characteristics and development phase of the organisations.

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# 5. REFERENCES:

- [1] T.W.Hardjoho: The European Way to Excellence. In.: Directorate General III Industry, European Commission. 2002.ISBN 1 901305007.
- [2] Šalgovičová, J. a kol: Meranie spokojnosti zákazníka z pohľadu manažérstva kvality a marketingu. SP SYNERGIA 2006. ISB 80-969390-6-8.
- [3] Hekelová, E.: Quality Management System and TQM at the University. In: Seventh International Conference on Production Engineering and Design for Development, PEDD 7, Káhira, Egypt 2006
- [4] Nemčeková, M. Hekelová, E.: Life Cycle Management in PLM system. Management of Industrial Companies, Vol. 3, No. 1, 2006.