AnaFact
Support of the EFQM Model of Excellence

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Abstract: The AnaFact toolkit supports the TQM approach, with a special eyemark on the application and training within SMEs. The toolkit is completely modularised, so that it can be scaled to the individual demands of the applying company. The core of the toolkit consists of GOA-EFQM, an application for supporting the EFQM model in all its phases, which also is the first solution of its kind which has been approved by the EFQM itself.

1 Introduction

The word Quality has gained a deeply different and important meaning as time went through. It no longer merely describes an inherent attribute of products or processes. Nowadays Quality is constituent of every business area through the Total Quality Management (TQM) concept, which plays a major role in the way companies work internally and do business. TQM is the consequent sequel of basic quality activities of many companies and numerous efforts to prove quality with the certification according to ISO9000. Whereas ISO9000 defines the basics of quality a company must meet to satisfy current standards, TQM enlarges the picture to what could be done in all areas of a company to achieve quality not only in the products, but also for the internal and externally processes as well as all the parties involved. This new understanding of quality is demanding, since it suggest very vague a lot of possible areas for improvement, as well as inspiring, since depending on the current situation, every company can select the current targets for improvement. With this broad-minded understanding of quality, the image of high quality in products and services can be the basis for the competitive forces of the European industry.

2 The EFQM-Model as the way to TQM

To promote such a European quality culture and to reinforce European competitiveness the European Foundation for Quality Management (EFQM) was set up in 1988 by the Presidents of 14 major European companies, with the endorsement of the European Commission. “The present membership is in excess of 600 organisations ranging from major multinationals and important national companies to research institutes in prominent European universities. EFQM’s mission is:

- to stimulate and assist organisations throughout Europe to participate in improvement activities leading ultimately to excellence in customer satisfaction, employee satisfaction, impact on society and business results; and
- to support the managers of European organisations in accelerating the process of making Total Quality Management a decisive factor for achieving global competitive advantage.

The implementation of Total Quality Management programmes can achieve significant

benefits such as increased efficiency, reduced costs and greater satisfaction, all leading to better business results. The EFQM has a key role to play in enhancing the effectiveness and efficiency of European organisations by reinforcing the importance of quality in all aspects of their activities and stimulating and assisting the development of quality improvement." [1]

Since 1991, in correlation with the European Quality Award, an European Model for TQM was introduced, a framework for an holistic TQM approach. This framework defines Total Quality Management with all it's aspects in a general way, so that it is adaptable for all kinds of companies. The model includes not only the established categories for quality like "Processes" but also categories like "Leadership", "People", "Policy and Strategy" and "Partnerships" on the Enablers side and "People ", "Customer ", "Society" and "Key performance Results" on the Results side, that make the model complete.

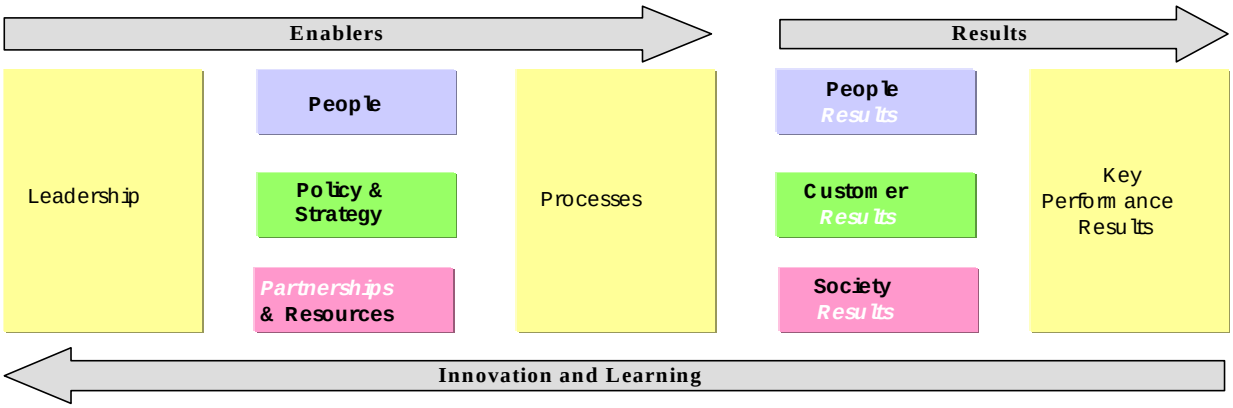

Figure 1: The EFQM-Model

A study /2/ done by Fraunhofer IAO shows that the importance of TQM is quite understood by managers (Figure 2).

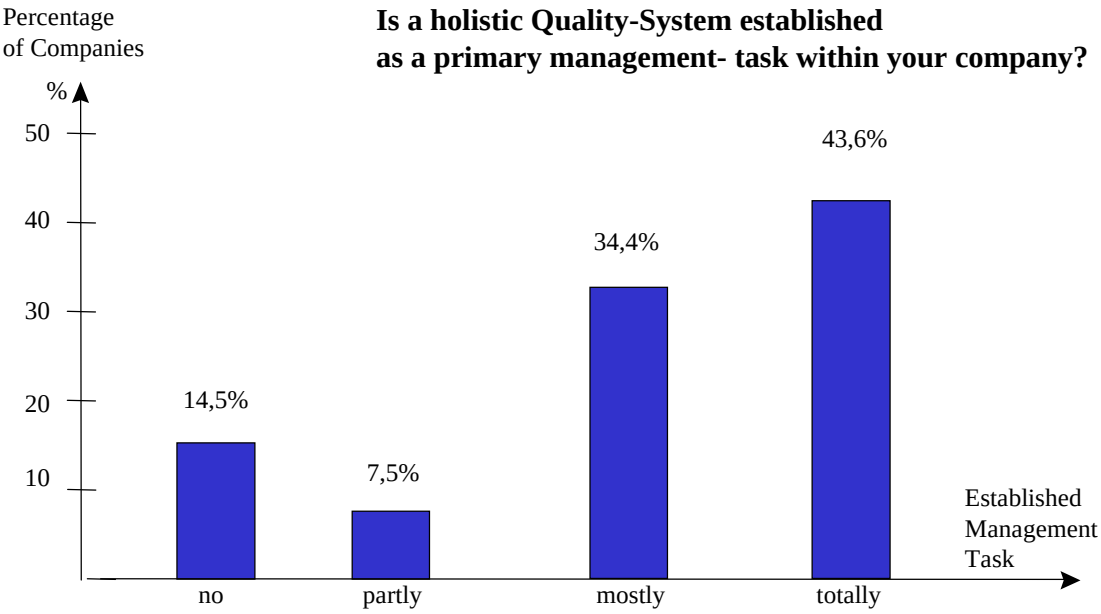

Figure 2: The importance of TQM for European Management

The overall economic situation seems to force companies to think about other means to

compete than focussing on price and timeliness of deliverables or speed to market. This brings quality into the minds of top executives. Good foundations for TQM were set by the introduction of ISO 9000, but this is not the end, only the beginning of the search for excellence. Practitioners of ISO 9000 feel this need especially strong, if they are not involved in ISO 9000 only for the certificates, but really to improve their companies.

Two areas of TQM are especially new and demanding for these managers. Whereas all the enabler-criteria in the model cover standard management activities, the aspects of "People Satisfaction" and "Impact on Socity", are not established. Therefore methods and tools are missing. But detailed knowledge about human and social factors in the organisation is a prerequisite to enhance the position of European enterprises on the world markets.

The European Research project AnaFact bases itself on this approach which provides the first complete European Model for TQM application (figure 3).

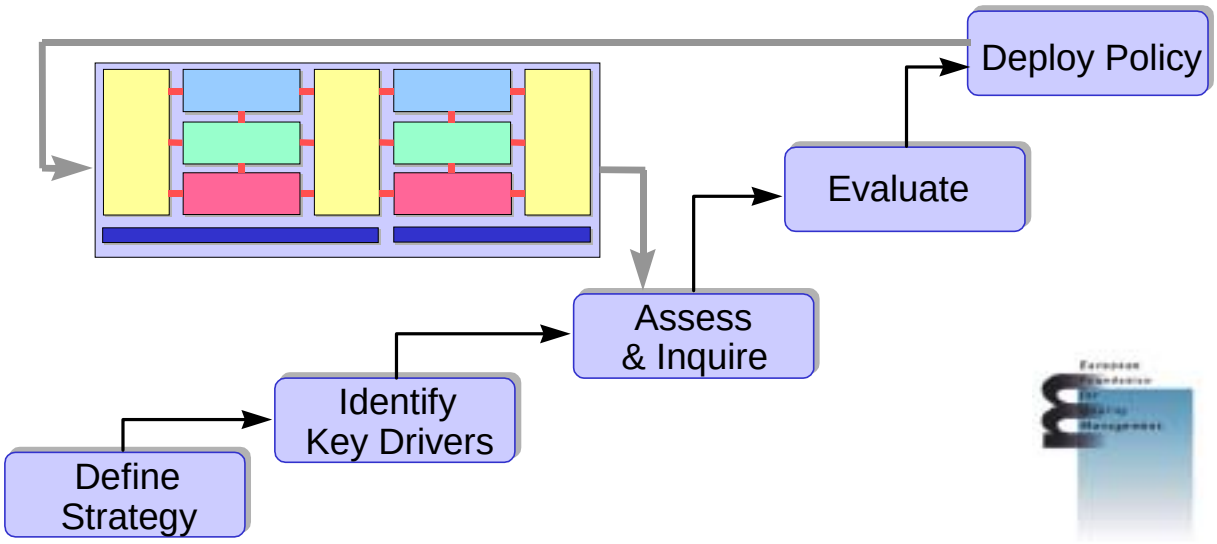

Figure 3: AnaFact Architecture and link to EFQM Model.

The AnaFact product can be considered **unique** as it provides full support for the whole TQM process, starting with the self-assessment concept and the business key drivers' identification and leading to the policy deployment. Also its specific support on the Results and Enablers criteria assessment and evaluation are not found in the existing tools.

The AnaFact product can be considered as **modular**, as the whole product is constituted by individual tools, each of them addressing to a specific function. Furthermore, the existence of a **TeachWare module** linking all modules together and giving a sound description on the background and foreground TQM concepts, thus creating the required awareness for TQM (philosophy, methods, social mind, etc.), also provides real added value to the AnaFact product.

3 Overview of AnaFact Tools

The AnaFact solution consists of the following modules:

- An Assessment & Inquiry Tool which is reading/writing a database of generic questions + data integrated with a subsetting question tool which allows to generate company and assessment specific questionnaires, to distribute them electronically, to evaluate the incoming answers and to read/write to the questions database. This tool again is divided into 3 modules:

1. A module to identify the Key Success Factors a company believes in, which will be needed to define the strategic quality model, which again is needed to measure the achievements against it .
2. A module to support the EFQM Self Assessment in all its phases.
3. A module for People & Customer inquiries which contains a knowledge-base of several thousand questions, linking directly into the EFQM model.

- A Conjoint Analysis tool, which allows to deepen the analysis in those parts of the assessment which need more focus, or which are hard to catch with common inquiry techniques (e.g. the Social Impact questions).
- A Policy Deployment tool which models the actions deriving out of the assessment on the company strategy.
- A specific, integrated, multimedia-based TeachWare handling the desktop and helping with the implementation of EFQM and use of the tools.

4 How to Apply the EFQM Model Using AnaFact

The EFQM model identifies a set of enablers and results. This framework can be used to assess the quality organization of a company and defines a set of criteria that can be assessed for each enablers or results block. The goals of the EFQM model are:

- To be a framework to help companies develop their vision and goals in a tangible, measurable way.
- To be a framework to help companies to identify and understand the systematic nature of their business, the key linkages and cause and effect relationships.
- To constitute the basis for the European Quality Award as a diagnostic tool for assessing the current health of the organization.

The process the AnaFact tools support is the working process of a Quality Manager.

4.1 How to implement a TQM approach ?

We start off defining the company strategy. We then identify the key drivers that we want to concentrate on. Then comes the assessment step. During the assessment step, we look at the various blocks defined by the EFQM model, and where needed, we support the internal analysis by running inquiries. After an evaluation step, we define what our actions will be to improve our quality. Some time later, we re-assess to validate the effectiveness of our actions. The AnaFact toolkit provides automation and assistance for each of these steps.

4.2 Assessments & Inquiries

The core of the tools consists of the GOA (Group Opinion Analyzer) modules, the first of which is GOA Objectives. This module allows to create or pre-select a list of strategic aims and goals for the company and then to let all decision makers vote on a) how important each of these objectives is and b) the confidence he/she has to really reach that goal. The resulting list gives both the ranking of the identified objectives and the "confidence" status of the company. This then can be used as a starting point to fine tune the companies strategy.

The second GOA module, GOA-EFQM, is supporting the complete self-assessment following the EFQM approach. It contains all questions from the EFQM guidelines and an inquiry engine to distribute subsets of the questions to relevant input givers. The returned "questionnaires" are then reintegrated and the answers accumulated and offered to the "assessor" as a starting point for his work. The tool then supports him in all steps of the assessment and automatically calculates all benchmark values. In case the assessor disagrees to any pre-calculated value from the distributed inquiry, a window opens, which allows him to explain the reasons behind this.

The third module – GOA-Inquiry – supports the design and implementation of large scale

inquiries, like e.g. customer inquiries. The tool offers a big knowledge base with questions, designed in such a way, that they link in directly to the respective chapters of the EFQM model. The questions can then be adapted to the companies specific reality, but will still retain this link, so that they can be compiled as a baseline for starting part of the assessment process. GOA-Inquiry also permits to cluster answers and benchmark this years results with last years data. All results can be given both as figures or as graphs.

4.3 Conjoint Analysis

In addition, and for more elaborate assessments, the inquiry phase can be intensified with the Conjoint Analysis tool which validates the inquiry outcomes, by determining what is really important for employees, customers and the social impact. Conjoint analysis is a market research method, which is based on consumer utility and choice theory in microeconomics. In conjoint analysis respondents choose between different profiles built up from product's or service's features. Needs and attitudes are being measured as utilities gained from features. Apart from traditional market research methods, in conjoint analysis whole product and service profiles are being presented to customers enabling the simulation of a realistic situation.

After respondents have set the designed profiles in their preferred order, i.e. by giving points to them, one can tell which features are the most important ones for them. In conjoint analysis you can also measure which feature levels bring the largest utility. With an AnaFact Generic Conjoint Analysis module one gets these results immediately the module also provides you with the possibility to compare how one can compensate the changes in one feature with another feature. According to the importance of each feature, the feature utility level and the trade-off effect, one can concentrate on appropriate features in their business.

For the purpose of AnaFact the Conjoint Analysis tool was extended with a World Wide Web function to ease and speed up the collection of evaluation and assessment data into the AnaFact Toolkit. This contributes also to lowering the costs of studies done with the toolkit. Compared to traditional response collection using paper forms and mail-outs, time and cost advantage of WWW-satellites is enormous.

4.4 Policy Deployment

The final module is the Policy Deployment module which has two purposes: the first is the ability of the module to help generate a consistent action list or action plan with the input provided from the evaluation module, in which the improvement activities were compiled.

The second purpose of the policy deployment tool is to enter and visualize the process model, product model, supplier model, resource model and TQM model of the organization. This information defines the actual way of working, including links to several procedure descriptions. Any improvement planned in the organisation needs to be translated to this level of detail. This tool allows to identify these improvements and to link them with the model information. It also contains facilities to enter the information, to modify it and to generate documents from it.

The TQM improvement activities are identified, described and linked with the model information. The tool allows to generate project planning data from the improvement activities identified.

The policy deployment tool finalizes the evaluation and results in a detailed action plan for quality improvement. This tool links the conclusions of the assessments to EFQM model elements. It closes the loop of our TQM process towards the actual way of working (results and enablers).

Basically, the policy deployment tool allows to identify effects, linked to EFQM Results subcriteria. It then goes on to identify causes ultimately leading to actions. The actions are the true means to achieve quality improvement. So, these are related to EFQM Enablers

subcriteria.

The causes are linked to elements of the process model, product model, supplier model or resource model. The effects and actions can be linked to external data, called target measures. A target measure could be an assessment score that we hope to improve next year. Another target measure could be the number of products returned.

5 TeachWare

The TeachWare tool is an interactive multimedia-based solution to provide training and implementation support for Total Quality Management. It provides a complete step-by-step guide showing managers and quality responsibles how to apply the EFQM Model. Additionally the TeachWare features case studies and interviews with industry executives.

It is primarily aimed at business managers and quality specialists with interest in the EFQM model. Referring to the target groups the TeachWare covers the following areas:

- TQM implementation and applying the EFQM model in practice
- The principles of quality and quality management
- The deployment of the EFQM model inside companies. A comprehensive methodology of how to implement and how to train people inside the company and to learn about the concrete field problems when implementing the EFQM model.
- Detailed information on preparing self-assessment according to the EFQM model.
- Revealing accounts of companies successful applications for the European Quality Award (EQA).

6 Industrial Significance and Benefits

The knowledge on TQM in industry is quite shallow. The Fraunhofer-Study [2] shows, that more than 40% of the quality managers have virutally no education on the most relevant model for Business Excellence, the EFQM-model. Only 13,7% have solid knowledge on EFQM. The AnaFact-Software-Toolkit allows an easy and cost efficient entry to this area. Managers and Quality-Engineers do get a common and motivating entry to this challenging and lasting task of transforming an enterprise into a role model in all of areas of EFQM.
Another very important area, which is effectively supported by the AnaFact-Software-Toolkit is the satisfaction of employees and customers, which can be analysed with the GOA tool. More than half of the surveyed companies do neither analyse the satisfaction of their customers nor the motivation of their employees. This is outright dangerous to basically ignore the needs and demands of these groups. The worst companies experience difficulties in the market for customers as well as employees, to a big part due to this.

On the other side are the rewards of comprehensive TQM numerous:

- Motivated employees, that care to serve the customers and apply their creativity to further business development.
- Satisfied customers, that keep business and are not to price-sensitive.
- Positive image on Society, which serves as a basis for customer and employee satisfaction, since reputation will help on the labour market as well as in negotiations with officials.
- Better Business Results: This category is always questioned by adversaries of EFQM. They question the holistic approach and some of the efforts necessary to obtain Total Quality. But the opposite is true. The holistic approach is the key element that distinguishes TQM from all other remedies for businesses, it adds up and multiplies all effects, as can be seen in figure 4 for the US-American version of TQM.

The "Baldrige Index" once again has outperformed the Standard & Poor's 500 by more than 200 percent, according to the Commerce Department's National Institute of Standards and Technology.
The "Baldrige Index," a fictitious stock fund, is made up of publicly traded U.S. companies that have received the Malcolm Baldrige National Quality Award during the years 1988 to 1997.
NIST found that the group of six whole company winners outperformed the S&P 500 by 2.6 to 1, achieving a 460 percent return on investment compared to a 175 percent return for the S&P 500.

Figure 4: Financial Effects of outstanding Total Quality Management [3]

The effects of TQM are overwhelming, software-tools are developed, so why are there only a minority of companies on their way to Business Excellence?
Even with the AnaFact-Software-Toolkit situations may occur in the implementation of TQM within a company that need specific actions to overcome obstacles and get things done. A experienced project-leader can handle such situations. Another alternative is to get help from outside consultants. They are able to base their judgements on experiences from various similar projects. They can propose various alternatives in difficult situations. Or they may be helpful in defining the most urgent activities for a company.
The trick for successful advice in the area of TQM is often, not only to get support in the method-specific tasks, but to find a partner with practical experience in the transfer from concepts to real world processes. This means a long term relationship, where the consultant is able to solve everyday problems within the company. Otherwise the best concepts die due to the lack of applicability.

7 Conclusions and recommendations

TQM is to important to let a project fail. Success Factors for a successful implementation are:

- Get every help you can get. From software, seminars or consultants.
- Involve your top-management, without solid backing from them, the project is doomed.
- Be sure to be able to cope with the practical problems of introduction of EFQM.
- Start now to use the benefits early.

Overall it will not be an easy project. It will be a long and hard journey to new frontiers. It will challenge your whole company. Sometimes you will have to struggle to keep going. But keep going, Business Excellence is worth it.

8 Literature

[1] http://www.efqm.org/

[2] Bading, Alexandra; Frech, Joachim:
Umfassendes Qualitätsmanagement, Dienstleistungsqualität, Zertifizierung und Qualitätspreise. Fraunhofer-IAO, 1997.

[3] http://www.nist.gov/public_affairs/releases/n99-02.htm