„Quality is management style and organization culture”
Crosby

1.1. RESULTS OF TOPIC SELECTION AND AIMS OF RESEARCH

Quality management has came to the focus of attention in the last two decades. It was due to the dominancy of the demand market, liberalization of commerce, our EU accession, interest of the media, management practice based on a special economical philosophy of multinational manufacturing and trade enterprises, and last but not least marketing activity of quality management consulting companies that realized market by the division of labour. These effects resulted in becoming a separated discipline in the world of science, its practice became a separate profession. This can be considered as an appreciation, its value rooted in the fact, that it is based on performance, fulfilled real social and economic needs in market circumstances. Unfortunately, these statements are not as true in the case of food industry, that is why I focused on quality management during my research, and within this the role of human resource. I am convinced, that the main factor of development is the human being, particularly if he/she is manager. If there is the willing and ability to change from the human side, this is still the first – though the most important – step, practical tasks require special knowledge. Of course, there is assistance and expertise, but standard approaches (ISO, HACCP, EUREPGAP, IFS, BRC) do not give solutions to everything. That is why I am concentrating on establishing a model appropriate to help gathering up of producers in one particular sector: fruits and vegetables.

During studying adaptation of quality management systems and methods in the food industrial sector, I carried our detailed enquiry on organisational environment implementing quality, and within this, assessment of factors effecting quality production, organisational impediments hindering processes and the role of outside factors. I also examined motivators of safe food production and assessments of principles and management tasks regarded as important during operation and management decision makings according to the literature and my technical experiences. By this attitude analysis, I try to find answers to the questions, that help the sector to form an appropriate strategy meeting the current (market controlled) requirements, to evaluate properly human resources and knowledge and to put commitment and responsibility of the manager into focus. In the second part of the dissertation, I am dealing with the problem of fruit- and vegetables industry. First of all, I try to find

possible solution to the effects of the drastic reorganization of channels of distribution, and the generated higher quality requirements.

In this chapter, I analyse successful European models and strategy search of Eastern-European countries (Bulgaria, Poland) with the same situation. According to my research results, I make suggestions to a model, that meets legal standards, can be a partner of food-chains and offers possibility to the raw material producers.

Objectives of research activity*:*

1. Aimed procession of the literature of quality management, identification and adaptation of methods, that has not been applied in the problem solution toolkit of food industry.
2. Methodological development of research questionnaires with the aim of measuring preparedness of answerers by primer/direct data.
3. Systematization of factors appropriate for analyzing attitudes towards quality in the management of food industrial enterprises, and by questionnaires based on this, surveying approaches for quality.
4. By putting the latest concepts of quality management into the focus, production line analysis of organisational problems of one certain sector (fruits and vegetables), and working out a model, that will help to handle difficulties arose.

2. MATERIALS AND METHODS OF OWN EXAMINATIONS

2.1 FRAMES AND METHODS OF EXAMINATIONS

During my examinations, as a method, I applied partly the questionnaire developed by University of Debrecen, Department of Management and Labour Sciences, and had been planned for empiric examinations of management tasks and functions.

This method is functional, as it aims examination of management tasks, and empirical, as it is based on real enterprise practice and manager experiences (BERDE 2006). This method is primarily based on interviews and company data collections.

Contrary to the practice – besides the questionnaire surveys – I concentrated on the total quality development of a separate sector of fruit- and vegetables production. The difference is in the method, and this method is benchmarking. This conception and method - regarding its philosophy – is exceptionally clear and "simple". Difficulties during its applications are the selection of benchmark, definition of fields of comparison and interpretation of data. Consequently, the application of the model requires certain technical experiences, and - according to PATAKI (1998) – serious management knowledge and creativity. In the course of the research, scene of the selected German model has been visited, and been examined in the form of data collection and interviews. Besides data collection in the scene, I also collected benchmark data form public data bases.

2.2 GENERAL EXAMINATION OF ATTITUDE TOWARDS QUALITY

This examination has been carried out by the help of the questionnaire edited in the research programme of "Functional examination of company management in the agriculture" 345 questionnaires were processed, that have been filled – as an appointed aim - by three levels of management. In the case of organisations, where the size and its structure did not make it possible, duplication at middle management was allowed. Data of 139 enterprises got into the scope of the survey, without territorial restrictions.

Location of the scenes were not guided, directly size not also, but indirectly it can be considered as guided, as examined organisations had to have at least two levels of management. With this only one restriction and great degree-of-freedom I received data

from a sample that originates from the category above entrepreneur/family enterprise. This restriction was essential, quality attitude of managers can be examined only where manager exist. Applied questionnaire consists of two parts. I questioned the age, qualification, position and genera of the data supplier. A general data format had been filled in every scene, that fixed forms of operation and natural and economical indicators. From these, I only used forms of operation as a group forming factor in my examinations. Ten items were trying to be answered in the quality management part of the questionnaire.

2.3. DETAILED EXAMINATION OF QUALITY MINDED MANAGEMENT

Skills and attitudes of determining leaders of food industrial companies have been studied by the questionnaire covering all factors (52) that has a role in quality focusing management.

I tried to find answers for the following questions with the applied questionnaire:

- ✓ Evaluation of factors promoting quality production based on answers of participating companies' executive employees.
- ✓ Evaluation of factors backlogging quality production.
- ✓ Evaluation of factors of socio-economical environment
- ✓ Studying motivators of safe food production
- ✓ Main principles of quality production applicable in management
- ✓ Judgement of the role of management tasks in quality assurance have also been studied in the frame of the research.

I tried to find a method how interviewed people can be grouped according to their knowledge on the targeted field. I regarded this important, as much of them could not learn about quality management during their gradual studies. What they believed it is, or what was taught in the frame of it was though important part of quality management, but there have been a change of paradigm in this field, that have not became completely the part of management attitude. My dilemma was to make this grouping in a way, that answerers should not feel of being tested, but they should be classed into two categories. The first was the category of prepared, the other is the unprepared leaders. I expected the solution from a special approach. I framed a matrix, where factors, quasi equivalent to test questions were applied. After that I asked the relation and experiences of the answerer to the factor. Questionnaire also serves data on the qualification of the

answerers, and the date of its acquiring. As I studied a new technical field, I also asked if they had been participated in special quality management trainings or not. In the answers received from the executives, duty was very important, since in the case of a food industrial enterprise – but it is true generally – responsibility of senior executives is always higher. Age is important also, as this factor shows infiltration of new scientific fields to the practice. Research was carried out in organisations classified to different sectors in the food industrial vertical integrations, on the first hand at raw material producers, on the other at food processing companies. According to my hypothesis, consumers' needs and legal regulations force processing industry to a more dynamic reaction. I integrated questions focusing if the company introduced or applied any quality assurance system, since organisations, where this kind of system is applied, had to go through a vocational, systematic learning process, that has to bee reflected by the answers. Focus areas were described by 7-10 factors per questions, within this, answerers were ranked in a 1-5 scale.

2.4 BENCHMARKING STUDY IN THE FRUITS AND VEGETABLES SECTOR

Benchmarking study was carried by an adaptation of methodology published by CAMP (1988). According to the approach of the author, comparison previously was used to solve a problem, and when it was solved successfully, the job was finished. However, it has been recognized, that this static way of thinking is contrary to the characteristic of the business sphere, that can be best described by the concept of change. That is why it is essential a change in methods also, and the results will be a continuous development towards the targeted aims. Question can be raised, that what should be the object of development, what will bring results? A solution was found, that we should concentrate on business processes, this is what should be perfected, basic processes that operate companies. According to CAMP (1988): "This mean new, important and revolutional perspective to benchmarking". Other authors (TENNER-DeTORO, 1998; IFUA HORVÁTH & PARTNERS, 2005) – coincidently with the establisher of the methodology – highlight, that precondition of the efficient benchmarking is the proper formation of process structures of the companies. Since, it is useless to make efforts in the development of an out-of-date – where aims are not served – processes, no results will be achieved. My researches were carried out in this philosophy in a section of the fruit and vegetable sector, that extends to the delivery of goods to the trade. Adapted

benchmarking process is based on the 10 step methodology developed by (CAMP, 1998). This is an accepted standard, but author emphasises, that this is a frame, from which the number of steps can be determined according to the type and aim of the benchmarking, which is planned to be applied at the given organisation, in this case in my researches. In the method adapted to my researches, which is actually a modelling process, I applied the first four steps.

2.5. APPLIED MATHEMATICAL AND STATISTICAL METHODS

Authenticity of the data was checked by a reliability test, I formulated Chronbach alpha indexes. Database was first analysed by describing statistic methods, after this at connexion examination I used the Pearson's Chi square test. I carried out data reduction by forming main components, and new inherencies were uncovered by main component analysis and discriminant analysis.

3 MAIN ESTABLISHMENTS OF THE DISSERTATION

3.1. RESULTS OF RESEARCHES BASED ON GENERAL DATA COLLECTION

General research of quality focusing approach was based on the management interviews of the studies of the department.

Characteristics of data suppliers are summarized in the Table 1.

Table 1.: Characteristics of data suppliers

FORM OF OPERATION	FREQUENCY	EDUCATION	FREQUENCY	AGE	FREQUENCY	DUTY	FREQUENCY
Joint-stock company	103	Primary school	1	20-29	59	Labourer	3
Limited Company	145	Industrial / trade school	2	30-39	65	Junior executive	43
Deposit Company	6	High school	41	40-49	99	Middle executive	153
Co-operative	66	College	84	50-59	109	Senior executive	139
Others	25	University	190	60-	13	Others	6
-	-	Technical school	25	-	-	-	-
Total	345	-	345	-	345	-	345

Source: own survey, 2003.

3.1.1. Judgement of factors effecting quality production

During arrangement of measured factors by the questionnaire, I did not strive for the sole application of the technical language, I was afraid of prompt, unadvised answers deriving from the misunderstood of the questions. I aimed at using technical terminology of management sciences that has been defined and applied in the last decades, since its content is still valid after the change of paradigm, moreover, it has been appreciated. Table 2. shows evaluation according to the form of organisation.

Table 2. : Judgement of factors effecting quality production in different forms of organisations

Form of operation		Quality measuring	Management	Techn. level	Techn. Attention	Quality of raw material	Order of values	Organization culture	Traditions of production	Qualification	Quality man. system
Joint-stock company	Average	4,53	4,13	4,42	4,66	4,49	3,97	3,66	3,49	3,82	3,92
Limited Company	Average	4,66	4,48	4,49	4,59	4,48	4,01	3,90	3,77	4,10	4,10
Deposit Company	Average	5,00	5,00	3,33	4,00	4,33	4,00	3,33	4,33	3,00	1,67
Co-operative	Average	4,09	4,17	4,00	3,95	4,27	3,82	3,44	3,59	3,73	3,88
Others	Average	4,56	4,28	3,88	4,00	3,76	4,16	4,12	3,64	4,28	4,44
Total	Average	4,51	4,31	4,31	4,43	4,39	3,97	3,75	3,65	3,94	3,99

Number of elements: 345
Source: own analysis, 2007.

During evaluation of data of the table, development of quality management attitude can be the standard, that forms the basis of comparison.(Figure 1)

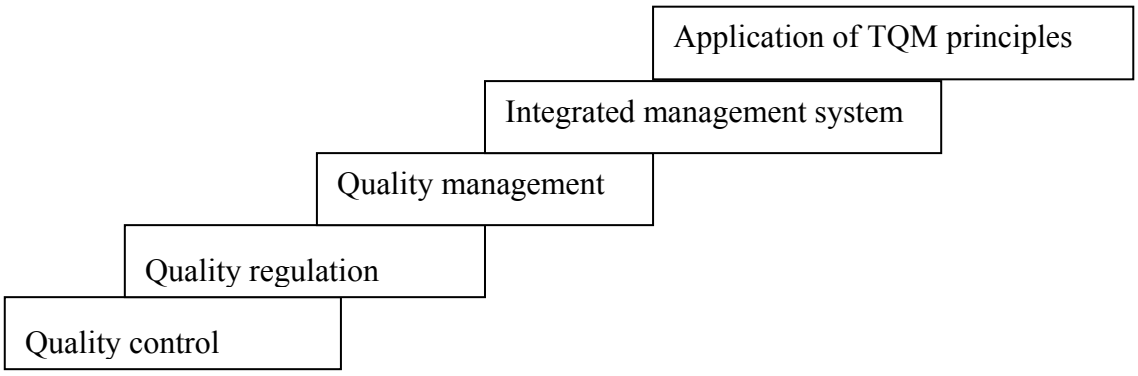

Figure 1.: Realization of quality development

Source: own construction, 2007.

In the approach above (Figure 1.), TQM philosophy does not participate as a direct question, but numbers were given to its elements such as organisation culture, order of values, production culture, qualification, and quality system indicate quite exactly attitudes, exactly which management practice represents the way of thinking of answerers. Value of these factors generally lower than the other, very important ones', but this means, that organisations involved the research are at the level of 60's or 70's. This statement is also supported by the very high value of quality measurement/control. Great value at Deposit Companies is not surprising, but 4,09 points at co-operatives is thought-provoking, since this will be the group of organisations, where reductions and regressions will be general, so these should be compared to the survivors, winners (Joint Stock Companies, Limited Companies) of the sector considering the form of operation. In this context, lower value of quality control indicates rather backlogging than an up-to-date approach exceeding quality control principles. Management, technological level, technological control, preferring quality raw materials characterise Hungarian reality, since these values are higher in the case of Joint-Stock Companies and Ltd-s, which mean that important elements of quality control and management are evaluated properly. Nevertheless, in the case of Deposit Companies and Co-operatives these factors have lower values.

3.2. DETAILED ANALYSIS OF QUALITY MANAGEMENT THINKING

3.2.1. The preparedness of respondents

3. Table: Matrix measuring the preparedness of respondents

Title	Never heard about it	Heard, but do not know	Know	Use it during his/her job
MSZ EN ISO 900x	- 0,5	0	0	0
HACCP	- 0,5	0	0	0
TQM	- 0,4	+ 0,2	+ 0,2	+ 0,2
EFQM	- 0,2	+ 0,3	+ 0,3	+ 0,3
GMP	- 0,4	+ 0,2	+ 0,2	+ 0,2
GHP	- 0,2	+ 0,3	+ 0,3	+ 0,3
Benchmarking	- 0,1	+ 0,3	+ 0,3	+ 0,3
Act of Food	- 0,5	0	0	0
Book of food standards	- 0,5	0	0	0
Standards	- 0,5	0	0	0

Source: own examinations, 2003.

Evaluation: if the sum of the four column's values is larger than "0" prepared.

According to the "test/exam question" in the survey, I classified the respondents into the two different class, prepared and least prepared. The classification was made according to the matrix showed in Table 3. My theory was that the general spread definitions of quality management is well known by all of the leaders, but only those leaders could be considered well prepared in this topic, who understands and uses the whole definition set.

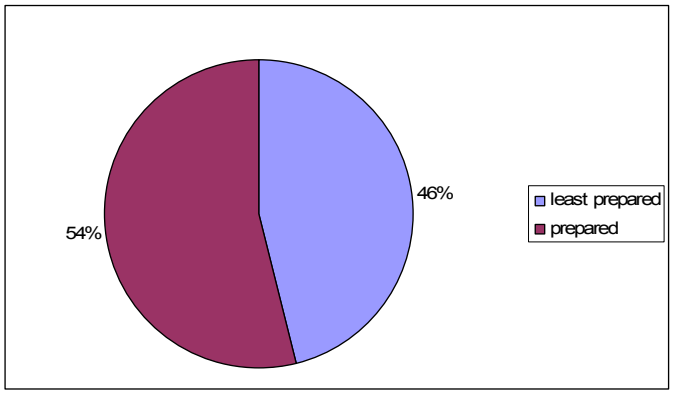

Figure 2.: The rate respondents according to their preparedness
Source: own examination, 2003.

I represent the results on Figure 2., according to which 46% of the respondents could be considered slightly prepared at determining food-industry companies. This data is interesting, it acts as a mirror for the agriculture would fulfil the EU requirements.

Considering the age the respondents are mainly 40-49 years old (39%), 80% of them owns a degree (46,2% university, 34,6% college). Regarding positions 19,3% low, 51,9% medium and 28,2% is top leader. It is a characteristic data, that from 104 examined leaders of which 48 owns university degree, only 26 persons (54%) could be considered as prepared. This proportions equals with the same data of the whole sample. Taking into account that the examined field has become a course material in the last few years, the importance of adult education (leader training) strengthening and renewing knowledge is rising. The Table 4. is supporting this statement, that shows the preparedness of leaders at companies maintaining quality management/food-safety systems.

4. Table: The connection of preparedness and corporate quality management systems

Preparedness	**Quality management system**				**Total**
	none	HACCP	ISO	both	
Less prepared	21	5	6	16	48
Prepared	3	4	39	10	56
Total	24	9	45	26	104

Source: own examination, 2003.

Beside this on Table 4. is suitable to reach an other important conclusion, that at companies maintaining quality management systems it is a basic requirement to train/educate employees, even in the case of leaders. It is an interesting fact that from the 80 leaders 27 person (33%) working for companies maintaining quality management systems (in the following QMS) cannot be considered well prepared. This rate is worse in case of companies that does not apply QMS, where only 12.5 % could be regarded prepared.

I examined how the preparedness is in connection with qualification and I found that the Pearson's chi-square test (Chi= 0.413; df=2, p=0.813) did not resulted any significant difference between the differing qualifications, technicum and other higher education (Figure 3.)

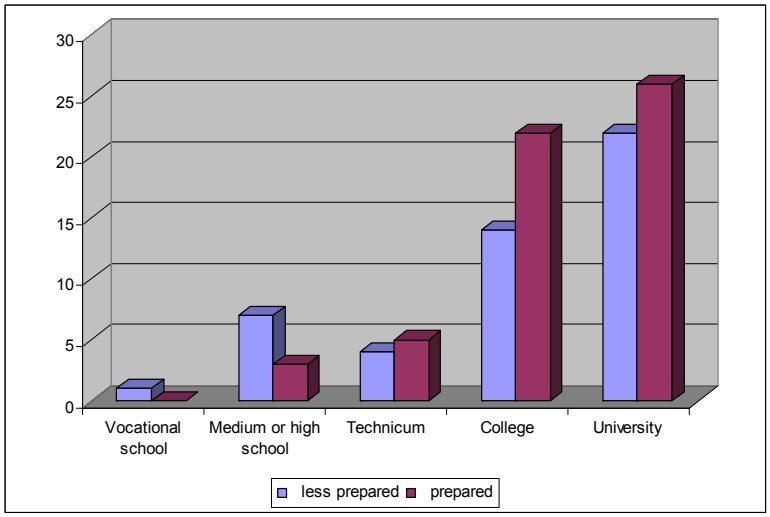

Figure 3.: Rate of preparedness according to qualification
***Source*: own examinations, 2003.**

Similar to qualification, the Pearson's chi-square test (Chi = 1.914; df=2, p=0.384) did not result in significant difference between preparedness and leader levels. It can not be stated that top leaders are more prepared in the field of quality management.

I examined the relation of age and preparedness. The Pearson's chi-square test (Chi=11.272; df=2, p=0.004) pointed a significant difference in the relation of age-groups and preparedness. In the age interval of 30-39 years the rate of prepared and less prepared is almost the same, at the range of 40-49 years most of them is prepared, while in the 50-59 years old category the share of less prepared leaders is higher. There is no scientific explanation of this data - because my examinations did not cover this topic in details – but the theory that younger respondents feels their knowledge fresher, so they do not spend time for self training, while the 40-49 year old segment consider self-

training an important fact. In the case of the elder group (50-59 years) th result seems natural, but the question is that the competitiveness can be sensual to age.

Regarding corporate profile and preparedness of leaders I got the suitable result with Chi-square test (Chi=34.691); df=2, p=0,00 significant difference have shown up. The leaders of companies operating in process industry are even more prepared than input producing or companies with mixed profile. It supports the below mentioned fact that those organisations that are closer to the end-consumers on the producing line are unable to handle quality management issues with low importance, because of market and consumer requirements.

I asked that do the respondents have any special qualification or training on the field of quality management, only 15 persons from the whole 104 respondents answered yes, these respondents belong to the prepared category with the exception of 3 respondents.

The Pearson's chi-square test (with a values of Chi= 34.691; df=2, p=0.000) resulted in significant difference in preparedness and special quality management training/qualification. This data also supports the fact that adult education is very needed, but also shows that that the 80 leaders working at organisations with operating quality management systems did not attended the obligatory trainings held at the installation of the system.

Unfortunately, in this case not the personal decision or attitude matters, but the fact that quality management systems can be installed by the way that formally everything is well done, but in details there are the problems. Simplifying: the system is installed, the consultant is paid, they fulfil the audit, but under the surface the neglecting of regulations can be revealed. This is a characteristic phenomenon of a dissembled world, that can explain why economic successes fail.

3.2.2. The main component analysis and results of the examination of quality management thinking

With the processing of the answers given to the 52 variants of my survey I got a database, which is suitable for various relation examinations between the respondents age, gender, qualification and preparedness. I apart from this "easier" method, mainly because if someone wants to support a phenomenon with numerous reasons the essence will lost in the details. In this case I believe that the fewer become the more, so the results of my questionnaire survey will be presented in the Annexes. For the

aggregation of data, I made a main component analysis and I managed to determinate 17 main components. I present these results in Table 5. With the main component analysis my aim was to group the variants according to their correlation, and also to reduce the number of variants to fewer components, to describe the structure of variants classification, and to determinate the reasons behind variants.

Table 5.: Elements of rotated component matrix

Field of examination	Number	Description of main component	Elements of main components (variants)	Correlation (main component's weight)
a.) Factors playing role in quality production	1.	Culture of profession	Technological discipline	0,761
			Preparedness of profession	0,724
			Quality of inputs	0,636
			Professional self-respect	0,611
			Corporate structure	0,464
	2.	Strategic point of view	Quality management system	0,836
			Corporate strategy	0,811
			Market push	0,604
	3.	Animal and plant health and safety situation	Animal and plant health and safety situation	0,935
b.) Corporate inhibitor factors	4.	Approach problems	Approach of leader	0,847
			Approach of employees	0,792
			Professional mistakes	0,716
	5.	Conservative values	Producing traditions	0,807
			Lack of work discipline	0,569
	6.	Lack of resources	Financial possibilities	0,877
			Technological conditions	0,772
c.) Factors outside corporate/organisation	7.	Factors outside company	Consumer requirements	0,801
			Products of supplier	0,883
			Advisory	0,854
			Research	0,529
	8.	Organisational factors	Corporate relations	0,855
			Determining persons	0,82
			Education	0,522
	9.	Regulation environment	Government	0,857
			Authorities	0,812
d.) Motivators of producing safe food-products	10.	Corporate culture/values	Conscience of employees	0,819
			Preparedness of employees	0,817
			Corporate culture	0,738
	11.	Requirements	Standards	0,87
			Authority control	0,792
			Maintained quality management system	0,624
	12.	Fulfilling the challenges	Competitive environment	0,785
			Level of corporate technology	0,722
			Consumer control	0,624
e.) Quality principles applied during corporate management	13.	Respect of facts	Consumer friendly	0,849
			Decision upon facts	0,849
	14.	Ambition to complexity	Regular self-evaluation	0,735
			System point of view	0,795
	15.	Innovative thinking	Partnership with social actors	0,821
			Continuous development	0,734
			Process based production organising	0,65
	16.	Partnership	Involvement of employees	0,884
			Partnership with suppliers	0,686
	17.	Commitment of top leaders	Commitment of top leaders	0,976

Source: own examinations, 2003.

By using variant analysis I have shown that the main components differ according to preparedness, shown in Table 6.

Table 6.: Differences in factor values according to preparedness

Number and name of main component	Prepared	Less prepared	Sig.	$SZD_{p5\%}$
2. Strategic point of view	0,312	-0,364	0,000	0,263
3. Animal and plant health and safety situation	-0,217	0,254	0,016	0,272
10. Corporate culture/values	0,188	-0,219	0,038	0,274
13. Respect of facts	0,196	-0,230	0,030	0,273
14. Ambition to complexity	0,306	-0,357	0,001	0,266
16. Partnership	0,227	-0,265	0,012	0,271
17. Commitment of top leaders	0,159	-0,185	0,081	0,276

Source: own examination, 2003.

The result of the examination shows definitely that according to the prepared leaders the human resource characteristics, the existing approach, and its coherency are appreciated regarding successful international company management trends.

The rule of partnership become more emphasised in the last few decade's resources, started from the group management researches to the consensus accepted philosophy of TQM.

The importance of top leaders commitment does not need to be emphasized, because all books dealing with quality management start with this theme, or indicate as a success factor in the human factors chapter.

For the importance of corporate culture I made a separate chapter in the literature, because this topic is hard to define, but this is the base of the corporate present and future.

The respect of facts, the fact resulted decision making and ambition to complexity (system approach in management) became the centre of many quality based argument in the 90's. The core of these arguments was not its importance, but the adaptation of this approach to the ISO 9001 standard, that is the base of quality management.

Considering the previously mentioned facts, it can be stated that intellectual relation of prepared leaders corresponds, or closer to the generally accepted modern approach of

quality management, so the installation of quality management systems and maintaining quality trainings has an important effect to the corporate practice.

Beside preparedness, I examined the role of age in the formation of attitudes. It can be shown with the help of variance analysis that only in the case of main component number 5 (conservative values) differs the age groups (p= 0,03). This main component contains the producing traditions, lack of work disciplines variants (Figure 4).

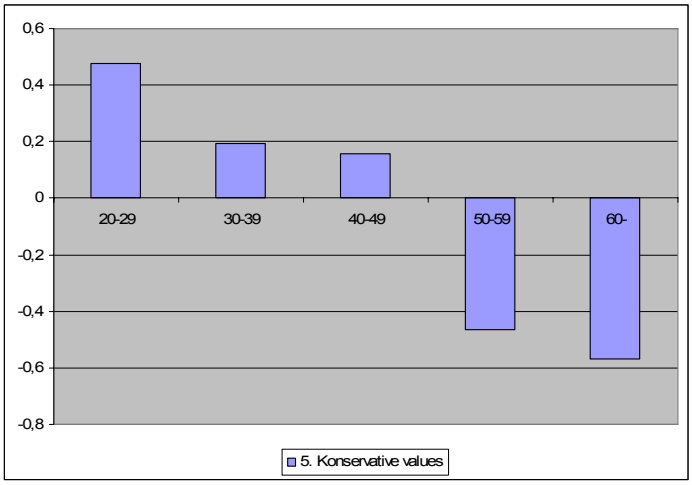

Figure 4.: Differences in main component values according to age groups

***Source*:** own examinations, 2003.

Regarding qualification difference can be notified in the case of 2. and 9. components, as shown in Table 7.

Table 7.: Differences of main components according to qualification

Number of main components	Vocational school	High school	Technicum	College	University	Sig.	$SZD_{p5\%}$
2. Strategic point of view	-0,4971	0,4638	-0,0524	0,2900	-0,2941	0,044	0,270
9. Regulation environment	1,1775	-0,0899	0,1267	0,3080	-0,2606	0,072	0,275

Source: own examinations, 2003.

The respondents having medium/high school or college qualification are closer to that theory that the quality management system, corporate strategy and market pull have a significant effect to product quality, than the respondents with university degree.

According to the gender, significant difference can be noticed also, as Table 8. shows.

Table 8.: Differences in main components according to gender

Number of main component	Male	Female	Sig.	$SZD_{p5\%}$
2. Strategic point of view	-0,0983	0,3463	0,059	0,275
5. Conservative values	-0,1127	0,3968	0,030	0,273
6. Lack of resources	0,0973	-0,3428	0,062	0,275

Source: own examinations, 2003.

According to female respondents, conservative values and strategic point of view have a significant role together in the production of quality products, but technological and financial conditions are not marked as important factors. On other fields there is no other difference in opinions of different gender.

I examined the differences between leadership levels. Most of the differences between the queried leaders can be noticed in this field, as shown in Table 9.

Table 9.: Differences of main components in leadership levels

Number of main components	Low/junior leader	Medium/middle leader	Top leader	Sig.	$SZD_{p5\%}$
4. Problems in point of view	-0,1556	0,2142	-0,2817	0,068	0,274
8. Organisational factors	-0,3774	0,2127	-0,1314	0,053	0,273
9. Regulation environment	0,1626	0,2070	-0,4810	0,006	0,267
10. Corporate culture	-0,5387	0,0568	0,2568	0,017	0,270
14. Ambition to complexity	-0,5209	0,0376	0,2796	0,018	0,270
16. Partnership	-0,4487	0,0148	0,3258	0,025	0,271

Source: own examination, 2003.

A significant part of middle/medium leaders consider large importance to mistakes, leader and employee approach in inhibiting quality product production, while most of the junior/low leaders or top leaders do not have the same opinion.

Medium/middle leaders tend to have the opinion that education, corporate as an identity, group, and government and authorities have an important role in quality production.

According to the top leaders, government and authorities do not have, or only have a small effect on quality production. Significantly large differences can be detected in evaluation of effects determining safe food production between top and low/junior leaders. Most of the low leaders consider the preparedness and conscience of colleagues, and corporate culture more important in production of quality products. Top

leaders consider systematic approach, involvement of colleague, partnerships with suppliers and regular self-evaluation with high importance, opposite to middle leaders.

I examined leader thinking according to the existence and type of Quality Management System (QMS). Similar to the level of leaders, in this case significant difference can also be found. Table 10. shows this relationship.

It can be stated based on my examination, that in those cases where QMS is not available the above mentioned factors are not highlighted as significant in quality product manufacture, and financial possibilities and technical conditions can inhibit the production.

Interestingly the same can be stated about those companies which have HACCP system, with the difference that financial possibilities and technical conditions can not inhibit significantly the production of quality products.

Table 10.: Differences in main components according to quality management systems

Number of main component	none	HACCP	ISO	Both	Sig.	$SZD_{p5\%}$
2. Strategic point of view	-0,7402	-0,7693	0,4929015	0,9644	0,000	0,238
6. Lack of resources	0,1561	-0,7799	,1921218	-0,2066	0,001	0,258
7. Outside factors of company	-0,3854	-0,4623	,2159975	0,1419	0,041	0,271
8. Organisational factors	-0,5859	-0,4669	,1684700	0,4109	0,001	0,260
10. Corporate culture/values	-0,3968	-0,6943	,1596392	0,3303	0,006	0,265
13. Respect of facts	-0,3562	-0,9722	,3452050	0,6789	0,000	0,258
14. Ambition to complexity	-0,8154	-0,3474	,3590767	0,2514	0,000	0,247
16. Partnership	-0,5276	-0,5135	,4039815	-0,1944	0,010	0,260

Source: own examinations, 2003.

The opinion of organisations applying ISO quality management systems is very different from the other two. They say that the above mentioned factors have a importance of above average, and financial, technological circumstances can inhibit production above average level. So the belief of appliers of two big quality management systems differs abut the above mentioned factors. Organisations having no QMS, or having only HACCP can be considered as one category. It is understandable that compared to them those who apply ISO system, we can meet the differences that shows the up to date view. The opinion of those who have been using both quality management systems, is similar to those only ISO system utilizing opinions, with the difference that they do not consider the partnership with the suppliers and the

involvement of the colleagues very important, and according to their opinion the financial, technical requirements do not set the quality production back.

3.3. BENCHMARK PROCESS IN THE FRUITS AND VEGETABLE SECTOR

Steps of benchmarking:

1. step: The first step of the benchmark process, registration of the subject, which needs comparison

Meeting customer expectations

Expectations of supermarkets need to be practically analyzed first, since they represent the fastest developing segment of the market. Most important fields of the green fruits trade of supermarket chains.

- proper volume
- reliable delivery, all the year
- all sorts(from winter products to fresh goods)
- quality product and service
- competitive price
- finance of products
- promotion
- food security

These requirements cannot be met by individual domestic producers. Hoewever, chains of supermarkets cannot respect that, so when a suitable European competitor enters the market, it will be the supplier by the rules of market economy. The reason for losing market in the sector is not only the ignorance of customer needs but the difference in understanding the method of providing goods.

2. Next step is the designation of benchmark, defining the focus of comparison.

Selected benchmarks are organizations of the different, but successful German integration, organizations of the former Socialist countries with similar intentions and Mórakert co-operative. Namely, the Pfalzmarkt and VOG model in Germany, greens and fruit wholesale network in Bulgaria (with 4 wholesale centres:

Sliven,Haskovo,Pleven,DolniDubnikPazardshik) and greens, fruit and flower wholesale in Poznan,Poland.

3. step: Research phase, documentation of the proper good practice.

I have mainly collected data of the previous organizations, these ones may be considered to be the benchmark.

My intention is to find such methods, which work excellently in other organizations, these ones may be received and applied to a domestic model. In the research phase, I applied the process centered approach. Inside, I examine those processes, which are responsible for meeting supermarkets' needs. Those activities may be focused on, which meet the requirement of the process definition, namely: processes establish those results, which are transferred to the customers. The reason for the success is not the exclusive focus on markets, products, organization units or suppliers, but the skill of building out and controlling such processes, which secure:

- the identification of relevant market trends and suitable products,
- recognition, communication and good relationship with markets and customer groups,
- effective organization and production output of productive and service processes, by the required quality,
- the operation of business model promoted by different activities,
- the special control of such value creating processes, where productive ability of partners and private resources are used optimally,
- the efficient and effective co-operation of partners involved in the value creating activity, since these activities mean results and success in the customer society.(HAMMER, 2001).

This spirit inspired me to create such a process structure, which has a role in meeting needs. I introduce it in table 11, with the remark that processes may be broken into further activities. I did not detailed it, since the model does not need that, though it may be suggested or it is inevitable when installed or performance needs to be raised.

The practical applicability required the aggregation of processes by managerial fields, which meets the requirements of functional view control conception.

Based on the decades' operation experience of selected benchmarks, it is obvious, that customer needs (expectations), on the current level, can only be met by only this complexity. The creation of this complexity is a question of organization, there is no uniformed receipt or need, when this principal prevails.

Table 11: Processes and managerial fields of the supply chain (Activity model)

1. Business processes	**2. Management of horizontal processes**
Market management Market analysis, Explanation of customer needs Planning productional requirements Working out market (not main customers) Marketing support Market communication Market follow-up Storage of surplus of goods	R+D (private and procured knowledge) Information management Co-operation management Quality management
Product base planning Quality planning Sort planning Planning time *Handling surplus* New and substitute product planning Production security Cotrol requirements validation *Production* Technology planning, development, selection Management of researches, measures Extension Quality assurance Production, subcontract *Transport management* Identification of suppliers, tenders Development of suppliers Procurement Administration of suppliers Organization of exhibits *Customer management* Management of potential customers Customer promotion (visiting specialists) Management of activity extension Customer account management Creating agreements Management of orders *Logistics and storage management* Planning and managing infrastructure and physical devices Planning logistics and distribution Planning storage and empties Operation of logistics and material control Delivery management Managing subcontractors	**3. Promoting processes** *Business management* Development of strategy Business planning Controlling Business development Organizational strategy Business communication *Management of business processes and operations* Coordination and integration Control Development of processes Benchmarking *Finance management* Planning finance, analysis Accounting Finance management Planning and management of taxation Regulation of financial leverages *Legal services* Extension Legal affairs *Human resource management* Planning human resources Creation of logistics and personnel Education, training Labor administration Employee communication

Source: private editing, 2007.

4. step: Definition of production gap

Understanding of production gap

In this analysis I define production as a skill of production segment of the supply chain. It means whether they bear those processes, by which needs of main customers may be met. I do not examine outputs, standard and efficiency of these processes. The reason for that it is hard to organize such co-operative intergation of supermarket chains, moreover a properly constituted organization performs poorly when process productions are poor. In this approach the definition of performance gap means whether we can find identified need meeting processes and whether it can be applied to an organization. When this triple unit is met on each process of the process planning model, then supply chain is able to operate principally, it meets the needs of the stakeholders. When complexity cannot be met, then other actors (wholesalers, nappers, foreign suppliers) fill in this gap, validating their interests, making the supply chain more expensive, reducing the profit interest validating ability, organization and development potential of producers. Shortly, it conservates the current situation. Considering the complexity of establishing an ideally operating system, harmonizing different interests (with strong emotion judgements), I worked out an organization planning model, which is introduced in table 12. Benchmarking aspect provides the stream line, it is based on the process planning model, works with objective and measurable categories. It is easy to use until problems are treated theoretically. Its planning scheme is the following: all processes of the process structure must be paired with the defined requirements of customer expectations. When these relations are cleared, crossfunctional intervention fields must be paired with organizations, we look for host for the process. Process host can be an integrator (I), a member organization (T), or a market actor (O) with the subcontracted process, when the other ones are not available. In this case, it is important not to pair the outsourcing partner with the core process. It is possible, that a process cannot be paired with any organizations. In this case, this process must be developed/established mainly by the integrator for operating reasons.

Table 12: The model of greens fruit production distribution and co-operation. (Organizational planning model)

Process name	Customer expectations							
	Volume	Delivery security	Sort of goods	Quality product	Price/cost	Finance	Promotion	Food security
Management field 1.								
Customer requirements	I	IT	I	TI	IT	IT	I	T
Process name								
……								
Management field 2.								
R+D	O	TI	O	IO	IT	OIT	OI	ITFO
Process name.								
……..								

Source: private editing, 2007.

Legends: T = member organization; I = Integrator; O = Outsourcing; F = Process/subprocess to develop

3.4. EXTENSION OF THE APPLICATION OF EFQM EXCELLENCE MODEL

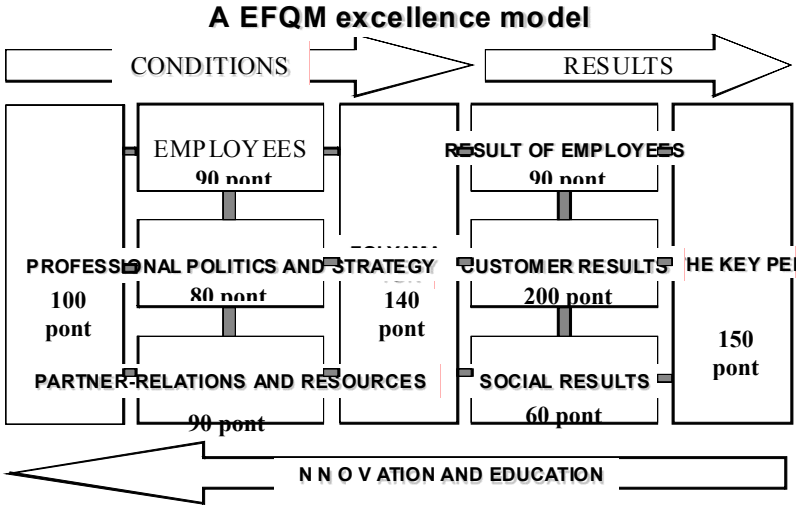

Figure 5.: EFQM Excellence model
Source: **I. 3.**

In 1989, 14 leading European companies established the European Foundation for Quality Management-EFQM, with the intention of promoting the competitiveness of European companies, with the mission to incite and help companies to understand and apply TQM principles. The benefit for the EFQM excellence model (Figure 5.) is to enable the calculative definition and evaluation of the private Management Control System, as a self evaluation system. In the popular approach, the EFQM model is usually paired with the National Quality Award and the European Quality Award. This model could be applied practically in the usual activity, but it is not properly acknowledged. The reason is the poor acknowledgement and use, moreover it hard to communicate as an external market value measure device. On the other hand, those organizations need to be developed, who operate ISO 9000 or other requirement standards. Knowing the current situation, I developed further the application of measurement results of the EFQM model. EFQM model evaluates by a 1000 points system, identifies strenghts and weeknesses of the organization, locates most important fields to develop, helps to determine trends of development. Measurement evaluates skills/conditions and result elements, it provides index for the total efficiency. This index may only be compared by former performance, it is suitable for timeline evaluation, it locates the position of the organization on the way to the excellence. It may be applied to compare internal efficiency, since the comparison of 2 measured groups of elements (condition and results) indicates what an organization can achieve by private condition. This is illustrated in table13.

Table 13.: EFQM model points

CONDITION ELEMENTS			**RESULTS ELEMENT**		
Title	*Max. points*	*Sample*	*Title*	*Max. points*	*Sample*
Management	100	80	Results of employees	90	80
Employees	90	70	Customer results	200	160
Professional politics and strategy	80	70	Social results	60	50
Partner relationship and resources	90	65	Results of key performance	150	130
Processes	140	105			
Total point of condition elements	500	390	Total point of result elements	500	420

Source: private editing, 2007.

Calculation of internal efficiency index may be done by the application of theses points.

$$\text{EFQM internal efficiency index} = \frac{\text{Points of result elements}}{\text{Points of condition elements}} = \frac{420}{390} = 1{,}076$$

When the value of the internal efficiency index is multiplied by the total performance value of the model, that is 810 points in the 1000 points system, than such a value is achieved (810x1,076= 871), which illustrates the scale of meeting all stakeholders' expectations beside defined conditions. The question arises what an organization can do when the harmony of total performance declines. The philosophy of EFQM model provides the answer for that, which is innovation and learning. Despite good examples we can state that social movements, structural reorganizations speeded up so much that it is hard to recognize dangers, moreover it is hard to calculate by objective indexes. This index, measuring internal efficiency, can help this way, the attribute of that is the innovation index, so I defined it as an innovation efficiency index. This index, multiplied by the total EFQM value points means the total value modified by the innovation performance. The measurement of efficiency, by the development of EFQM model approach, may be extended to such fields, where a project needs to be evaluated, when it has its processes and qualitative measured results.

4. NEW AND NOVEL RESULTS OF THE THESIS

1.I have realized by learning the attributes of the prepared self-evaluation model of European Foundation for Quality Management (EFQM), that result elements of questionnaires and tests may be applied to define an indicator called „Innovation efficiency index", which represents that efficiency how an organization uses its conditions. This index may be applied to corrigate the total points of the model by the innovation performance.

2.The questionnaire, which measured quality affair knowledge of managers, it measured the preparedness of interviewees by real knowledge, prime/direct data, instead of the usually applied qualification.

3.I have found by the examination of general quality cognition, that:

- Interviewed managers prefer factors of the 70s and 80s out of the age related factors of the professional literature, from the quality production point of view, compared to the current quality theory/control approaches.
- Corporates by organizational classification, leaders of large companies by organizational scale may be considered as progressive persons.
- Considering management knowledge reflecting modern organization leading practice, there is no significant difference between managers by qualification and position.
- I have found difference by age and corporate profile (interviewees of the age of 40-49 seemed more prepared, together with leaders of the processing industry, than leaders of stock producing companies).

4.I have found by the precise analysis of quality cognition, that:

- Managers of organizations applying Quality Assurance System slightly (19%) participated in that compulsory quality training, which formed a part of the system installation. It obviously means the emphasis on formality instead of content.
- Prepared managers, based on cognition, may be distinguished from the poorly prepared ones by strategic view, emphasis on corporate culture, respect of facts, the acknowledgement of partnership and the commitment of the management to the quality.

- Cognition of managers of those organization, who installed ISO 9001 quality assurance system, considerably differs from those ones, who do not operate Quality Assurance , or only operate HACCP system.

5. To handle the organizational problems of the greens fruit sector, I have adapted the bechmarking process to the sector and worked out an „Operation and Organization Development" model.

5. PRACTICAL APPLICABILITY OF RESULTS

In this constantly changing and global world of us, quality became an important value index. In this aspect, success and survival of organizations/corporates largely depends on the proper understanding of external and internal environment, where they operate, the skill to create a strategy harmonizing main streams of progress and the knowledge to manage realization. Results of the thesis, if only in a small scale, may contribute to the understanding of environment of operation, may serve as a leverage for strategy and program establishment and mostly the recognition of knowledge necessary for realization. An important element of quality affairs is the decision making by facts, which may be promoted in practice, or in research, by the direct approach of edited questionnaire to the preparedness of interviewees. Researchal results suggest that managers of food industry enterprises differ in preparedness and cognition, and the ratio of those ones, who need a great emphasis on quality affairs as a part of regular knowledge renewal. Academic organizations may wonder that there is no difference in the preparedness by qualifications, the reason for the difference is the human resource development activity of corporate practice. Results may be applied by planning organizational trainings, subjects of training institutes. Systematic consideration may be suggested to decision-makers, consultant organizations and auditors by installation/maintenance of quality assurance systems in point of planning, realization and evaluation of education requirements. „Activity" and „Organizational development" models, developed to handle the problems of the greens fruit sector, may be applied at the promotion of action plans of structural politics, including the planning of financial support. It may be applied for planning new generation product line integrations, for modernization of the operating ones and the development of acquisition strategies needed for the European integration. The application of researchal results of EFQM model and the measure of the efficiency of innovative performance may be useful for corporates managed by modern leading theories and philosophy. Comparative aspects may be extended by the corrigation of the total points of self-evaluation with innovation performance.

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