RIGA TECHNICAL UNIVERSITY
Economic Faculty
International Economic Relations, Transport Economics and Logistics
Department

Dmitrijs SOLOVJOVS
(doctor. cert.: AD Nr.036)

MODELLING OF QUALITY ASSURANCE AND MANAGEMENT IN TRANSITION PERIOD COUNTRIES

Doctor disertation summary

Disertation scientific supervisor
R. POČS
Dr. Habil. oec, Professor

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GENERAL SUMMARY

Topicality of the research

Operation of any organisation (public, corporate, state or self-government institution) and any structural entity of such an organisation implies interrelation of a wide range of processes, constant exchange of information between the entities of the particular organisation, co-ordination between decision making and execution functions etc. For successful functioning and development of an organisation all these processes have to be transparent and clear, mutually co-ordinated and manageable, they have to comply with the overall policy and goals of the operation of the organisation. The interrelated processes are to be reflected in the core organisational process - the management of an organisation, including also quality management.

The system of quality assurance and management is the basis of the management process and thus also the stronghold of any organisation. The principal goal of quality assurance, irrespective of its structure, scope or form, is continuous management of the quality process, which in its turn implies verification and co-ordination of the organisational capacity and resources, continuous enhancement of efficiency of the performance of the organisation, as well as increased satisfaction of the needs and requirements of customers and other parties involved.

The stringent competitive environment of the market economy forces thousands of companies and organisations in all parts of the world and all economic conditions to focus on the issues of quality management and assurance, necessitating to constantly develop and implement new quality assurance systems, programs, and standards. Quality assurance is an absolute necessity for a particular company to reassure the customer about the excellence of the product manufactured or the service provided. Introduction of a quality system is a guaranty that the company is thinking about satisfaction of client's needs and requirements and enhancement of the efficiency of the performance of the organisation on the whole.

The last five decades have distinguished quality management in the advanced economies as an essential driving force and motivating factor for carrying on business activity. In the advanced countries the development and implementation of a quality system is one of the most relevant preconditions for successful operation of organisations and business entities. The decision on the development and implementation of the system of quality assurance may be affected by a number of factors: the development of clients' needs and desires, constant upgrading and improvement of products and services offered by competitors, evolution of the requirements of co-operation partners and suppliers, etc.

The development and implementation of a quality management system is equally strategically important both for organisations operating in the transition period economies or developing economies, including also Latvia, as well as organisations of advanced economies. At the same time, the situation is compounded by the fact that alongside with dealing with the fundamental tasks in the organisations of the transition period economies, these organisations are to address complicated and at times critical additional problems, besides, they have "to fight with" with the impact of unpredictable external factors. At the same time, organisations that operate in the transition period economies can learn from the experience of the organisations and business entities of already well established advanced economies.

There are many systems and models in the world oriented towards quality assurance, supervision, control and management. In this respect Latvia is no exception either ~ over the last decade massive efforts have been made in the country in the sphere of quality management. However, these measures may not be automatically introduced in organisations that operate in the conditions of the transition period. It is necessary to adapt the quality system with due consideration of the specifics of the operation of the particular organisation, but even then the existing models of the operating systems may fail to fully ensure and manage quality processes under specific conditions of the transition period.

Implementation of the principles and methods of quality assurance and management and promotion of this process in Latvia is currently only in an its initial phase. The period of less than ten years is a relatively short timeframe for approximation of the popularity and awareness level to that of the developed European states.

The organisations operating in the conditions of the transition period are faced with several internal and external problems that are not existent in the organisations of developed economies. There are several factors that create these problems - hardly predictable political and economic environment, regulatory hindrances, uncontrollable external effects, sceptical attitudes of individuals towards any changes, unwillingness to follow novel trends and to support the processes undertaken. The latter may be partly explained by the fact that many persons are unable to promptly react to the changes and adapt to them due to insufficient knowledge and inadequate qualifications. Therefore quality systems in the transition period have to deal with all these hindrances and also systematically encourage functional efficiency, by ensuring opportunities for continuous growth and advancement. Considering globally established methods of total quality management and assurance, none of them can be directly transferred to effectively function in the economic environment of the transition period and developing economies.

Introduction of unadapted models of the existing quality assurance and management system, even if these models have proved efficient to enhance successful performance of organisations in a stable developing economic environment, is not recommended, since they will not cope with their direct functions in organisations operating in the conditions of the transition period.

This, of course, does not mean that organisations operating in the transition and developing economy period are not aware of quality or do not practise the existing quality systems. On the contrary, organisations operating in the transition economies are increasingly interested in the techniques of quality assurance and enhancement. For example, since the mid 90s, more than 250 Latvian companies have obtained ISO certificates. For more than a decade, Latvia has been actively participating in such public quality organisations as the Latvian Quality Association and die Latvian National Association of Quality, which promote the development of quality processes both on a national scale and at the corporate and organisational level.

There are several quality certification and standardisation centres and organisations in Latvia, consultancies providing consultations on quality related issues, several educational institutions training quality management experts.

At the same time, the staff of organisations, including also the staff dealing with quality issues, often outline the deficiencies and weaknesses, as well as the problems they had to cope with when developing and implementing quality systems in their organisations. The biggest problems start, when the developed and introduced quality system in the conditions of the transition period fails to function and cannot resist and adapt to internal and external factors. The system that fails to ensure quality management processes is not only useless, but it also becomes a hampering excessive element, since it imposes on the quality staff the functions of operating and maintaining the system. This, of course, may not to a full extent ensure the planned operation of the basic processes, thus seriously hampering the attainment of the goals and objectives set.

The quality system to be implemented in the transition period has to be very flexible and it may not be forcefully imposed. At the same time, the quality policy developed by the management of the organisations has to be clearly defined and feasible.

Before the development and implementation of the quality system, first of all, the management of the organisation and, after that, also all the employees of the said organisation, have to clearly understand that the introduction of quality assurance and management systems may not be effected overnight and that it is not a short-term process. The system may not be simply purchased and installed in the company in the same way as companies buy and install spare parts in equipment.

Indisputably, in order to satisfy oneself whether organisations operating in the conditions of the transition period have from the very start ensured the process of continuous improvement, whether they maximally promote customer satisfaction and enhance performance efficiency, it is vitally important to ensure appropriate development and implementation of a quality management system.

All the factors referred to above ascertain the necessity to develop a quality system, which, on the one hand, would be capable to efficiently function in the specific conditions of the transition period to ensure and manage quality processes in the particular organisation, and, on the other hand, would be flexible and also acceptable to and fully supported by the personnel.

Taking into account the world experience, the current situation in Latvia and in many transition period countries, a question arises - whether to elaborate the methodology, principles, approaches and model for enhancing quality - i.e., a quality system that would be applicable and maximally adapted to the specifics and principles of operation in the transition period and developing economies.

Object and subject of the research
The model of quality assurance and management in the transition period economies, as well as the implementation, approbation and implementation strategy of this model.

Goals and objectives of the research
The goal of the doctoral thesis is to develop, on the basis of the results of the research, a model of quality assurance and management model, as well as a mechanism for its implementation in the conditions of transition and developing economies.

The following objectives were set to attain the goal specified:

- To perform a detailed analysis of the development of quality management and quality enhancement for the transition period and developing economies;
- To select, classify and analyse the factors, which promote and hamper the development processes in the transition and development economies;
- Based on the results of the analysis of the basic factors promoting and hampering quality development processes, to elaborate the measures that should be effected at the microeconomic and national level for enhancing the awareness of the necessity of implementation and development of quality processes;
- To perform an economic feasibility analysis of elaboration and subsequent implementation of quality assurance and management system;
- To substantiate the requirement for introduction of the quality assurance and management system, by applying the results of quality cost structure, economic effect and quality cost share proportion;
- On the basis of the results of the analysis performed, to develop a quality assurance and management model for the transition period and developing economies;
- To elaborate a mechanism for implementation of the quality assurance and management system and to approbate the results of the research in enterprises and organisations in Latvia;
- To promote the development of the quality process and the quality assurance and management system both at the microeconomic and national level. To popularise and promote the development of quality processes in Latvia, by conducting seminars, lecture courses, training programs, by participating in international conferences, congresses, seminars, and scholarly discussions.

Methodological basis of the research
The methodological and theoretical basis of the research is:

- The methodology of quality assurance and management and the process approach developed by the management scientists E..Deming, and J..M. Juran, K.Ishikawa;
- The methodology and requirements of the ISO 9000:2001 quality management system approved by the International Standardisation Organisation;
- Comparative and opinion surveys in the transition period and advanced economies;
- Publications and research conducted by scholars of international renown (Lennard Sandhol, A.W. Feigenbaum, Tarmo Haavisto, Roy Crum, Ole Norgaard, Wolf Scott, E.Stern, Dan Hansen, A.G.Andreev, V. Fejukin, V. Okrepilov etc.);

- Scientific publications and research conducted by Latvian management and economy scholars and experts (Narimants Salenieks, Agris Aizpurietis, Juris Dreifelds, Edgars Balcers, Janis Bole, Dzintars Putnis, Kalvis Torgans, Elvita Rudzate, Guna Miskarova etc.);

- Publications in the mass media and specialised publications;

- Information of the institutions of standardisation and certification of the Latvia Republic;

- Information of the Latvian Quality Association and the Latvian National Association of Quality;

- Information and experience amassed by the author of the doctoral thesis obtained at international conferences, seminars, lecture courses, as well as through contacts with enterprises and organisations of various industries in Latvia and abroad.

Methods of research

The doctoral thesis has been elaborated by making use of scientific methods of analysis and classification of quality assurance and management, statistical methods, questionnaires, the Pareto analysis, inductive and deductive data analysis methods.

Limitations of the research

Due to the specific nature and versatility of quality assurance and management aspects the research had the following limitations:

1. Quality problems are researched mostly from the methodological and organisational point of view.

2. The educational background, age, social status, gender etc. of the respondents of die questionnaires used in the research is not taken into account.

3. The quality model elaborated is of universal and general significance. The audior of the research assumes that economic, social, as well as other processes in various transition period countries, as well as in various phases of the transition are subject to identical principles, they have common features and similar development traits.

Scientific novelty

1. By using, within the framework of this doctoral research, the information obtained from the international questionnaire and the results of an in-depth analysis, the author has established that there is a considerable impact of internal and external factors hampering the development of quality development in the transition period and economically developing countries, including also Latvia. Therefore, the organisations dealing with enhancement of quality processes are not recommended to start with hasty elaboration and immediate introduction of quality systems, despite economic and organisational advantages offered as a result of the introduction of the quality system.

The author offers a new strategy for elaborating and developing the quality assurance and management system: development phases of quality processes depending on the functional goals and development stages rationally combined in three groups or development phases:

Phase I *- The phase of preparation for the pre-introduction and introduction of the initial quality assurance and management system;*

Phase 11 — The phase of risk management and corrective and preventive activities;

Phase III - The phase of further development and perfection of the quality assurance and management system.

2. The author has developed a model of the system of quality assurance and management appropriate for the transition period and developing economies. The model comprises 5 core stages:

   1) the pre-introduction stage for the establishment of the requirements of the quality system;

   2) selection and introduction of the initial quality management system;

   3) examination of the risk zones of the system to be introduced and of the organisation;

   4) corrective and preventive measures for adjusting the quality system;

   5) transition from the initial quality management system to the total quality management system suitable for the transition period with elements of risk zone management and corrective and preventive measures.

The author substantiates the selection and interrelationship of every basic element of the quality assurance and management system and presents the structure, methodology and detailed description of the functioning of all the five elements of the model.

3. The author has surveyed and established, from the various aspects, the situation of the transition period and developing economies with regard to quality development and implementation. The profile characterising the situation has been obtained from the questionnaire especially elaborated to meet this aim (doctoral thesis, annex 5, p. 180), by means of which it was possible to establish the opinion of the entrepreneurs and representatives of enterprises and organisations operating in the conditions of the transition period and developing economies on the situation in the area of quality development, as well as the factors promoting and hampering the process.
4. On the basis of the results obtained from the analysis of the questionnaire, the author has selected and classified the basic factors that either promote or hamper the process of quality development in the transition period and developing economies.
   The following 8 basic factors have been established as the factors promoting quality development:

1) development of national and international standardisation processes;
2) elaboration and implementation 'of the quality assurance and management system;
3) promotion and development of certification, examination and coordination measures;
4) legal stipulation of measures and programs related to the enhancement of quality in legislative acts and other official documents;
5) promotion of national quality and the popularisation policy;
6) promotion of educational and professional training programs dealing with quality assurance;
7) support from the economically advanced countries;
8) support of institutional infrastructure.

The following 6 basic factors have been established and substantiated as the factors hampering quality development:

1) low purchasing ability of the population;
2) lack of competition and minimum choice of products / services;
3) lack of interstate products and services and insufficiently developed level of international trade;
4) insufficiently developed infrastructure;
5) inappropriate management, including also quality management;
6) insufficient knowledge and inadequate general level of experience concerning quality management and assurance.

5. When conducting an international sociological survey by means of a special questionnaire form designed by the author, it was possible to establish and formulate the differences in the position of employees of organisations and enterprises operating in **the** conditions of economically advanced states and those of the transition period and developing economies on the following aspects:

   - the ability to accept the changes;
   - perception of the change;
   - impact of the changes on the performance;
   - support to the change;
   - degree of risk due to the changes;
   - prior negative / positive experience concerning the changes.

6. The author has carried out a detailed analysis of quality cost structure, economic effect and cost proportions. The results of this analysis have allowed the author to work out organisational and economic substantiation for the quality assurance and management system and its implementation.

Approbation and practical application of the main results of the research

The most relevant results of the research are presented in a report form and have been discussed at scientific debates at the 2nd World Congress of Latvian Scientists (Riga, 14 - 15 August, 2001), eight international scientific conferences, several national and international seminars. The results of the research are used in the lecture courses delivered by the author: "Quality management" (Banking Higher School), 'Topical trends in international business" and "International marketing" (Riga Technical University, Faculty of Engineering Economics), 'Total quality management" (Riga Technical University, Institute of Production

Quality), "Total quality - a new approach in business in the transition period economies" (International Economic Summer School, Donetsk National University, Ukraine).
The author has elaborated a mechanism for implementation of the quality assurance and management system and has approbated the results of the research (the elements of the model of the quality assurance and management system) in 2 (two) companies (SIA "Schenker", SIA "Danzas") registered and operating in the Republic of Latvia.
The author has elaborated an electronic quality manual. The electronic manual is an integral part of the initial selection and introduction phase of the quality management system of the quality assurance and management system model. The results of the approbation of the versions of the electronic manual are presented in the doctoral thesis.

Publications of the most relevant results of the doctoral thesis
Scientific proceedings

1. D.Solovjov. Model of the system of quality assurance and management in transition period countries. RTU Scientific Proceedings "Economy and Business". National Economy: Theory and Practice, Section 3, Volume 4. - Riga: RTU, 2001. - pp. 128 - 136.
2. D.Solovjov. The phase for the establishment of the pre-implementation requirements of the elaborated quality assurance and management system in transition period countries. // Scientific Proceedings of the University of Latvia, Faculty of Economy and Management "Problems of development of Economy and Management Sciences", Section IV, Volume 647. - Riga: LU, 2002. - pp. 693 -704.
3. D.Solovjov. Quality assurance and management systems - a relevant aspect of up-to-date entrepreneurship. // Proceedings of the international scientific conference "Business and legal environment: processes, trends and results" organised by Business Higher School "Turība". - Riga: "Turība", 2002. - pp. 256 -262
4. D.Solovjov. A system of quality assurance and management suitable for transition period conditions. Structural description and schematic presentation of the system. // Scientific Proceedings of the University of Latvia, Economy II, Volume 659. - Riga: LU, 2003.-pp. 229-235.
5. D.Solovjov. Development stages and methodology of the quality assurance and management system's model adapted for transition period countries. // LLU Scientific Proceedings of the international scientific conference "Science for the development of rural districts 2002". - Jelgava: Latvian Agricultural University, 2002. - pp. 341 - 348.
6. D.Solovjov. Analysis of the factors promoting and hampering quality assurance and management processes in the transition period and developed countries. // Proceedings of the international scientific conference "Competitiveness of the region" held by the Daugavpils University (Latvia), N. Copernicus Torun University (Poland), Vilnius Pedagogical University (Lithuania). - Daugavpils: 2002. - pp. 302 - 309.
7. D.Solovjov. Total quality - a new approach in entrepreneurship in transition period countries. // Scientific Proceedings of the Donetsk National University (Ukraine). - Donetsk, Ukraine: DNU, 2004.
8. D.Solovjov, A.Burmeister. Analysis of the situation of quality management and the factors hampering and promoting the quality process in transition period and developing economies. // Proceedings of the international scientific conference "Prospects, problems and solutions of entrepreneurship under globalisation". Business Higher School "Turība". - Riga: 'Turība", 2004.

Other publications:

1. Application of the methodology of risk management in the model of quality system in transition period countries. // Proceedings of the international scientific conference "Financial and economic potential of the region". Daugavpils University, Faculty of Social Sciences, Chair of Economy. - Daugavpils: 2002. - pp. 17 - 20.
2. D.Solovjov, R.Počs, L.Matisone. Internal audit - a quality system assurance tool. // Proceedings of the 42nd RTU Students Scientific Conference, - Riga, RTU, 2001. - pp. 270-271.

Reports on the relevant results of the doctoral thesis at conferences

1. D.Solovjov. The model of quality assurance and management system in the transition period countries. // Scientific Proceedings of the 2nd Global Congress of Latvian
   Scientists. - Riga, 14-15 August 2001.-p. 184.
2. D.Solovjov. The system of quality assurance ad management - the basis for the success in business in the 21st century. // The 60th international scientific conference of the Latvia University. Section of management sciences and perfection of management. - Riga, 8 February 2002.
3. D.Solovjov. Quality assurance and management systems - a relevant aspect of up-to-date entrepreneurship. // Proceedings of the international scientific conference "Business and legal environment: processes, trends and results" organised by Business Higher School "Turība". Section 3 "Economic development problems and solutions."- Riga, 12 May 2002.
4. Application of the methodology of risk management in the model of quality system in transition period countries. // The conference "Financial and economic potential of the region" held by Daugavpils University, Faculty of Social Sciences, Chair of Economy. - Daugavpils, 8 May 2002.
5. D.Solovjov. Quality assurance and management systems - the basic factor for an up-to-date entrepreneurship. // International scientific conference "Current development trends of national economy and education" held by Riga Technical University. - Riga: RTU, 17 May 2002.
6. D.Solovjov. Development stages and methodology of the quality assurance and management system's model adapted for transition period countries. // International scientific conference "Science for the development of rural districts 2002" held by the Latvian Agricultural University. Section "Economy". - Jelgava, LLU, 22 - 24 May 2002.
7. D.Solovjov. Internal audit - a quality system assurance tool. // The 42nd RTU Students Scientific Conference, - Riga, RTU, 2001.
8. D.Solovjov, A.Burmeister. Analysis of the situation of quality management and the factors hampering and promoting the quality process in transition period and developing economies. // The 5th international scientific conference "Prospects, problems and solutions of entrepreneurship under globalisation". Business Higher School "Turība". - Riga: "Turība", 2004.

Volume of the doctoral thesis
The doctoral thesis is an independent scientific research written in Latvian and comprising an introduction and the following S chapters:

1. Analysis of the factors promoting and hampering the process of the quality management assurance of the transition period and developing countries;

2. Organisational and economic substantiation of elaboration of the model of the quality assurance and management system for the transition period countries;

3. Strategy and structure of the implementation of the quality assurance and management system model in the pre-introduction phase in the transition period countries;

4. The phase of the risk management and corrective and preventive activities for the model of the quality assurance and management system in the transition period countries.

5. The phase of further development and perfection of the quality assurance and management system model in the transition period countries.

The work contains conclusions and recommendations, a bibliographical list, a list of publications, and 7 annexes. The paper contains 37 graphic figures and tables, all together 194 pages, excluding the annexes. The bibliographical list contains 164 titles.

MOST RELEVANT RESULTS OF THE RESEARCH

1. ANALYSIS OF THE FACTORS PROMOTING AND HAMPERING THE PROCESS OF ASSURANCE OF QUALITY MANAGEMENT IN THE TRANSITION PERIOD AND DEVELOPING COUNTRIES

The first chapter of the doctoral thesis is focused on the establishment of the opinion of the entrepreneurs and representatives of organisations operating in the transition period and developing economies on the situation in the sphere of quality development, as well as the factors stimulating and hampering this process, by applying an original questionnaire form designed and introduced by the author of the research. The international survey was conducted by using this questionnaire form.

The questionnaire was sent out to the personnel dealing with quality issues at such corporations as "Schenker-Stinnes Logistics" AG and "Deutsche Post" AG (quality managers, quality task group managers, deputies of quality managers, quality assistants, internal quality auditors) in the following transition period and developing countries: Latvia, Estonia, Lithuania, Belarus, Ukraine, Moldova, Kazakhstan, Georgia, Armenia, Azerbaijan, Turkmenistan, Uzbekistan, Poland, Hungary, Romania, Bulgaria, Slovakia, Slovenia, the Czech Republic, Yugoslavia, Croatia, Turkey, India, Pakistan, Thailand, China, Indonesia, Vietnam, Mexico, Cuba, Brazil, Peru, Columbia, Uruguay, Paraguay, Chile, Argentina, Egypt, Tunisia and Marocco.

After the communication and receipt of the answers of the respondents, the author has had thorough professional discussions with a number of quality experts from the transition period counties as well as entrepreneurs operating in developing economies. The results of the questionnaire and discussions have allowed the author to conclude that there are several factors that promote and hamper the enhancement of quality in the transition period and developing countries. The most relevant and frequently mentioned factors are presented in Table 1.

Table 1

Summary of the basic factors promoting and hampering quality development in the transition period and developing economies

Factors promoting quality development
1. Development of national and international standardisation processes
2. Promotion and development of certification - examination and coordination measures
3. Promotion of national quality popularisation and stimulation policy
4. Introduction of educational and professional training programs dealing with quality assurance
5. Support from the economically advanced countries
6. Stipulation of measures and programs related to the enhancement of quality in legal acts and other official documents
7. Support of institutional infrastructure
8. Elaboration and implementation of quality assurance and management system

Continuation of the table 1

Factors hampering quality development
1. Low purchasing ability of the population
2. Lack of competition and minimum choice of products / services
3. Lack of interstate products and services and insufficiently developed level of international trade
4. Insufficiently developed infrastructure
5. Inappropriate management, including also quality management
6. Insufficient knowledge and inadequate general level of experience concerning the science of quality management

A more detailed description of the basic factors hampering and promoting quality development processes of the transition period and economically developing countries are dealt with in Chapter 1.1 and 1.2 of the doctoral thesis.

Evaluation of the factors promoting quality development in the transition period and developing economies

The in-depth analysis of the respondents responses to the questionnaire and the comments supplied enables to draw the conclusion that the problems connected with increasing the awareness of the necessity of introducing the quality system may not be addressed only at an enterprise level. There has to be also general support and assistance on the part of national governments. It is necessary to have a nation-wide quality development program. Here much depends on the national policy of the particular state and the position of the government with regard to quality assurance and management issues. In some developing and transition period countries governments are aware of die relevance of the issue of quality. This allows these countries to more promptly and efficiently promote the enhancement of quality levels both on a national and microeconomic (corporate and organisational) level.

However, it has to be noted that many respondents of the international survey from the transition period countries, especially the countries that are still transiting from an authoritarian regime with a centralised command economy and vertically structured management system towards a regime, the functioning of which is based on democratic management principles and free market relations, noted that there are serious problems both at the national and microeconomic levels due to the resistance of people to give up their former ideals and opinions, due to the stagnant position of bureaucracy in dealing with various problems and developing processes and procedures, including also those that refer to the sphere of quality promotion. Therefore, all the activities aimed at essentially promoting quality assurance and management development have to be effected on the national scale.

When evaluating the factors enhancing quality development, me author shows that:

• The development of national and international standardisation processes plays an important role in the acceleration of the development of the economy and the process of industrialisation. Many transition period countries, Latvia including, are well aware of the relevance of this process, and, as a result, have established national institutions, whose basic function is to co-ordinate and promote quality processes. The standardisation process has to be implemented at the national, regional and international levels:

- standardisation at the national level;
- standardisation at the regional level;
- standardisation at the international level.

• Promotion and development of certification - examination and coordination measures

Another important factor that substantially enhances the development of quality development processes is certification, promotion of quality audits and quality coordination measures, which ensures the compliance of a product or an operation of an organisation or a system to the standards set.

Within the framework of certification it is possible to differentiate between product certification, system certification and examination of products and services to be exported.

The aim of certification is to provide customers with true information about the compliance of the particular product to the requirements of fixed standards. In the certification process in the transition period and developing countries there are several relevant reasons for making use of a third party (an independent certification institution).

There is a global tendency to replace product certification with the certification of the management system. In many economically developing countries national certification organisations are becoming increasingly aware of the importance and topicality of the certification of the quality system.

Another relevant factor for enhancing quality development is export audits. They have to be performed with the aim to ensure an appropriate quality level and to guarantee to foreign consumers that the quality of export products meets the internationally ecognized standards and requirements.

Besides the factors referred to above, the factors enhancing quality assurance and management are:

• Promotion of national quality popularisation and enhancement policy.

National quality enhancement programs in the transition period countries are increasingly focussing on increasing public awareness of the relevance of quality development. National agencies, trading and consumer organisations, national and professional unions and associations are all involved in the process of quality promotion. The prerequisites for the success of the quality enhancement program are the following:

active participation of senior level management in the implementation of quality popularisation and promotion process;

observance and popularisation of the principles of transparency;

presentation of national quality awards.

In recent years quality popularisation by presentation of national quality awards has become an especially important factor for raising the competitive edge of various enterprises and organisations in advanced economies. The experience shows that quality award programs very often contribute to the enhancement of quality and productivity even more efficiently than the use of the ISO 9000 quality system. The criteria for awarding the prize become decisive factors for the operation of the organisation, further enhancing the development of the organisation in the sphere of quality improvement.

One of the most important preconditions for the development of quality assurance and management is:

- Provision of professional training and educational programs on quality assurance and management.

Training and education implies more extensive knowledge and a higher level of experience provided by professional training and educational institutions through conferences, seminars lecture courses, experience-sharing programs etc.

Quality awareness is based on the experience and knowledge of the public in the sphere of quality. In developing countries it is very essential to stimulate acquisition of knowledge and experience with regard to quality not only by future specialists dealing with quality issues, but also by company managers, governmental representatives, as well as consumers.

According to the author, other not less important factors promoting the development of quality processes are:

- Support from economically advanced countries.

The support from abroad implies coordination and assistance from international organisations, bilateral assistance programs, experience-sharing programs financed by multinational corporations, any other activities that may contribute to the reduction of the developing stage.

- Support from institutional infrastructure.

Institutional infrastructure, i.e. the services provided by various institutions, standardisation, certification, approbation, accreditation, testing, metrology, quality consultancy, training/education and other spheres.

- Stipulation of measures and programs related to the enhancement of quality in legal acts and other official documents.

National standardisation and certification organisations in the developing countries are established on the basis of legal acts and other regulatory provisions passed by legislative authorities or governmental departments. These documents stipulate the role of national standardisation in the business sector and govern the promotion of quality assurance on a nation-wide scale.

The final and one of the most relevant preconditions for the development of quality assurance and management processes is:

- Elaboration and introduction of the quality management system.

In the complicated economic situation of the transition period and developing countries thousands of companies and organisations have to encounter direct and indirect obstacles essentially hampering their operation due to internal disarray. These factors force to pay greater attention to the problems of quality management and assurance and to constantly think about development and implementation of a new system, programs and procedures aimed at enhancing quality. The results of the poll conducted clearly show that the development and implementation of the principles of quality assurance and management become decisive and absolutely necessary not only to persuade the customer about the excellence of the product manufactured or of the service provided by the particular company, but also contribute to a

more efficient operation of a company or an organisation operating in the environment of the transition period and developing economies.

The original questionnaire form used for the international survey (Annex 5 of the doctoral thesis) contains a section, the purpose of which was to establish the most popular, the most widely used and the most efficient quality system for ensuring initial quality process management.

The analysis of the results of the questionnaire has shown that in the transition period countries (89% of the respondents) the most widely spread quality systems for ensuring initial quality requirements are the quality assurance systems established by the International Organisation for Standardisation and its new version for the year 2000 - ISO 9000:2000. Proceeding from this fact, the 2000 version in this doctoral thesis is taken as the initial phase for quality assurance of management systems (see doctoral thesis, chapter 3.3.2, p.105).

The analysis of the responses of the respondents to the questionnaire and their comments regarding the factors hampering and diverting in various ways the development of quality processes has allowed the author of this doctoral thesis to specify and describe the following basic factors hampering quality development processes:

- Low purchasing ability of the population.

Most of the inhabitants of the transition period and developing countries may be considered to be needy or living under the generally established minimum subsistence level. Their purchasing decisions are mostly motivated only by one factor - the price of the goods of services. Manufacturers are constantly striving towards the reduction of the prime costs, by using cheaper labour resources and lower quality raw materials.

- Lack of competition and limited choice of products / services.

The limited choice of products and services gives the manufacturers a certain guarantee that all the products released will be sold, therefore manufacturers show insufficient interest in enhancing the quality of the products they manufacture. Sometimes thee are also restrictions and barriers imposed on imports and artificially increased customs tariffs intended to protect local manufacturers and thus also local markets from the expansion of products manufactured by industrially advanced countries.

- Lack of cross-border products and services and a low level of the development of international trade.

Several transition period countries lack cross-border exchange, thus the industrial sector is forced to compete with other sectors for the market share available in the particular country. This leads to the obsolescence and more narrow application of technologies, inadequate utilisation of production facilities, and to underdeveloped material and technological base. All these factors directly affect the quality of the products manufactured.

- Insufficiently developed infrastructure.

The infrastructure in the transition period and developing countries is usually insufficiently developed. Several spheres, such as provision of energy resources, transport and logistics, communications, and education / training have considerable limitations, low quality and are insufficiently developed.

In addition to that, the spheres in the transition period counties that are responsible for the enhancement, coordination and promotion of quality (e.g., standardisation, metrology and approbation, training / education and consultancy spheres) are insufficiently developed.

- Inappropriate management, including also quality management.

In the transition period and developing countries the dominant vision among the businessmen is short-term business development, which in its turn fosters a quantitatively oriented management culture. There is no uniform organisational policy, there is no strategically defined transition from the quantitatively oriented policy towards a policy promoting quality development. The management of an organisation rely only on some members of the staff. There is no coordination and harmonisation of the processes.

- Inappropriate knowledge about quality management and general lack of experience.

It is characteristic for developing and transition period countries to have limited or insufficient knowledge in the management and industrial and technological spheres. The experience and knowledge gaps are connected with and can be attributed to the short-range and changing environment of labour resources. In such conditions it is problematic for the personnel to achieve a high level of competence. This fact is also proved by the results of the second international questionnaire aimed at establishing the opinion, experience and general response of the personnel to various organisational changes, innovations, reorganisations etc. (Chapter 3.3.1, p. 91).

Factors promoting and hampering the process of quality development, the analysis of the situation in Latvia

When comparing the results of the questionnaire and, specifically, the responses of the respondents from Latvia, as well as when analysing the current situation concerning the development of quality processes, as reflected in the press, periodicals and scientific publications, the author of the research concludes that since the restoration of Latvia's independence, i.e., since the beginning of the 90s, considerable changes have taken place both in political and economic environment. The rapid development of quality management and related spheres has to be especially noted. During this time a number of international and national standards were prepared, introduced and approbated, for example:

The ISO 9000 standard for the quality management system and the ISO 14001 standard for environmental management systems, the OHSAS 18001:1999 labour safety and vocational health management standard, the HACCP standard for ensuring food safety systems, the SQAS standards for product safety and quality evaluation, as well as many other internationally recognized standards.

There are several international and national certification centres in Latvia that coordinate and control execution of international standards, approve the introduction of the designed quality systems in enterprises and organisations, as well as perform constant monitoring of these entities and periodical audits of quality systems.

Starting with the early 90s, a number of quality management associations of experts and professionals have been set up in Latvia, such as the Latvian National Quality Association and the Latvian Quality Association. These organisations regularly deal with arranging events and training programs and qualification advancement and support schemes to quality management, visits of international quality management experts etc.

It may be observed that the awareness of domestic entrepreneurs and representatives of organisations about the need to elaborate and implement quality processes is growing. This is proved by the fact that already since 1995 more than 260 enterprises and organisations in Latvia have elaborated, implemented and have been certified according to the standards established by the International Organisation for Standardisation (ISO).

At the same time, irrespective of the popularity and rapid development of quality processes, some of the factors that are hampering the development of quality even to date play a big negative role in the development of the process in Latvia.

First of all, there is a sceptical opinion, which is still dominant among many entrepreneurs and especially state and local governments, that quality systems are very complicated, there are too many documents, which are be prepared, there are high development, implementation and certification costs, and other similar pretexts.

Secondly, the personnel of a some organisations and enterprises and also the medium level and senior management do not see economic and organisational benefits, which can be obtained as a result of the implementation of quality management principles.

These rather reserved opinions about internationally recognised quality assurance and management methods result from the lack of information. The negative reaction is also due to certain objective reasons - the lack of methodological and instruction materials published in Latvian, the specific style and complicated language of formulating standards.

Thirdly, this negative attitude against the introduction of quality systems is reciprocally reflected in the operation of these organisations, as well as in the quality of the products manufactured or services provided.

It is absolutely clear that the introduction of quality assurance and management principles and methods and the promotion of this process in Latvia is only in its initial phase. The period of less than ten years is relatively short for the level of popularity and awareness of quality management to approach the level of the advanced European countries.

Latvia on the way to the European Union. Compliance of the development of quality assurance and management with the requirements of the EU.

The drive towards manufacturing of products compliant with the requirements of the European Union (EU) is a gradual process, but it has to be consistently pursued, since otherwise Latvian entrepreneurs will technically fail to launch their products in the EU markets. A great part of Latvian entrepreneurs are well aware of that and try to obtain the lacking knowledge in these matters. At he same time, it is not enough to be able to produce the products corresponding to the EU requirements - this has to be also verified. Therefore in assuring the quality a great role is played by all its aspects: legislation, standardisation, accreditation, metrology, education/training and introduction of quality management systems.

The European Agreement of Compliance will facilitate export

The National Quality Assurance Program was approved in 1994, and every year detailed action plans are being drawn up for its implementation. It embraces all the aforementioned aspects of assuring quality. To introduce the quality assurance program Latvian official

institutions are cooperating with entrepreneurs. At the same time, the interests do not always coincide: entrepreneurs would like to have longer transition periods, but state authorities are confronted with definite EU requirements with strictly defined implementation deadlines.

Latvia for, the time being, is one of the few Central and East European countries that has ratified the Agreement on the Evaluation of European Compliance. This testifies to the compliance of legislative structures of the Republic of Latvia with the European requirements. The talks on the spheres, which will be subject to this agreement, have been completed. These spheres are established, taking into account, which particular system is brought into line; currently this agreement applies to the operation of electrical safety, building materials manufacturing, and the pharmaceutical industry. Soon these spheres would be joined by the toy manufacturing and the manufacturing of individual means of protection. Alongside with the establishment of the spheres, the companies representing the particular industry will be able to export their products to the EU without additional assessment of compliance, which will considerably reduce the costs.

Three thirds of European standards are adapted

Also the second quality assurance element, standardisation, is developing dynamically. The law "On standardisation" was passed in 1998 and it envisaged the reorganisation of the system, by separating standardisation from metrology, which is compliant with the EU requirements. The adaptation of the standards is proceeding very dynamically - already 5.7 thousand of S thousand EU standards have been adapted (the EU requirement is that 80% of the standards have to be harmonized). Coordination of harmonisation of standards is provided for by the legislation. At the same time, the development of the metrology sphere is, on the whole, also proceeding successfully.

Implementation of various education/training programs

Education/training is of great importance for ensuring the introduction of the quality assurance system. A number of foreign training programs are currently being implemented. For example, since September 2000, the Latvian Quality Association has launched a training program for quality system managers, which is conducted once a month. This program will be continued also in 2004, in addition to that, starting with 2003, a program has been developed for quality system auditors. Every year training is offered to the potential winners of the Latvian Quality Award to be presented after Latvia's entry into the EU.

Latvian market - in the initial development stage

Speaking about quality systems, the interest about them is increasingly growing. Entrepreneurs start to understand that by introducing these systems, it is possible to enhance the reliance to the company and the product offered. At the same time, quality management in western economies has been a principal driving force and an essential motivating factor for businesses. However, it has to be remembered that quality management is not a single-time measure but a lifestyle and a new corporate culture. Many companies are surprised, when they get to know that 25 - 30% of the end result of production is lost due to defects and inferior quality of products. When comparing the development of certification systems in other countries and Latvia, it can be alleged that Latvia is still at the very start of this process.

Shift in motivation

The interest about labour safety and vocational health system (OHSAS 18 001:1999) has also increased. The greatest interest about the introduction of the ISO 9000 standard series has been expressed by food manufacturers, transit service providers, building and IT companies. At the same time, state institutions are also increasingly introducing quality management systems.

Earlier, the main motivation for entrepreneurs, when introducing these standards, was the requirements of their foreign business partners, in addition, they were also actively used as marketing tools. Now it has become a necessity to bring into line the management of internal processes. Bringing the companies into line with the standards is also stimulated by tougher tender requirements. For example, in big procurement tenders for the supply of computer equipment and execution of building works there is a requirement to submit a certificate or evidence of the existence of the quality management system. In addition to that, certification facilitates the entry of exporting companies into foreign markets. The average term required for acquiring the certificate in Latvia is 8 - 12 months.

In Latvia, the introduction of the systems referred to above are undertaken by 6 - 7 certification institutions, and the number of firms acting as consultants in the matters related with this process is even greater. "Recently, the interest of foreign consultancy firms has increased. Especially active are Estonian firms. The number of certification institutions, for the time being, is sufficient, at the same time, it has to be recognized that it would be good, if more local firms would start their business, since they are more knowledgeable about the local situation and their services would have lower costs. The insufficient involvement of local firms is connected with the inadequate experience in this sphere.

Objective reasons hampering the process

The Latvian Quality Award is presented, evaluating the company's ability to introduce the best business practice. This model is introduced by the European Quality Fund, the compliance being assessed by 9 criteria, which allow to evaluate the performance of the company from all aspects. These criteria allow European entrepreneurs to gather from 600 to 700 points from the total 1000 points; so far, the respective number of points collected by Latvian companies has been from 300 to 500. Latvian entrepreneurs are lagging behind their European counterparts, Firstly, due to objective reasons - the companies have to regularly perform the analysis of business performance results, which has not been done previously, and have to effect strategic planning, which in our conditions is not possible. Secondly, many entrepreneurs do not understand the concept of interrelation of the various processes undergoing in a company, but this problem can be resolved by the introduction and implementation of the new quality assurance and management system.

By performing the analysis of the factors promoting and hampering the development of quality processes, the author of this research has come to a conclusion that some of the priority tasks to be performed in the organisations of the transition period countries are systematic clarification of quality related matters by the personnel, co-ordination and harmonisation of the organisational, mainly managerial, processes, management of resources, as well as continuous development and perfection of the organisation.

Consistent and successful bringing into line and management of these aspects in the conditions of the transition period is possible by introducing the methodology approach of quality assurance and management.

2. ORGANISATIONAL AND ECONOMIC SUBSTANTIATION OF THE ELABORATION OF THE MODEL OF QUALITY ASSURANCE AND MANAGEMENT SYSTYEM IN THE TANSITION PERIOD COUNTIES

The transformations going on in the transition period at the same time bring along considerable disarray in various management and business spheres. The reorganisation of management and business processes is proceeding gradually, transferring from one system to another. So, for instance, when transferring from the centralised planning and management system to the free market economy, the understanding in the transition period countries about the necessity of the transfer from the command system, with the unlimited powers of official authorities, towards an economy based on the principles of democracy, in which the interests of free economy entities are harmonised and equal participation in making and implementing decisions is ensured, is still forming very slowly.

The processes in an unmanaged organisation are proceeding chaotically, at times hampering each other, there is no movement towards the perfection of the organisation and attainment of corporate goals. It is obvious that such a disorganised system (organisation) is not long-lived, it will be squeezed out from the playing ground either by competition or other external factors. In the transition period and developing economies such organisations are especially sensitive to the impact of the chaotic and uncontrolled external and internal factors.

For the organisation and its processes to function flexibly, it is necessary to have the driving force that would ensure accurate operation of the whole organisation, as well as mutual coordination of the processes, i.e., it is necessary to have a functionally capable and organized management process. The more efficient the management process, the more accurately will function all the other processes, and the more successfully will operate the organisation as a whole. In order to attain such a situation, when management processes of an organisation function in accord with the requirements set and yield positive results, it is necessary to have the structure that would ensure self-evaluation, implementation and promotion of continuous perfection of the management process. Such a structure may be the quality assurance and management system. For the transition period and developing countries the quality assurance and management system has to be applicable to the economic and political conditions of these countries.

Errors may and they do occur in the operation of any organisation. The response of the organisations in such situations is rather typical. The attention is focussed only on the elimination of the consequences of the errors, hoping that the situations will not repeat too soon..

The causes of the errors are not being established and eliminated, which, of course takes time and means. At the same time, the experience of the leading organisations in the sphere of quality shows that the costs of investigating and eliminating the causes of the errors are considerably smaller than the costs in the situations, when the error has already occurred.

This issue is especially topical for organisations operating in the transition economies, since even the consequences of minor errors, in contrast to the organisations of developed economies, may create more serious problems for the functioning of the processes of an organisation. Thus, when considering the elimination of the causes of errors at the very beginning, by introducing basic quality principles in the operation of an organisation, it is

possible not only to bring into line the operation and processes of an organisation, but also to considerably reduce the costs related to the elimination of the errors.

Management, accounting and control of quality assurance and management costs is one of the most important processes, when developing organisational goals and policy, since the possibility to reduce quality costs allows to cut production costs and obtain additional profit at the expense of the savings thus made.

The understanding of quality as a management sphere and the impact of the related costs on the competitiveness of the organisation has considerably increased over the last decade. The managers of organisations have understood that the control of quality related costs is a relevant factor for enhancing competitiveness. For many organisations, especially those operating in the transition economies, it is a matter of survival.

It has to be taken into account that aggregation and analysis of quality related costs in a company:

- allows to evaluate and compare the problems in financial terms;
- helps the management to better control the situation in the company;
- reflects the possibilities to reduce the costs and improve the situation;
- helps to establish clients' dissatisfaction and the reasons.

Quality costs may be broken down into three basic groups:

- costs of eliminating possible errors and the errors incurred;
- costs of examination (audits);
- costs incurred by the errors for the company internally and externally.

As quality costs account for approximately 5 - 15% of all total production costs of an enterprise, it is necessary, both economically and technologically, to establish the costs, which directly affect quality.

Enterprises should not consider errors as a matter-of-fact phenomenon. The errors may have especially grave consequences, when the operation of an organisation or enterprise is subject to the impact of the economically and politically disorderly environment of the transition period.

The basic causes for the errors must be established and eliminated already before launching the production or service.

By increasing the costs of eliminating potential errors and the errors already incurred by implementing the model of the quality assurance and management system, the transition period countries may in fact essentially reduce total quality costs of an organisation, creating considerable savings (see Figure 1).

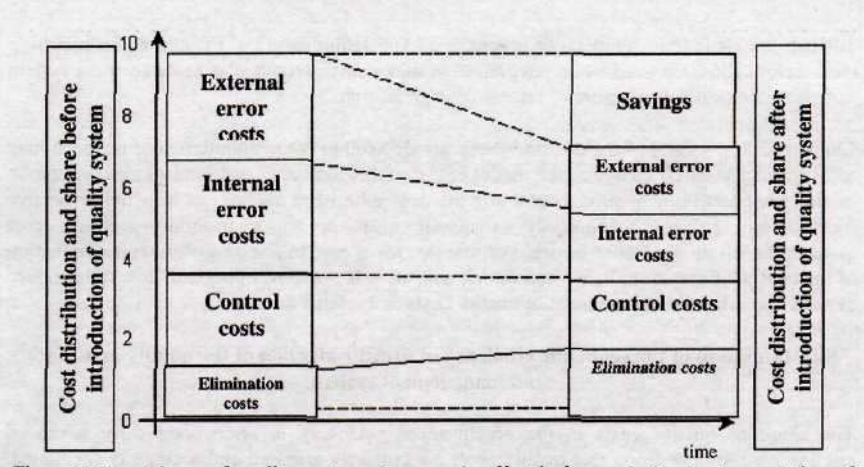

Figure 1. Breakdown of quality costs and economic effect before and after implementation of quality assurance and management system.

Besides the costs referred to above, which may be calculated directly by the accounts department of the enterprise, there are also hidden quality costs, many of which are impossible or difficult to assess in the bookkeeping accounting directly (Figure 2):

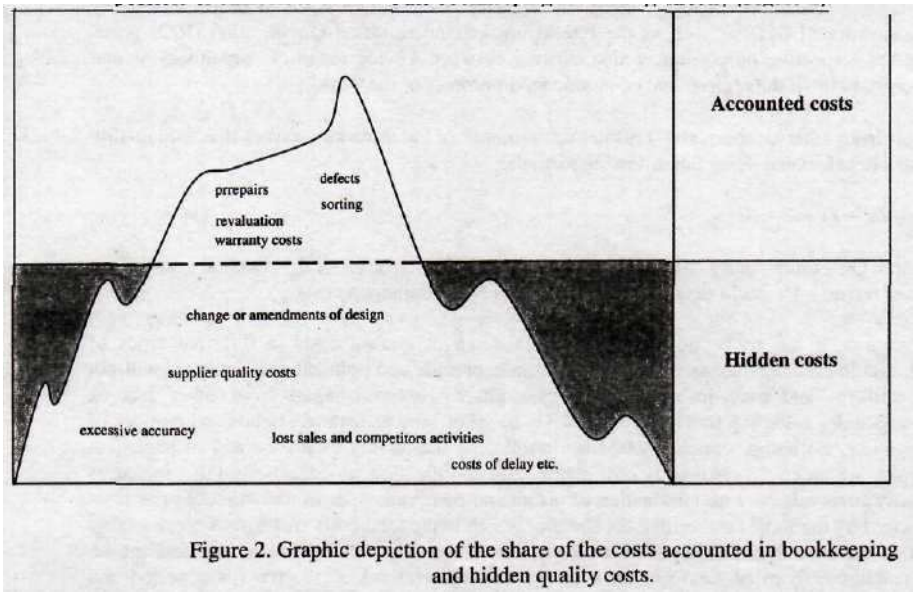

Figure 2. Graphic depiction of the share of the costs accounted in bookkeeping and hidden quality costs.

In the transition period and developing countries, the share of hidden costs may account for a considerable part of total costs of an organisation or enterprise. The hidden costs are more

difficult to calculate in financial or accounting terms. Elimination of the causes for incurring the costs may me achieved by an integration of the quality assurance and management system into the operation and structure of the whole organisation.

Chapters 2.2.3. - 2.2.5 of the doctoral thesis are devoted to the substantiation of the economic and organisational efficiency of the model of the quality assurance and management system to be designed and implemented, containing the description and analysis of how the respective methodology ensures accountancy of quality costs of an organisation, analysis, cost assessment, establishment of critical bottlenecks, takes care of the disclosure and elimination of the causes of non-compliance and errors, and, what is the most important, how to introduce general and efficient management of quality costs and related aspects.

Substantiation of the economic efficiency of the introduction of the quality assurance and management system

The share of quality costs in the organisations operating in an economically advanced environment, on condition that quality costs are correctly assessed and accurately accounted, may, on average, constitute from 2% to 20% of total sales (turnover). At the same time, the share of quality costs in organisations operating in the transition period or an economically underdeveloped environment may account for even from 50% to 60% of total sales (turnover).

The information published in recent years such organisations as British Quality Assurance Institute (IQA), American Society of Quality Control (ASQC), European Quality Organisation (EQO), as well as the International Standardisation Organisation (ISO) prove that the respective proportion is also existing between a wide range of organisations and enterprises in all the regions and economic environments of the world.

Apart from other minor quality cost items, the author of the research assumes that total quality costs are calculated using the following formula:

$$Qc = Za + Zi + P + N \quad (1)$$

Where Qc - total quality costs, Za - external costs of losses (errors), Zi - internal costs of losses (errors), P - audit (examination) costs, and N - elimination costs.

Of course, it has to be noted that the breakdown of quality costs in different types of organisations, industries as well as in different economic and political environments will not be uniform and may to a certain degree differ. However, apart from other factors, provisionally assuming that the breakdown is based on similar features, trends and purpose of allocation, the author concludes that by introducing the quality assurance and management system, which envisages quality cost control and coordination, an organisation that increases quality costs related with elimination of errors and their causes, essentially reduces the costs incurred by the losses and errors, the share of which in the total costs structure is considerably larger. Thus the organisation achieves the optimum economic effect. Taking into account the fact that the share of total quality costs in the organisations of the transition period and economically developing countries, in relation to the total sales amount may comprise even 50-69%, the economic return of the introduction of the quality system is very high. In many

industries this factor may be even a critical precondition for ,the functioning of the organisation.

There is no doubt that for the top management of an organisation to pass a positive decision on the introduction of the quality system, including also a decision on the increasing of the share of quality cost item (especially, taking into account the specifics of the operation of the organisation in the conditions of the transition or economically developing environment), one of the most important tasks of quality personnel is to persuade and prove to the management of the organisation that the methodology of control and coordination of quality systems and related quality costs will yield a positive economic return.

Irrespective of the high results of the economic return, the author of this research does not recommend to make haste with an accelerated introduction of the quality system or with a massive control of quality costs and reforms. Before introducing the elements referred to above, the senior management in conjunction with quality professionals have to define the goals of quality policy, operational strategy, as well as optimal quality management and cost control and coordination levels.

When explaining to the top management the efficiency of the quality system to be introduced, considering the example of one organisational process or one structural unit, gradually, proving the efficiency of the quality system by real, positive results, it is necessary to project the processes to all the departments and operational processes of the organisation.

The efficiency of the quality system to be introduced may be proved by economic indicators, which are calculated by using the following formulae:

$$En = ((Za + Zi + P) - N) / Q^* 100\%, \quad (2)$$

Where En - economic efficiency of the introduction of the quality system in one department or in one operational process, Za - external costs of losses (errors), Zi - internal costs of losses (errors), P - audit (examination) costs, and N - elimination costs, but Q - total sales.

The total efficiency of the introduction of the quality system in the whole organisation is calculated as follows:

$$E = \sum En , \quad (3)$$

Where E - total efficiency of the introduction of the quality system in the whole organisation, but En - economic efficiency of the introduction of the quality system in one department or in one operational process.

When evaluating the existing situation with regard to the quality of the processes of organisations and related cost items, the top management in conjunction with quality experts have to accurately establish the optimum quality level and thus also quality costs.

On the one hand, the introduction of a system of a very high quality level with excessive cost items related with quality assurance and management, or the idea reaching the level of excellence instantaneously may result in a situation, when the organisation may lack resources and professional acumen to attain the goals and objectives set. Introduction and

maintenance of a quality system may turn into a serious burden requiring from the respective organisation allocation of all the possible resources. For the transition period organisations such a situation may be too burdensome, financially exhausting and functionally inconvenient.

The interrelation between separate quality cost items, total quality costs and the quality level attained is reflected graphically in Figure 3:

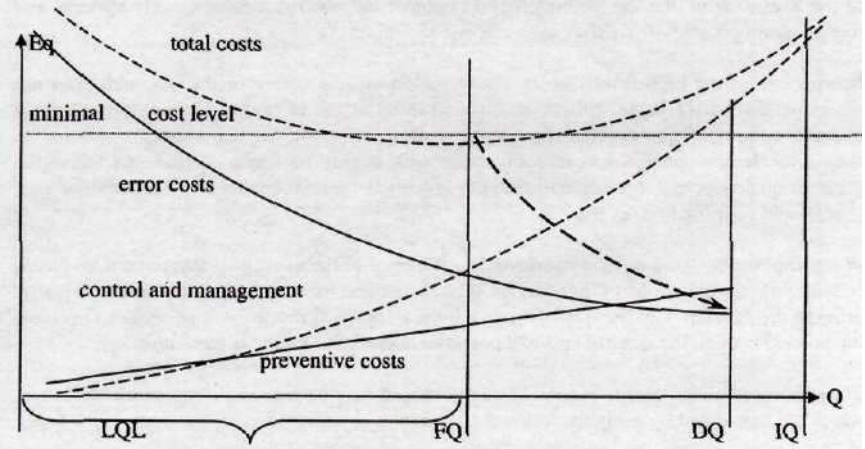

Figure 3. Efficient quality level.

In Figure 3 the various quality levels (Q) are placed on axis X, i.e. LQL - low quality level segment (before the introduction of the quality assurance and management system), FQ - financially justified quality level or the optimum level, DQ - the desirable quality for the consumer, IQ - technical excellence or the ideal quality level. When looking at the figure from the left side, it can be seen that before the introduction of the quality assurance and management system the total quality cost level is very high. It is mostly due to the high share of quality error costs. The costs that are related with the examination, quality management and preventive quality activities are negligent. This phenomenon is further reflected also in Figure 4. Moving to the right in Figure 3, it can be seen that the quality efficiency level is increasing, and the incidence of errors and non-compliance reduces. This is mainly achieved by the introduced quality control and management measures, as well as by corrective and preventive quality activities. This effect is shown in Figure 4. The error costs fall dramatically. The dynamics of error cost reduction is much higher in comparison with the preventive and corrective activities costs, quality management costs and quality control costs. As a result, total costs become lower, reaching their optimum level or economic balance (see Figure 3 - quality level FQ).

Continuing the movement to the right in Figure 4, approaching the maximum quality level, we see that the situation starts changing, i.e. elimination of errors and losses requires more efforts and costs from the organisation related with preventive quality activities, as a result.

total costs start growing faster. The author would like to draw the attention to the fact that the aforementioned by no means should be treated as a signal to stop quality assurance and management measures in order to reduce total quality costs. The organisation, when reaching the optimum quality level, has to obligatorily carry further on quality perfection and development activities. The organisation has to permanently follow the increasing requirements of the consumers, trying maximally accurately and fully meet them, at the same time, being at or maximally close to the optimal quality (economic balance) level. This process has to proceed constantly and without interruptions.

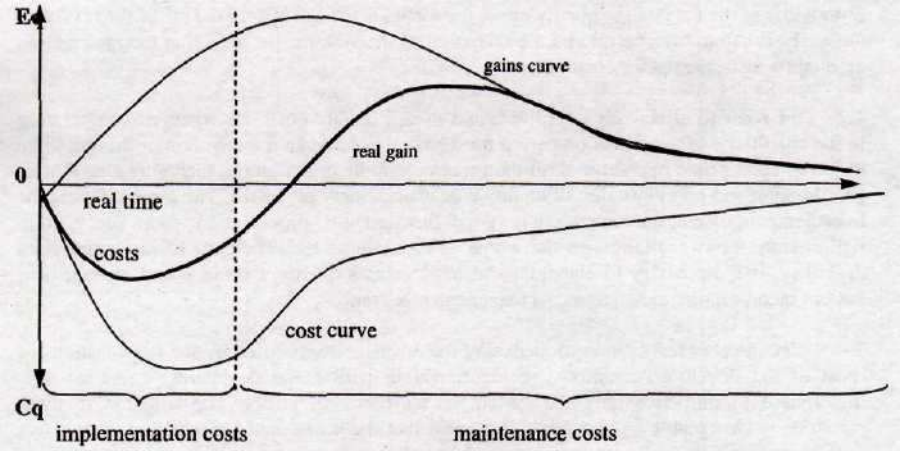

Figure 4. Costs and benefits of the quality system.

Figure 4 presents the dynamics of quality costs and economic benefits in an organisation as a result of the introduction of the quality system, where, on axis Y, Eq - benefit gained from quality measures, Cq - costs of quality measures. Level 0 -costs in a situation without a quality system.

Taking into account the analysis of quality system costs, the conclusions and recommendations made, the author suggests that the transition period enterprises and organisations, prior to the elaboration and introduction of quality principles in the particular organisation, should thoroughly study all potential and weak points, consider not only the optimum level of the quality system to be introduced, but also all the development steps in the quality management process.

The viability of organisations dealing with production or provision of services directly depends on the capability of the organisation to satisfy the constantly increasing customer requirements. This issue is becoming increasingly topical in the transition period countries.

Frequently the management of an organisation and middle level managers wrongly consider the price and meeting delivery terms to be the main element in sales, forgetting about an appropriate quality of the product. At the same time, many consumers evaluate quality and

enhancement of the value of the product or a service higher than the price and other requirements.

Based on the results of the international sociological survey, as well as on the analysis of the practices and recommendations of quality and management experts, the author of the doctoral thesis repeatedly highlights the necessity to pay special attention to qualitative management of organisational processes, and, consequently, to the quality of the products manufactured and services provided as one of the most relevant aspects of business and economic activity.

Summarizing the data on the quality costs, the methods for calculating the costs, the results of the analysis of quality control and the operation of the systems for obtaining the information on quality costs, the author concludes:

1. In order to effectively coordinate and mange quality costs, an organisation operating in the conditions of the transition period must have a considerable motivation or driving force ensuring appropriate operation of all the processes in the organisation, including also mutual coordination and harmonisation of quality cost management processes. The more efficient the management process, the more accurately will function other processes and more successfully will operate the organisation on the whole. For attaining the efficiency of an organisation described, it is necessary to elaborate and implement a quality assurance and management system incorporating the quality cost management system.

2. By the classical system of analysing the errors collected used by the organisations of most of the developed countries, in the transition period and developing countries it is insufficient to introduce only the system of collection of errors. The situation in these countries is changeable and unstable. It is clear that the cause of the production error refers only to some additional cost segment (and not always a very essential one), which affects economic performance results. It is necessary to effect total management of the operation and processes of the organisation and carry out a thorough analysis of errors. This can be achieved only by the elaboration and gradual introduction of total quality management principles.

3. For ensuring timely and constant access to the information on quality costs, the management of the organisation has to establish the information system of quality cost indicators as a constituent part of the quality assurance and management.

4. The considerable losses due to the errors in the process of production or provision of services alongside with the unpredictable chaotic impact of the internal and external factors of the transition period are two basic destabilising factors in the operation of an organisation. The quintessence of these factors provoles a situation when the operation of the transition period organisation is inefficient and is insufficiently coordinated, which may result even in a crisis.

5. In the transition period and developing countries the share of hidden quality costs may form the greatest part of total costs of the organisation or enterprise. The hidden costs are difficult to calculate in financial and accounting terms. Elimination of the causes of such costs is possible with the integration of the quality assurance and management system in the total operation and structure of the organisation.

6. Organisations operating in the transition period conditions, when considering the elimination of the causes of errors, alongside with the introduction of a quality system, have to consider an issue of no less importance - the establishment of the optimum quality level, thus the question remains still relevant - prior to the introduction of the quality assurance and management system, it is necessary to elaborate the policy and strategy of gradual introduction of the system. Gradual introduction, first, of the quality assurance system and, after that, of the total quality management methodology and principles envisaging that each member of the staff should be responsible for the quality of his/her work and should be aware that elimination of the errors is his/her most direct responsibility, may essentially reduce the share of calculated and hidden quality costs, creating economic efficiency, as well as introduce permanent control system of quality costs and mechanisms for elimination of errors and their causes.

7. It is very important for the entities of the transition period to be aware of what quality level should be applicable for this or that entity structure. The elaboration and introduction of the quality system and afterwards also its maintenance requires from the organisation input of additional resources. The introduction of a system of an insufficient quality level or, vice versa, the introduction and maintenance of excessive quality levels may create serious problems that may affect the functioning of the organisation.

8. Irrespective of the potentially high results of economic return of the introduction of the quality system introduced, the author of the doctoral thesis does not recommend to make hasty accelerated introduction of the system or an instantaneous quality cost control and reform. Prior to the introduction of the said activities in the operation of the organisation, the top management in conjunction with quality professionals have to define the goals of quality policy, strategy of the operation, as well as the optimum level of quality management and cost control and coordination.

The introduction of a quality management system of an insufficient level may not ensure adequate quality assurance or management, thus, the attainment of the overall goals and implementation of the policy of the organisation may be highly problematic. Such a quality system may turn into an additional burden. At the same time, the introduction of a system of excessive quality levels or the idea of the attainment of the level of excellence may lead to a situation, when an organisation may experience a lack of the resources and professional acumen for attaining the goals and plans set. The introduction and maintenance of the quality system may become a serious burden and require from the organisation allocation of all the resources available. For the transition period organisations such a situation may be too burdensome, financially exhausting and functionally inconvenient.

Taking into account the analysis of the quality system costs, the conclusions and recommendations made, the author suggests that the transition period enterprises and organisations prior to the elaboration and introduction of quality principles in the particular organisation should thoroughly study all potential and weak points, consider not only the optimum level of the quality system to be introduced, but also all the development steps in the quality management process.

In the following section of the doctoral thesis the author describes the structure and methodological conception of the model of the quality assurance and management system designed as optimum for organisations operating in the transition period countries.

3. STRATEGY AND STRUCTURE OF THE MODEL OF THE QUALITY ASSUANCE AND MANAGEMENT SYSTEM OF THE TANSITION PERIOD COUNTRIES, THE PRE-INTRODUCTION PHASE

Using the results of the research and the survey conducted, described in the first two chapters of the doctoral thesis, the author concludes that there is a considerable impact of internal and external factors hampering the development of quality enhancement in the transition period and economically advanced countries, including also Latvia. Consequently, it is not recommended to start quality enhancement processes in organisations with hasty elaboration and immediate introduction of quality systems, despite the economic and organisational advantages offered by the introduction of the system.

The process of the implementation of the model of the quality assurance and management system designed by the author of the doctoral thesis consists of three development phases. This chapter presents the general strategy for implementation of the model of the quality assurance and management system, structural profiles of development phases, as well as description of the first, i.e. the pre-introduction preparation phase applicable for the transition period countries.

Strategy of implementation of the quality assurance and management system

The author of the doctoral thesis offers the following developing strategy for elaborating and implementing the quality assurance and management system, by rationally combining the phases of the elaboration and implementation of the quality assurance and management system according to the functional goals and development stages in three groups or development phases (Figure 3):

Phase I *- The phase of the preparation for pre-introduction and introduction of the initial quality assurance and management system;*

Phase II *- The phase of risk management and corrective and preventive activities;*

Phase III *- The phase of further development and perfection of the quality assurance and management system.*

The phase of the preparation for pre-introduction and introduction of the initial quality assurance and management system

Taking into account the essential differences between the economic, political and social environments of developed and transition period and developing countries, as well as the initially negative and sceptical reaction of the personnel of the organisations of the transition period and developing countries towards all sorts of organisational changes and reorganisations, including also the introduction of new principles of quality management, the elaboration and introduction of the quality system will not attain the expected results without serious pre-introduction preparation work. The pre-introduction preparation work implies:

1) Building of the awareness of the necessity of the introduction of the quality system and general support and promotion of the process by the senior management;

2) Building of complete awareness of the necessity of the implementation of a quality system, total support and promotion of the process by the medium level management;

3) Involvement of the whole organisation and every employee in the process of building the awareness of and explaining the need for the quality system in the pre-implementation period;

4) Establishment of a working group or involvement of independent experts in the process of enhancing the awareness of the quality system in the pre-implementation period and for coordination and management of the development processes for further implementation of the quality system. In the initial stage the task of this institution is to make sure that prior to the elaboration and introduction of the system all the staff of the organisation, starting with the top management up to the process executors, are maximally well aware of and would fully support the processes related with the transition of the organisation to quality assurance and management.

The first phase can be characterized as the phase for creating the basis for the quality assurance and management system. The stability and quality of the base will determine the further operation and development of the quality assurance and management system, and thus the functioning of the whole organisation.

The phase of risk management and corrective and preventive activities

Simultaneously with the verification and analysis of the initial quality assurance and management system the second phase envisages the performance of planned and general measures connected with the analysis of the risk zones in the organisation, i.e. the analysis of the weaknesses and strengths of the organisational structure, evaluation of the resources, verification of the impact of internal and external factors. These activities are carried out with the purpose of disclosing and establishing the causes of the potential and existing problems and weak elements in the organisational structure and processes. The conclusive stage of this phase envisages planned corrective and preventive measures, which allow to eliminate the causes of the existing organisational problems as well as safeguard the organisation from possible problems.

The phase of further development and perfection of the quality assurance and management system

The development and continuous perfection of the quality assurance and management system must take place from the very start, when developing and introducing the initial principles of the quality assurance and management system. The development of the system and its continuous perfection are two basic requirements determining the viability of the quality assurance and management system and, thus, also the dynamic progress and growth of the whole organisation.

In Phase III the dominant role is played by the methodology of ensuring the perfection and continuous development of the system- This phase envisages considerable changes focussed on the replacement of the initial quality assurance and management system with a principally new - total quality management system.

The replacement of the initial quality assurance and management system with the total quality management system allows to consolidate the principles, which considerably enhance the transparency of the functioning of the organisation or increase the knowledge about the existing processes, protection and manageability of the organisation. At the same time, for the

newly introduced system to ensure successful functioning of an organisation in the conditions of the transition period, this phase integrates two elements of the second development phase, i.e. the element of risk zone management and the element of corrective and preventive activities.

In the transition period, when it is difficult to forecast the impact of internal and external factors, a perfected total initial quality assurance and management system allows the organisation without any excessive delays and with a minimum risk to respond to the contingent changes in the market situation, which may take place both within or outside the organisation.

The third phase of the development of the system does not envisage independent functioning of the elements of risk zone management and corrective and preventive activities. The total quality assurance and management system with integrated elements of risk zone management and corrective and preventive activities can meet the needs of the organisation and ensure its maximum protection against the impact of external and internal factors, and thus their introduction into the newly established quality assurance and management system is a natural and efficiently time-phased process.

In the period from 1999 to 2003, the author of the doctoral thesis was engaged in practical elaboration and implementation of the model of the quality assurance and management system described above. The functioning of the system has been approbated in two international companies registered in the LR Enterprise Register: SIA "Schenker" and SIA "Danzas". The elaboration and implementation of the system has been awarded the highest mark and is recommended for implementation in other companies of the Republic of Latvia, as well as in the transition period and developing countries.

The basic aim for elaborating the model was total quality assurance and management in organisations, which have voluntarily claimed implementation of quality policy to be their strategic priority in order to promote satisfaction of the need of the parties involved in insuring the operation of an organisation, to measure and enhance performance efficiency, to elaborate and introduce established procedures for continuous perfection of the operation of the organisation.

The quality system elaborated differs from the existing quality systems with original model elements and its unique structure. The model elements comprise the approach of continuous perfection and the methodology of integration. At the same time, the whole model ensures continuous advancement towards excellence. Besides internal quality assurance and management of an organisation, the model is oriented towards the enhancement of the ability of an organisation to effectively respond to the unpredictable external factors, adapting to the chaotic elements inherent to the transition period - the changes in the political environment, the ability to ensure planned deliveries by the supplier chosen, and appropriate operation of the organisation itself.

In order to comprehensively consider and analyse the phases of pre-introduction, introduction and development of the quality assurance and management system applicable to the transition period, the author offers a graphical presentation of the model of the quality assurance and management system designed (Figure 5).

Taking into account gradual execution of the strategy of the elaboration and implementation of the planed quality assurance and management system, according to the processes phased as described in the three development phases, the model of the quality assurance and

management system comprises five basic harmoniously interconnected development elements, forming a single and coordinated set or system of processes.

The basic elements of the model of the quality assurance and management system are:

1) Preparation of the pre-introduction of the quality system;
2) Selection and implementation of the initial quality assurance and management system;
3) Introduction of the risk zone management system;
4) Introduction of the system for implementing corrective and preventive activities;
5) Transition from the initial quality management system to a total quality management system applicable to the transition period countries comprising the elements of risk zone management and corrective and preventive activities.

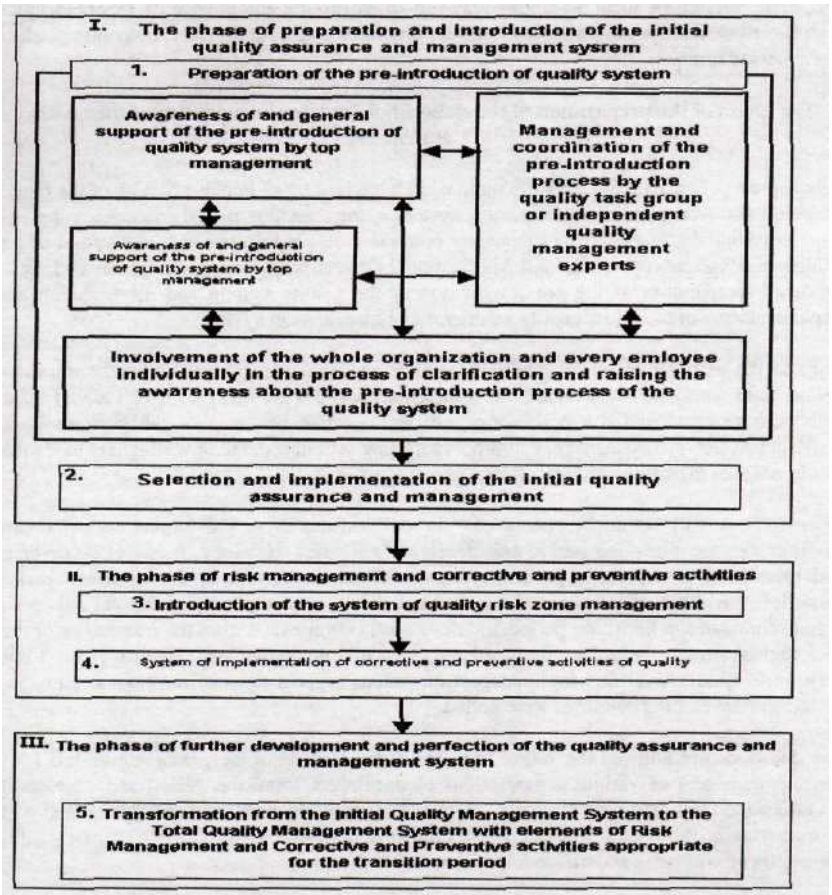

Figure 5. Graphical presentation of the model of the quality assurance and management system for the transition period countries.

Depending on the degree of the development of an organisation, the five element model of the quality assurance and management system may be substituted with a simplified model of the quality assurance and management system, consisting of four or even three elements, skipping, respectively, one or two initial elements of the quality assurance and management system.

At the same time, taking into account the comparatively low degree to forecast the impact of internal and external factors, which is typical for the transition period, the author of the project does not recommend to use the simplified version in organisations operating in the conditions of the transition period and instead recommends to use the model version of the total quality assurance and management system, since the introduction and application of the simplified version in such conditions may fail to ensure the compliance of an organisation with regard to appropriate management of the processes and, consequently, may not produce the expected results.

The phase of the preparation of the elaboration and pre-introduction of the quality system

Subchapters 3.1 and 3.2 of Chapter 3 outlined that the process of implementation of the model of the quality assurance and management system in the transition period countries comprises three development phases. This subchapter presents a detailed description, motivation of the choice, analysis of operation and verification of the first development phase and basis elements (preparation of the pre-introduction of the quality system and the selection and implementation of the initial quality assurance and management system).

Prior to the elaboration of the quality assurance and management system in the transition period conditions, the organisation has to take into account the fact that it will have to deal with both external and internal factors, i.e. the negative response of the personnel and resistance to the quality management processes being introduced, the unwillingness to change and to adapt to the new requirements.

Organisations will no doubt encounter "internal resistance" or the human factor in any environment, the transition period and developed countries. However, it has to be outlined that this factor is especially pronounced and difficult to control in the transition period countries. In 2001, the author of the doctoral thesis conducted a sociological survey in organisations of the transition period and developed countries. Within the framework of this sociological survey the author designed a special questionnaire form. By using this form, personnel, middle level and top managers of various organisations of developed, transition period and developing countries were polled.

The questionnaire allowed the author to establish the attitude of the personnel, middle level and top managers of various organisations of developed, transition period and developing countries and their readiness to accept, adapt and manage organisational changes related with restructuring of the organisation, as well as the development and introduction of new quality management principles and methodology (see Table 2).

Table 2

Results of the sociological survey of the attitude towards the changes in an organisation by the personnel of the organisations operating in developed, developing and transition period countries

Results of the questionnaire of the personnel of the organisations of developed countries.
(The questionnaire was conducted in 26 (twenty six) companies of the European Union: Finland (9 companies), Spain (4 companies), Germany (5 companies), Sweden (8 companies)).

Ability to accept change	A	B	C	D	E	F	G
(shows the ability and desire to accept changes)	95-100%	85-94%	75-84%	60-74%	35-59%	15-34%	1-14%
Perception of change	A	B	C	D	E	F	G
(perceive changes positively as an opportunity to lean and develop)	95-100%	85-94%	75-84%	60-74%	35-59%	15-34%	1-14%
Impact of changes on work	A	B	C	D	E	F	G
(how positively the change affect the work of the personnel)	95-100%	85-94%	75-84%	60-74%	35-59%	15-34%	1-14%
Support to change	A	B	C	D	E	F	G
(shows the number of persons wishing the changes in the organisation they are working for)	95-100%	85-94%	75-84%	60-74%	35-59%	15-34%	1-14%
Degree of risk	A	B	C	D	E	F	G
(shows the number of persons treating change as a potential risk)	95-100%	85-94%	75-84%	60-74%	35-59%	15-34%	1-14%
Prior expe F	A	B	C	D	E		G
(shows the number of persons having prior experience of problems due to changes)	95-100%	85-94%	75-84%	60-74%	35-59%	15-34%	1-14%

Continuation of table 2

Results of the questionnaire of the personnel of organisations in developing (transition period) countries.
(The questionnaire was conducted in 39 (thirty nine) organisations of the Baltic states and CIS operating in Latvia (18 companies), Estonia (8 companies), Lithuania (6 companies), Russia (4 companies), Ukraine (2 companies), Belarus (1 company)).

Ability to accept change	A	B	C	D	E	F	G
(shows the ability and desire to accept changes)		85-94%	75-84%	60-74%	35-59%	15-34%	1-14%
Perception of change	A	B	C	D	E	F	G
(perceive changes positively as an opportunity to lean and develop)			75-84%	60-74%	35-59%	15-34%	1-14%
Impact of changes on work	A	B	C	D	E	F	G
(how positively the change affect the work of the personnel)	95-100%	85-94%	75-84%	60-74%	35-59%	15-34%	1-14%
Support to change	A	B	C	D	E	F	G
(shows the number of persons wishing the changes in the organisation they are working for)			75-84	60-74	35-59	15-34	1-14
Degree of risk	A	B	C	D	E	F	G
(shows the number of persons treating change as a potential risk)	95-100%	85-94%	75-84%	60-74%	35-59%	15-34%	1-14%
Prior experience	A	B	C	D	E	F	G
(shows the number of persons having prior experience of problems due to changes)			75-84%	60-74%	35-59%	15-34%	1-14%

In the course of the sociological survey respondents from more than 60 organisations in Europe, the Baltic States and CIS were polled, of which about 40% of organisations were operating in developed countries and about 60% were operating in the developing or transition period economies. The respondents occupy various positions in management and production and represent several industries.

The results of the survey show a marked distinction between the responses given by the personnel of the organisations operating in transition period conditions and those operating in the organisations in developing countries.

Approximately 80% of the transition period group respondents have admitted that they cannot adequately accept and live with the potential changes, which might be related with the operation of the organisation they are working for. Only 11% of the transition period group respondents have answered that they would welcome the changes in the organisation or department they are working at.

In their turn, 65% of the respondents of the developed countries group treat changes as a progressive process allowing them to learn and develop, and are capable of adequately accept them. About 89% of the developed countries group respondents welcome positive changes in their organisations.

83% of the transition period group respondents and about 17% of the developed countries group respondents associate potential changes with their prior negative experience of the changes, when the situation required mobilisation of all the possible internal human resources to adapt to the new conditions, requirements and standards.

The results of the survey conducted allow to conclude that in the transition period countries people are more sceptical to changes, reorganisations or innovations, thus they are more difficult to persuade about the positive effects of the changes.

Structure of the element of the awareness of the need of the elaboration and pre-introduction of the quality system

When projecting the results of this research to the transition period organisations, it is absolutely clear that introduction of a quality system is impossible without the establishment of the need for the pre-introduction of the quality management system which implies appropriate preparation activities as shown in Figure 3.

Prior to the introduction of the quality system, the top management, middle level management and after that the whole personnel of the organisation has to be sure about the goals of the introduction of the quality system, the policy and plans of the organisation concerning perspective development.

The establishment of the need for introducing the quality system starts with a set of ideas elaborated and approved (signed) by the top management. This document is to be elaborated with the purpose of enhancing the productivity of the organisation, bringing in line the information flow between the structural units, improving the interrelation of internal processes, taking into account the specific conditions of the transition period, and, what is even more important, to understand and to be able to evaluate and ensure the requirements of

clients and other parties concerned, which determine successful functioning of the organisation, simultaneously establishing the goals of the operation of the organisation and the first visions of the quality policy.

Selection and introduction of an initial quality management system

This subchapter presents the description of the second basic element of the first development phase - the selection and implementation of the initial quality assurance and management system, motivation of the selection, and the analysis and verification of its operation.

In the initial stage of the introduction of quality assurance and management in the transition period conditions special attention has to be paid to an appropriate selection of the system, since the selection of an appropriate quality management system determines the efficiency of the quality process and organisation.

On the one hand, organisations, due to the disarray in the matters of quality assurance or management, basically fail to differentiate between the positive and negative external impacts, as well as the whole information flow coming from the external environment. Consequently, the changes going on in the organisation, reorganisation or reconstruction may temporarily improve the operation of functionally weak sectors, but, on the other hand, may increase the negative impact of internal and external factors. These negative aspects may result in interruptions of basic processes and disrupt the functioning of an organisation.

On the other hand, organisations operating in the transition period, in about 85 - 89% cases encounter serious social and psychological problems. The personnel of the organisation, in fact, is not ready for reorganisations and reconstructions and is hostile to all sorts of changes, associating them with negative consequences that may deteriorate the existing state of the personnel.

Chapter 1 of the doctoral thesis describes the international survey, as a result of which the author established the most popular, and most widely used quality system in the transition period countries, which may be optimally used for initial quality assurance.

As the initial element for introducing the quality system for an organisation, the author recommends to select a quality management system, which principally would be applicable to organisations launching quality processes for the first time.

The focus here is on the requirements of the quality system modified in 2000, the international quality management standard ISO 9001:2000, which is regarded as an optimum starting point for the development of a quality system in an organisation.

The stage for the perfection of the quality assurance and management system or the requirements of the ISO 9001:2000 standard developed by the International Standardisation Organisation are elaborated on the basis of practices of managing a business with an emphasis on the control of business processes of an organisation and methodology of permanent perfection. The standard ensures also the development of the total quality management system, since the standard comprises several total quality management principles. According to the author, the selection of the ISO 9000:2000 quality management system as the element

for the initial quality assurance and management system can be justified by the following relevant considerations:

First, the international quality management standard ISO 9000:2000 is regarded as an optimum starting pint for developing a quality system in an organisation. This fact is proved by the results of the questionnaire described in the doctoral thesis. The ISO 9001:2000 standard is a real starting point, provided it is applied as a practical, operation-oriented system, instead of being only an extra aspect. The standard comprises a simple and coordinated quality assurance and management methodology, easily applicable in any industry of national economy as well as areas, which are not related with economy.

Secondly, in contrast to the former quality management system requirements, i.e. the former quality management standard ISO 9001:1994, the operation of which was based on 20 quality assurance elements, the new version of the standard is based on quality management using the "process approach". The advantages of this approach are to ensure interrelation and combination of individual processes of the system.

Thirdly, in order to help the organisations in developing countries with launching quality related processes, the International Standardisation Organisation has established a special quality policy committee for developing countries - ISO / DEVCO, its operation being especially focused on the needs of the transition period countries. The Committee has three basic goals:

- To recommend support activities for meeting the aims of the transition period countries;

- To organize and ensure discussion forums, experience exchange programs, as well as other necessary activities related with quality assurance and standardisation issues for developing countries;

- To publish informative materials, to provide publications, and promote and propagate the introduction of quality systems in companies, public organisations, various associations and societies.

In all activities the ISO / DEVCO Committee is actively cooperating with other committees of the International Standardisation Organisation, with structural units of the United Nations (UNO), the International Electro-Technical Commission (IEC), as well as with other international and national organisations.

Fourth, the international quality assurance and management standard ISO 9001:2000 does not comprise the requirements that are characteristic to other management systems. This international standard allows the organisation to coordinate or integrate its quality management system with the requirements of related management systems.

Thousands of companies worldwide have introduced the ISO 9001:2000 quality system as the starting point for launching a quality improvement campaign. The ISO 9001:2000 is a real starting point. On condition that it is applied as a practical system for bringing into line the operation of a business or organisation, instead of being only an additional aspect. When elaborating a model of a quality system, which would be applicable for the transition period

countries, the author anticipates that the ISO 9001:2000 standard will provide a valuable constructive stimulus for further quality perfection programs and initiatives in organisations and will become the basis for all-embracing expansion of quality systems.

4. THE PHASE OF THE ACTIVITIES OF RISK MANAGEMENT AND CORRECTIVE AND PREVENTIVE MEASURES OF THE MODEL OF QUALITY ASSURANCE AND MANAGEMENT SYSTEM

This chapter presents the stages of the second development phase, i.e. the activities of the risk management and corrective and preventive measures of quality management system, motivation of the selection of elements, operation reliability and verification.

Taking into account the fact that the processes of quality assurance and management in the conditions of the transition period for functioning organisations are in the initial introduction phase, the organisations have to elaborate a whole range of additional measures related with the examination of organisational parameters or risk zones, the successful operation of which determines efficient functioning of the whole system in the conditions of the transition period and especially in crisis situations.

The designed model of quality assurance and management allows the organisation to find a solution to the question - "how should the organisation operate to minimise the impact of uncontrollable negative external and internal factors and how to overcome the possible impact of the crisis situation?" - by establishing a simple but, at the same time, effective quality risk zone management system. The system of quality risk zone management comprises the elements of a continuous management process and the methodological approach of interrelation (Figure 4).

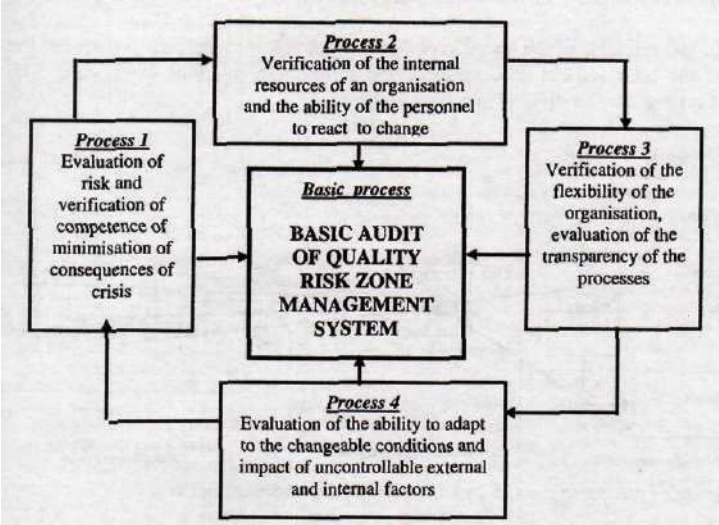

Figure 4. Control and management of quality risk zones.

The basic idea of the activities is to ensure a planned "spectrum" analysis of the internal resources and structure of the organisation with the purpose of facilitating its protection against unpredictable impact of different factors, which may chaotically affect the organisations in the transition period and at any moment may hamper the functional "biorhythms" of underdeveloped organisation and lead it to a critical state.

The verification of the risk zone is carried out by the quality risk zone management system, the operation of which has to be accurately coordinated with the requirements of the introduced basic systems, i.e. with the initial requirements of the quality management system ISO 9001:2000. The principle of the operation of the quality risk zone management system has to be harmonized with the total system structure of the model. Its structure, the same as the structures of other elements of the quality assurance and management system, has to ensure the interrelation of the management processes, i.e. the elements of the system (sub-processes) have to be mutually interrelated and have to be in the process of continuous perfection.

The aim of every sub-process is according to its function, to protect the system of an organisation from the negative impact of external and internal factors.

At the same time, the aim of the central element of the quality risk zone management is:

- To coordinate the operation of the quality risk zone management;
- To perform the adit of quality risk zone management;
- To carry out the analysis of the information obtained in the course of the audit and control of the status level of the organisation, by using the method of deductive analysis;
- To ensure the "spectral" analysis by applying the induction method;
- To perform preparation of the total quality system for corrective and preventive activities.

Figure 5 presents the principle of the operation of the quality risk management system and the methodology of the analysis and processing of the information used in the system. The operation of the system may be divided into three stages:

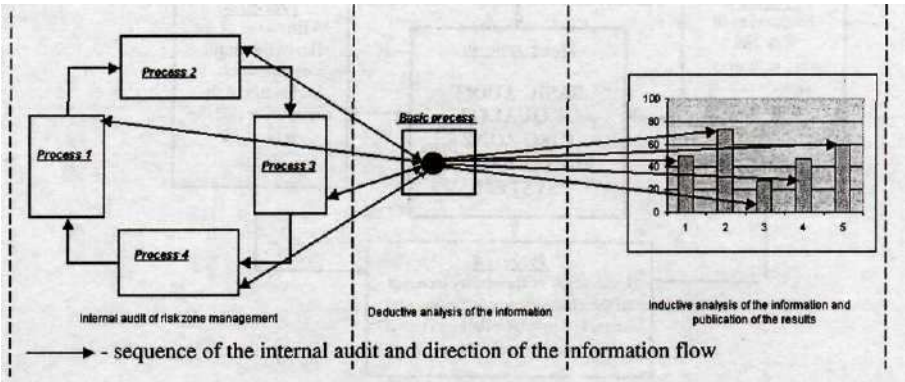

Figure 5. Implementation and course of quality risk zone control and management.

Stage 1 - Internal audit of quality risk zone management. This stage is focused on the mutual interrelations of the sub-processes of the quality risk zone management systems and their continuous operation, which is directed towards the examination of the degree of the readiness of the organisation to face the unpredictable impacts of external and internal factors or, in other words, internal audit of the processes;
Stage 2 - Deductive analysis of the data. The analysis of the information collected by means of the sub-elements of the system of the quality risk zone management system, by applying the method of deduction and the basic audit procedure;
Stage 3 - Inductive analysis of the information and publication of the results. The analysis of the information collected and processed in the course of the audit, by applying the inductive method of analysing the information, the publication of the results and the preparation of the organisation for the stage of carrying out the corrective and preventive activities.

The system of implementation of corrective and preventive activities of the elaborated quality assurance and management system

This subchapter presents the description, methodology, operational analysis and verification of the elaboration and implementation of the second basic element of the second development phase, i.e. the system of corrective and preventive activities of the quality assurance and management system.

For organisations operating in the transition period conditions it is especially important to timely effect operational activities to eliminate the causes of imperfections due to deflections in the quality risk zone parameters with the purpose of averting the recurrence of such imperfections.

At the same time, for eliminating the causes of potential imperfections disclosed in the course of operation of the quality risk zone management system the organisation has to perform the activities directed at elimination of potential problems, or to perform preventive activities of risk zone management. Preventive risk zone management activities must correspond to the scale of the consequences of the impact of the potential impact of the deflections.

If in the course of quality risk zone analysis some potential problems or imperfections are disclosed in some parameters of the operation of an organisation, which in the transition period, due to unpredictable impact of external or internal factors, may turn into serious obstacles for the operation of an organisation, the designed quality assurance and management system envisages introduction of corrective and preventive activities (Figure 10). The aim of these activities is to disclose the imperfections or weak points in the structure of the organisation, to eliminate them and to carry out appropriate measures that would restrict the incurrence of such problems in the future.

As can be seen in Figure 6, corrective and preventive activities consist of three operation levels:
I - corrective activities in basic management processes of an organisation;
II - corrective activities in quality risk management processes;
HI - preventive activities in establishing and eliminating the potential problem.

Every level has its own functions and goals. The activities in every level are organised by using the priority principle: first of all carrying out the activities related with the elimination

of the causes of most essential existing imperfections or the most essential potential imperfections.

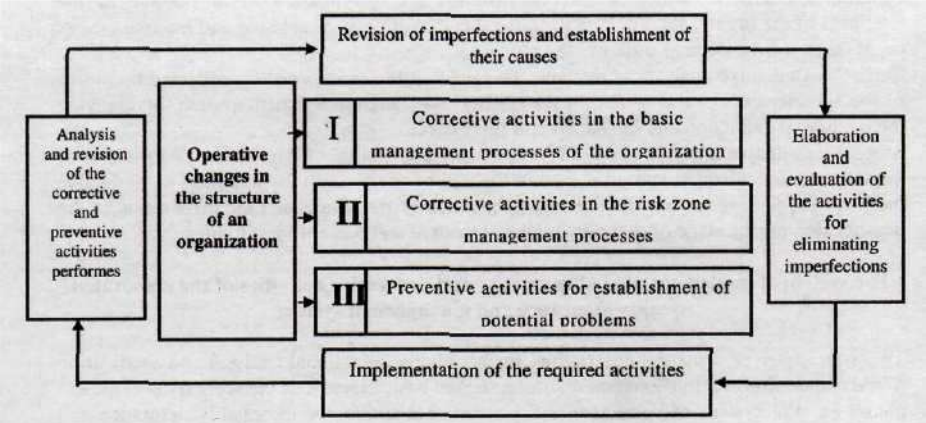

Figure 6. Interrelation of corrective and preventive activities of the quality system.

The aim of the process of the first level (corrective activities in the basic management processes of the organisation) is to eliminate the causes of imperfections in the quality management system and the basic management processes in order to avert their repetition.

The basic objective of the process of the second level (corrective activities in the risk zone management processes) is to eliminate the causes of imperfections in the processes and parameters related with:

- the readiness of the organisation to resist the negative impact of unpredictable external and internal factors;
- the ability to adequately react and successfully function in the possible crisis situation.

The process of the third level of the corrective and preventive activities (preventive activities for establishment and elimination of potential problems) deal with preventive activities in order to liquidate the causes of potential imperfections and to eliminate their possible repetition. This process envisages performance of preventive quality activities both in basic management processes and also in quality risk zone management processes, at the same time, averting potential problems at all organisational levels.

When carrying out corrective and preventive measures, the following principles have to be complied with:

- The activities at every level of the system must be performed simultaneously (in parallel);

This means that situations, when all organisational resources and possibilities are focused on the elimination of the causes of one (from a number) of problems, are not permissible. In the

transition period the negative impact of the uncontrolled imperfections, at the same time, may considerably hamper the functioning of the organisation.

- The activities of the disclosed causes of [he existing or potential discrepancies have to be subjected to the appropriate priority principle.

The priority of the existing or potential discrepancies is established by evaluating the degree of the impact of the discrepancy, complicity and the weight of real or potential consequences of the imperfection. First of all, it is necessary to eliminate the existing or potential discrepancies with the greatest degree of the impact or the weight of the consequences incurred.

- The operation of the system has to ensure the ability of self-evaluation and perfection of management process.

Which means continuous performance of:

- analysis and establishment of the causes of imperfections;
- elaboration and evaluation of the activities aimed at eliminating the imperfections;
- evaluation of the results and efficiency of execution of the activities for eliminating the imperfections;
  revision of the activities performed and constant development of recommendations for perfection of the process.

5. THE PHASE OF FURTHER DEVELOPMENT AND PERFECTION OF THE MODEL OF THE SYSTEM OF QUALITY ASSURANCE AND MANAGEMENT FOR THE TRANSITION PERIOD COUNTRIES

The chapter presents the stages of the third development phase, i.e. the phase of further development and perfection of the system of quality assurance and management, the structure of elements, methodology, operation reliability and evaluation.

In the previous stages of the model of the quality system it was established that the elaboration of the quality system depends on the top management of the organisation and its total support with regard to quality assurance and management, or, in other words, the policy of the organisation has to clearly state the vision, conviction and interest of the top management in the quality of the product or service provided to the client.

The quality policy has to publicised, with the whole staff being, within the scope of their competence, involved in its implementation. Individual structural units may form their own quality policy, coordinated with the total quality policy and correspondent with the goals and conditions, as well as compliant with the clients' requirements and interests. The quality policy has to be the concern of the whole staff, employees of the organisation - the basic principles and goals have to be coordinated generally and totally. To successfully carry out this process it is necessary to establish training schemes and practical workshops to master the knowledge and skills required.

The organisation has to implement efficient management principles, by establishing the main goals and methods of implementation, which on the whole forms a unified organisational policy, with quality management being an important part in its coordinated implementation. The top management are responsible for developing the quality policy, which has to be

clearly elucidated to all the structural units involved -the personnel, and have to see to it that it is consistently implemented. When developing the quality policy, it has to be clear that the main aim of the organisation is complete satisfaction of clients' requirements.

Quality implies common efforts, and it may not be attained only by administrator's demands, requirements and orders. The quality policy has to be evaluated, developed and unanimously accepted by all the parties involved, and it has to be rooted in the traditions, experience and working culture of the particular organisation, considering the trends of technological development and market dynamics, as well as the long-term goals set by the management. Only by complying with all these basic principles an organisation may gradually develop also inspect of quality awareness, with a simultaneous advancement towards continuous development and perfection of the quality model. From the model of the initial quality system it has to be developed into a more sophisticated, but, at the same time, more advanced quality management system, by incorporating in the basic operational principles not only the principles of the initial quality management system, but also the methodology of the total quality management system.

The main principal difference between the ISO, other standards and the total quality management methodology is that standards is a set of requirements to be met, but total quality principles are guidelines and not requirements, with a central idea to ensure continuous self-development of an organisation through continuous, systematic and fact-based improvements.

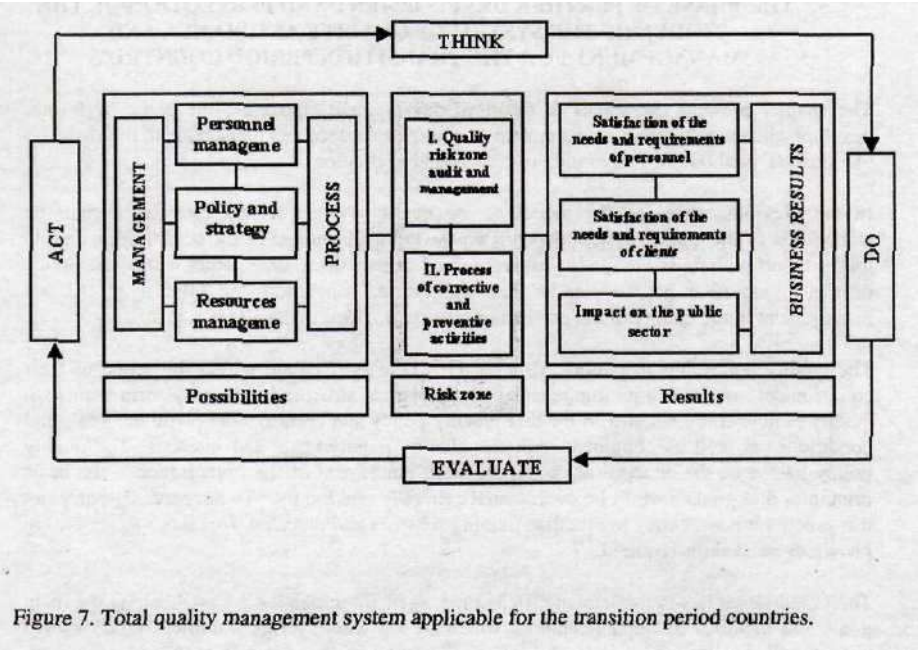

Figure 7. Total quality management system applicable for the transition period countries.

An organisation can fulfil the requirement of the standard in a shorter or longer time period, obtain a certificate proving the fact, and after that focus only on the maintenance of the existing system, which does not require special efforts. The total quality management system is basically focused on the satisfaction of the requirements and need of clients - external (consumers) and internal (personnel), as well as the public, by involving the whole staff in the total management process to reach the desired result.

The total quality management methodology, in some sense, is a revolution in management thinking, especially, if it is implemented in an organisation operating in the conditions of the transition period, since quality control departments and quality systems do not play the most significant role in quality assurance. Of course, it does not eliminate the control of the processes. At the same time, the use of this system creates a wide range of methods and principles caring about the maintenance, management and perfection of quality.

Irrespective of the evolution of the quality system, in the transition period, with the existing dominant unpredictable impact of the external and internal factors, an organisation is still very sensitive to these impacts. Successful functioning of an organisation is continuously dependent on its ability to protect its system against these factors. There is a permanent need to carry out checks and take protective measures related to the risk zone operation of the organisation. Thus, in the conditions of the transition period the structure of the system of total quality management has to be complemented with two additional modules (Figure 7), i.e.:

I - The module of quality risk zone control and management.
II - The module of corrective and preventive operations system.

Correct understanding of the methodology and accurate implementation of total quality management allows to successfully develop the organisation in the conditions of the transition period, overcoming the peculiarities of this period, without having to worry whether some organisational process or element may remain undervalued and unprotected against the unpredictable impact of external and internal factors.

The system of quality perfection (management) is the most efficient from the quality management systems known so far, since it combines real attempts and efforts of the management and the staff aimed at continuous enhancement of quality of activities and processes in order to ensure satisfaction of the needs and requirements of consumers or other parties involved, which are, in their turn, constantly developing.

For the system to successfully operate in the transition period, it has to be based on definite principles, which determine the efficiency of this system and its ability to survive.

The most relevant principles of the system of total quality management are:

1. Top management of the company has to be genuinely interested in the attainment of the required quality level, by investigating the causes of inferior quality.
2. The quality system has to incorporate planning and organisation of continuous perfection of quality.
3. It is necessary to have continuous self-evaluation of quality risk zones of the organisation.

4. It is necessary to ensure conscientious involvement of the whole staff in enhancement of quality.
5. It is necessary to supervise and perfect the processes and quality activities.

The total quality management system requires from the management and the staff a new thinking approach; it envisages reliance of the management on the personnel, by being convinced that the work will be performed conscientiously, without concealing inferior quality and the causes of imperfections.

It is total quality management thinking that is the most difficult to be mastered, especially in the transition period countries. Thus, its massive introduction skipping the phase of building up of quality awareness, without the elaboration and introduction of the activities of the initial quality system, without the audit of the quality risk zones and the phase of corrective and preventive activities, is practically impossible.

The total quality management system to be introduced in the initial phase may become an additional system operating not to ensure and perfect the processes within the organisation, but functioning as an auxiliary or parallel system, having no special impact on the processes of the organisation, without additional burden on the personnel, which is responsible for the introduction and further maintenance of this system. This is why the total quality management system requires lengthy preparation. The new thinking has become an obstacle for many enterprises, the management of which lack appropriate understanding of the concept of quality management and the total quality management system. Without interest, direct and active involvement and understanding on the part of the management, the establishment of an efficient system of quality perfection in an enterprise is impossible. Therefore, first of all, at the very beginning of the implementation of the total quality management system it s necessary to ensure appropriate management training.

Integrated approach to the quality assurance and management system

The quality assurance and management system comprises an integrated approach, since, owing to its structure, the functioning principles and generally used methodology, it is **a** management system that integrates all business components in a coordinated system to ensure the fulfilment of the objectives and the attainment of the goals of the organisation.

The system to be designed and introduced is compatible not only with other internal systems and processes of the organisation but also with other control, management or quality assurance systems. For example, the total quality management system developed for the transition period countries is compliant with the requirements and standards of the International Standardisation Organisation, e.g., ISO 14000:1996. ISO 14000:1996 is an environmental management system for organisations and enterprises aimed at supporting environmental protection and eliminating pollution of the environment, by balancing this activity with social and economic requirements. ISO 14000:1996 is one of the internationally most recognized environmental management standards. Globally, the number of organisations certified according to this standard exceeds 21 000. The registration according to ISO 14000 standards is being increasingly required in business, especially by consumers, since none of the enterprises operates in an environmental vacuum.

The integrated approach implies combination of all internal activities performed by an organisation in a unified system to function not as isolated parts, but as a single mechanism. For internal processes and systems of an organisation to become parts of an integrated management system of an organisation, they have to be combined so that there are no marked boundaries and artificial barriers between the processes or activities. Anything that influences the results of the business activity has to become part of the management system. Therefore, the quality assurance and management system has to integrate all the existing formalized systems focused on quality, health and safety, environment, personnel, finances, security etc. It means that all processes and documents that describe these systems have to be mutually integrated.

The need to integrate the management system of an organisation may take place only upon the initiative of the organisation, it is not required by the clients of the organisation. There are no national or-international standards for integrated management systems. Introduction of the principle of integration of the quality system is the choice of the very organisation.

In the transition period conditions different approaches may be applied to the integration of the quality system, depending on the position of the organisation. One of the approaches is modification of the existing system. If the organisation already has a certified quality management system, then an integrated system is developed on the basis of the already existent system, by adding the required processes and missing elements of me quality assurance and management system.

One more method for performing integration in organisations operating in the transition period is combination of systems. The method may be applied, if there is more than one formal system, for example, a quality management system and an environmental management system - in such a case it is possible to combine two systems, and on the basis of the combined system to integrate other systems, as envisaged by the model of the quality system designed.

If the previous integration methods do not correspond to the status of the organisation and may not be applied, then the organisation may use the model for creating a system. According to this approach the system of integrated quality assurance and management is developed anew from scratch. In such a case the introduction of the management system starts with Phase I, i.e. the phase of building up the awareness of the need for the introduction of the quality system.

Conclusions and recommendations

1. The quality assurance and management system is the basis for the management process in any organisation, and, consequently, also the basis of the whole organisation. The basic goal of a quality system, irrespective of its structure or form, is continuous management of quality processes, which, in its turn, implies assessment of organisational capacity and resources, an activity that is focused on permanent enhancement of the efficiency of operation of an organisation, promotion of satisfaction of the requirements of clients or other parties involved.
   The tough competition created by the market economy, forces thousands of enterprises and organisations in all the regions of the world and in all economic conditions to pay great attention to the problems of quality management and assurance, brings about a constant

necessity to elaborate and implement new quality enhancement systems, programs, and standards.

2. Quality assurance is an absolutely necessary, in order to assure the consumer about the excellence of the products manufactured by the enterprise or the services provided. Implementation of a quality system is a guaranty that the company is thinking about the satisfaction of client's needs and the enhancement of the efficiency of the operation of an organisation. Elaboration and implementation of quality management systems is an essential and strategic issue both for organisations that are operating in the conditions of the transition period economies or in developing countries, including also Latvia, as well as for organisations in advanced economies At the same time, the situation is aggravated by the fact that, alongside with the basic problems, organisations in the transition period economies have to encounter complicated and, at times, critical additional problems, besides, they have to "struggle" with the unpredictable impact of external factors.
3. For an organisation to effectively coordinate and manage quality costs in the conditions of the transition period it has to have a considerable motivating or driving factor to ensure accurate operation of all processes of an organisation, including also mutual coordination and harmonisation of the processes of quality cost management. The more efficient the management process, the more accurately will function other processes and more successful will be the operation of the whole organisation. For attaining the said efficiency it is necessary to design and implement a quality assurance and management system incorporating a quality cost management system.
4. The analysed classical error collection system is used by most organisations in developed countries, at the same time, in the transition period and developing countries it is not enough to introduce error collection system alone. The situation in these countries is changeable and unstable. It is clear that production errors may be the cause only for some part of additional costs (and not always essential ones), which influence the results of business activities. It is necessary to have total management of the operation and processes of the company and a comprehensive analysis of errors. This may be achieved only by the elaboration and gradual implementation of the principles of total quality management.
5. For ensuring timely and constant access to the information on quality costs, the management of the organisation has to establish the information system of quality cost indicators as a constituent part of the quality assurance and management system.
6. The considerable losses due to errors in the process of production or provision of services alongside the unpredictable chaotic impact of the internal and external factors of the transition period are two basic destabilising factors in the operation of an organisation. The quintessence of these factors creates a situation, when the operation of the transition period organisation is inefficient and is insufficiently coordinated, which may result even in a crisis.
7. In the transition period and developing countries die share of hidden quality costs may form the greatest part of total costs of the organisation or enterprise. The hidden costs are difficult to calculate in financial and accounting terms. Elimination of the causes of such costs is possible with the integration of the quality assurance and management system in the total operation and structure of the organisation.
8. Organisations operating in the transition period conditions, when considering the elimination of the causes of errors, alongside with the introduction of the quality system have to consider an issue of no less importance - the establishment of the optimum quality level, thus the question remains still relevant - prior to the introduction of the quality assurance and management system it is necessary to elaborate the policy and strategy of gradual introduction of the system. Gradual introduction, first, of the quality assurance

system and, after that, of total quality management methodology and principles envisaging that each member of the staff should be responsible for the quality of his/her work and should be aware that elimination of the errors is his/her most direct responsibility, may essentially reduce the share of calculated and hidden quality costs, creating economic efficiency, as well as introduce permanent control system of quality costs and mechanisms for elimination of errors and their causes.

9. It is very important for the entities of the transition period to be aware of what quality level has to be applicable for this or that entity structure. The elaboration and introduction of the quality system and afterwards also its maintenance requires from the organisation input of additional resources. The introduction of a system of an insufficient quality level or, vice versa, the introduction and maintenance of excessive quality levels may create serious problems that may affect the functioning of the organisation.
10. Irrespective of the potentially high results of economic return of the introduction of the quality system introduced, the author of the promotional work does not recommend to make hasty accelerated introduction of the system or an instantaneous quality cost control and reform. Prior to the introduction of the said activities in the operation of the organisation, the top management in conjunction with quality professionals have to define the goals of the quality policy, the strategy of the operation, as well as the optimum level of quality management and cost control and coordination.
11. The introduction of a quality management system of an insufficient level may not ensure adequate quality assurance or management, thus the attainment of the overall goals and implementation of the policy of the organisation may be highly problematic. Such a quality system turns into an additional burden. At the same time, the introduction of a system of excessive quality levels or the idea of the attainment of the level of excellence may lead to a situation when an organisation may experience a lack of the resources and professional acumen for attaining the goals and plans set. The introduction and maintenance of the quality system becomes a serious burden and requires from the organisation allocation of all the resources available. For the transition period organisations such a situation may be too burdensome, financially inefficient and functionally inconvenient.
12. A sociological survey was conducted, using the questionnaire elaborated by the author, as a result of which it was possible to establish the opinions of entrepreneurs and representatives of organisations operating in the conditions of the transition period and developing countries on the situation concerning quality development aspects, as well as to investigate the factors promoting and hampering this process.
13. The selection of the factors promoting and hampering quality development process undergoing in the transition period and developing countries based on the results of the analysis of the data of the questionnaire indicated that problems that are related with the establishment of the necessity of the implementation may not be dealt with at an enterprise level only. Overall support and assistance should come also from the government.
14. It is necessary to have a nation-wide quality development program. Much depends on the national policy of the state and the position of the government with regard to the issue of quality assurance and management. In some transition period and developing counties the governments are aware of the relevance of quality management- This allows these countries to enhance the quality levels both nationally and internationally, as well as on a microeconomic (corporate and organisational) level faster and more efficiently.

    At the same time, the countries undergoing a transition from the authoritarian regime with a centralized command economy and vertically structured management system towards a system based on democratic management principles and relations of the free market

economy encounter serious problems both at the national and microeconomic level, which are connected with the reluctance of people to give up the previous ideals and opinions, the stagnant position of clerks dealing with the problems and development of the processes, including also enhancement of quality.

Thus it is necessary to implement and support national and international programs and measures that essentially stimulate quality assurance and management process development, such as:

- Development of national and international standardisation processes;
- Promotion and development of certification - examination and coordination measures;
- Popularisation of national quality and promotion of national quality promotion policy;
- Implementation of quality assurance and management training and education programs;
- Support from economically advanced countries;
- Support from institutional infrastructure;
- Legal support of activities and programs related with quality promotion by legislative acts and other official documents;
- Development and implementation of the quality management system.

15. It is not recommended to implement quality processes directly with a hasty development of the quality assurance and management system and prompt implementation of this system. Chapter 3 and 4of this doctoral thesis presents the results of a sociological research that show the existent essential differences that determine the economic, political and social environment of advanced and transitional and developing economies, determine the originally typical negative and sceptical attitude of the personnel of the organisations of the transition period countries towards various organisational changes and reorganisations, including also towards introduction of new principles of quality management. The development and implementation of the quality system will not ensure the anticipated results, unless a serious pre-implementation work is being carried out, including such activities as:

- Complete and accurate establishment of the necessity of the implementation of quality system and general support and promotion of the process by the senior management;
- Establishment of the necessity of the implementation of a quality system, general support by the medium level management;
- Involvement of the whole organisation and every employee in the process of enhancing the awareness and explaining the need of the quality system in the pre-implementation period;
- Establishment of a working group or involvement of independent experts in the process of enhancing the awareness of the quality system in the pre-implementation period and for coordination and management of the development for further implementation of the quality system.

16. Within the scope of this doctoral thesis, another international sociological survey - questionnaire was designed. The information obtained from the questionnaire was analysed. By using the results the author has established that in the transition period and economically developing countries, including also Latvia, there is a considerable impact of internal and external factors hampering quality development. Consequently, it is not recommended to start the perfection of quality systems in organisations with a hasty elaboration of a quality system and instantaneous introduction of this system, even

irrespective of economic and organisational advantages resulting from the introduction of the quality system.

The author of the doctoral thesis recommends a new strategy for developing and implementing the quality assurance and management system: the development phases of quality processes according to the functional aims and development stages, rationally combining them in the following three groups or development phases:

Phase I - The phase of preparation for the pre-introduction and introduction of the initial quality assurance and management system;

***Phase II** - The phase of risk management and corrective and preventive activities;*

***Phase HI** - The phase of further development and perfection of the quality assurance and management system.*

17. The quality system elaborated differs from the existing quality systems with original model elements and its unique structure. The model elements comprise an approach of continuous perfection and the methodology of integration, in its turn, the model on the whole ensures a continuous course towards excellence. Besides the internal quality assurance and management of the organisation, the model is focused on the ability of the organisation to efficiently counter unpredictable external factors, to adapt to the chaotic changes in the economic and political environment inherent to transition period economies, the ability to ensure, in a planned manner, the appropriate functioning of the organisation compliant with the requirements of the selected supplier and the organisation itself.

Taking into account the gradual development of the planned quality management process, in accordance with the distribution of the process, which is described in three phases, the model of quality assurance and management has to comprise five basic development elements, which are harmoniously interconnected and form uniform and consistent set of processes or system. The basic elements of the model of the quality assurance and management system must be:

- the stage of building up the awareness of the need of the pre-implementation of the quality system;
- selection and introduction of the initial quality management system;
- examination of the system to be implemented and organisational risk zones;
- corrective and preventive activities of the quality system;
- transition from the initial quality system to the total quality management system suitable for the transition period, envisaging risk zone management and corrective and preventive functional elements.

18. Simultaneously with the processes of evaluation and analysis of the initial quality assurance and management system, in the second phase it is necessary to perform all-embracing planned measures connected with the analysis of the risk zones of the organisation, and verification of the impact of the internal and external factors. These measures are to be targeted at establishment and apprehension of the possible and existing causes of problems and bottlenecks in the structure and processes of an organisation. After the performance of these activities it is necessary to effect planned corrective and preventive measures that allow to eliminate the causes of the existing problems in the organisation, as well as to protect the organisation against emergence of potential problems.

The author of the research recommends, already from the start, to elaborate the basic element of the quality management system - an electronic manual. An electronic quality manual ensures quick access to the most up-to-date documents, eliminates the incidence of errors, reduces distribution and storage costs, provides assistance with regard to international quality management standards, as well as helps to develop and perfect the

operation of the organisation without effecting big changes and reorganisations, which could unfavourably affect the performance of the organisation in the transition period countries.

19. The development of the quality assurance and management system and the process of continuous improvement has to be started from the very beginning, when the principles of quality assurance and management are initially introduced. The development of the system and continuous perfection are two fundamental preconditions, without which dynamic advancement and growth of the quality assurance and management system and, thus, also of the entire organisation is impossible.

In development Phase III, the activities are focused on the improvement and development. In this phase relevant changes are made related with the replacement of the initially introduced quality assurance and management system with a principally new total quality management system.

The replacement of the initial system with the total quality management system allows to consolidate the principles that considerably enhance the transparency of the operation of the organisation or the awareness of the processes going on, protection and management capacity of the organisation.

20. In the conditions of the transition period, when the impact of internal and external factors is rather unpredictable, a further perfected total quality management system allows the organisation without any special delay and with a minimum risk to respond to the unpredictable and planned conjunctive changes, which may take place both inside and outside the organisation.

The third development phase of the system does not require continuous functioning of the elements of the risk zone management and corrective and preventive measures. The total quality assurance and management system with the elements of integrated risk zone management and corrective and preventive measures can completely meet the requirements of an organisation and ensure its maximum protection against the impact of external and internal factors, thus their implementation in the newly developed quality assurance and management system is effected naturally and timely. The quality assurance and management system may be integrated with other systems and management processes. Taking into account the structure of the system, the principles of its operation and generally used methodology, it is a management system uniting all components of entrepreneurship into a unified and harmonized system targeted at ensuring the fulfilment of the objectives of an organisation and its efficient and continuous operation.