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HISTORICAL DEVELOPMENT AND PRACTICAL IMPLEMENTATION OF QUALITY MANAGEMENT PHILOSOPHY

Статтю присвячено огляду історичного розвитку підходів до концептуалізації та практичного застосування принципів управління якістю: систематизовано та проаналізовано зміни парадигм щодо визначення та забезпечення вимог міжнародних стандартів до якості продукції та якості управління організацією. Також у статті наводиться аналіз імплементації принципів управління якістю, відображених у системі міжнародних стандартів ISO, у ісламській перспективі на прикладі розробки національних стандартів менеджменту якості шляхом гармонізації вимог шариату та міжнародних вимог й рекомендацій щодо управління якістю у Малайзії. Висновки та рекомендації дослідження сприятимуть формуванню більш цілісного розуміння філософії управління якістю та розробці стратегій просування вітчизняної продукції та послуг на перспективні регіональні ринки мусульманських країн.

Ключові слова: управління якістю, контроль якості, корпоративний менеджмент, філософія управління ризиками.

Статья посвящена обзору исторического развития подходов к концептуализации и практическому применению принципов управления качеством: систематизировано и проанализировано изменения парадигм относительно определения и обеспечения требований международных стандартов к качеству продукции и качеству управления организацией. Так же в статье приводится анализ имплементации принципов управления качеством, отображенных в системе международных стандартов ISO, в исламской перспективе на примере разработки национальных стандартов менеджмента качества путем гармонизации требований шариата и международных требований и рекомендаций относительно управления качеством в Малайзии. Выводы и рекомендации исследования способствуют формированию более целостного понимания философии управления качеством и разработке стратегий продвижения отечественных продукции и услуг на перспективные региональные рынки мусульманских стран.

Ключевые слова: управление качеством, контроль качества, корпоративный менеджмент, философия управления рисками.

Article is devoted to observe of historical development of approaches to conceptualization and practical application of quality management principles: were conducted systematization and analysis of paradigms according to definition and assurance of international standards requirements to quality of products and quality of organization management. Also in the article is represented an analysis of quality management principles implementation presented in system of international ISO standards in Islamic perspective on example of creation national standards of quality management by means of harmonization sharia requirements and international requirements and recommendations according to quality management in Malaysia. Issue of quality management philosophy is coherent with quality of life and level of national economic system development. Thus, in countries of West, Asia and Middle East were prolonged life span of population and facilitated working conditions. Despite of positive results this facilitation brings up also some negative factors as like as acceleration of medicine services costs, population ageing and environmental pollution. Research outcomes and recommendations will be useful for formation more holistic understanding of quality management philosophy and creation of strategies of promotion national products and services into perspective regional markets of Muslim countries.

Keywords: quality management, quality control, corporative management, philosophy of risks management.

Introduction. During different periods of human history issue of quality of goods and services always have made influence on development of civilization. Centuries ago in primitive form quality of goods were assured by fixed rules and requirements. Thus, *the main target of our research* is systematization and representation the historical heritage of approaches and viewpoints on quality and paradigms of quality management. *Purpose of our research* is focused on determination viewpoints on philosophy of quality management in different stages of economic development and related with it practical outcomes for progress of civilization. *Analysis of basic research and resent publications* we can start from observe contemporary works consisted information about ancient authors, whose works traditionally are considered as turning points of contemporary economic history and theory: works of Ancient Greek philosophers as like as Plato (administrative tradition), Aristotle (nature of trade, money interest), Xenophon and Protagoras; Medieval European Christian philosophers who continue their tradition in interpretation moral values of economic activity in such terms as justice, aspiration to facilitate life conditions (Chrysostom, Jerome, Ambrose, Augustine). Also Chinese (Confucius) classical works and Medieval Arab-Muslim works on divine law (Sharia) and economic philosophy based on pre-Islamic traditions of caravan trade and tribal patrimonial customs of administration (Ibn Khaldun, Abu Hamid Al-Gazali). Modern works of quality management take their origins from studies and

analysis of managerial experience of H. Ford and H. Leland, H. Emerson, W. Shewhart, A. Fayol, M. Weber. Modern philosophy of quality management can't exist without Edward Deming who is considered as father of quality management due to his proposal of PDCA cycle; Joseph M. Juran author of famous book "Handbook for quality control", where was determined term "quality management", and his Japanese colleague Kaoru Ishikawa can be considered as pioneers of scientific approach to evaluate quality management results and reasons of failed strategies (diagram of Kaoru Ishikawa), Armand W. Feigenbaum (author of Total Quality Control approach), Philip Crosby, Genichi Taguchi, Shigeo Shingo (author of Poka-yoke system) and Claus Moller (author of TQM concept) [9; p. 17]. Resent works on quality management in Ukraine usually represents numerous attempts to adopt for Ukrainian socioeconomic reality international best practices and experience on quality management for education and managerial practice. In Lebanon as like as in other Muslim countries scholars mostly oriented in their research on best European practices of quality management despite aspirations of their Malaysian colleagues (Khaliq Ahmad, Zul Ariff Abdul Latiff and their followers) to create according to ISO standards for Sharia economic activity [1, p. 227].

The statement of basic materials of our research we can start from historical review of imagination about

quality and quality management.

1. From Quality Control to Corporate Management.

The most early remind about typical principles of standardization – unification and compatibility – we can meet in ancient times when were fixed sizes of building elements and constructions when were build Egyptian pyramids and other buildings 5000 years ago. Egyptian builders used modular and harmonized unification system and they were first who used testing tools.

In China were standards of quality applicable to producing of paper, silk, porcelain and other goods. European medieval manufactures have hierarchy based on experience and qualification of workers. There was special position of foreman-controller who checked goods before sale. Rules developed by manufacturers, sales men and free foremen were background for assurance of quality of goods and services. Also in medieval ages was stated and fixed specifications for producing goods, for example in document dated 1298 year we can find description of norms for wool tissue: length of row tissue should be 45 elbows and width – 3,5 elbows.

In the beginning of 14th century were instituted standard calibers for arms, that before were different around European countries. In 15th century ships in Venice were constructed from unified details that allow to quickly repairing damaged ships even in time of sea battle.

More perfect scientific methods and approaches to standardization started their development together with industrial manufacture when were founded manufacturing standards, that have created background for contemporary standards systems. In the second part of 19th century system of manufacturing standards was developed at first within frameworks of plat and than in all branches and divisions of one company which was owner of group of different plants. Standardization helped to facilitate and optimize processes of construction and manufacturing goods.

Further manufacturers started to use standards that were based on knowledge about national and international economic interests and labor differentiation. In 1842 year in England was accepted Watward's standard on thread and in Germany in 1846 was successfully realized project on unification of railway gauge and in 1875 was signed International metric convince and was founded in Sever city near Paris International Bureau of Weights and Measures [11, p.150-152].

Strong impulse to standardization evolution was transformation capitalism of free market competition to monopoly. Industrial development and concentration of manufacturing capacities of leading companies in second part of 19th – beginning of 20th century caused legalization of national standards. As result of this process were appeared national and international legal bodies on standardization. For example, in 1901 was founded Standards Committee in England. In the end of 1920th objective economic need has caused foundation of national standardization and certification organizations around Western European countries and in America. In 1923 in Swiss has took place the First international conference on standardization and in 1928 in Prague was founded International association of national

standardization organizations (ISA), transformed later in 1946 into International organization for standardization (ISO).

Thus, according to current philosophy of entrepreneurship activity all scope of responsibility for quality of goods and services should be assured by manufacturer. Despite this manufacturer in different historical periods has demonstrated variety ways of interpretation of this responsibility meanings implemented in different philosophic and practice-based approaches to evaluation and assurance of quality management.

Traditionally we can identify five historical phases of quality assurance: 1) production screening; 2) quality control; 3) quality assurance; 4) quality management; 5) corporative management [2, p.27-29]. Providing below brief observe of five stages will illustrate us variety approaches to quality assurance and their implementation into systems of international standards.

1.1. Production screening phase.

In 70th years of 20th century in weapon company (plants of Samuel Colt) was generated idea of standard quality: method of item assembling was based on random selection of details from batch. Before assembling this items were checked with help of calibers. Control of quality and calibration were performed by special trained experts-controllers.

Henry Ford in 1913 was the first who assembling line in his plants and started to use instead of input control of items before assembling output control of produces items to assure quality of goods and speed of their assembling process. He also has founded Technical control department that was independent from manufacturing process.

Henry Emerson – famous American engineer and innovator – was the first who aroused essential question about coherence between labor capacity and quality assurance that was implemented in his “Twelve principles of productivity”. Frederick Winslow Tailor is considered as pioneer in managerial consulting because he proposed concept of scientific management that bases on system approach, HR management, idea of sharing responsibility between workers and managers in assurance of quality and effective functioning of organization, and also idea of scientific valuation of labor. Frederick Tailor has developed main ideas of hierarchy structure of organizational management borrowed from works of Henri Fayol and Maks Weber. Result of activity of Tailor and Ford is practical implementation of mechanized production management (Ford-Tailor's manufacturing system) [9, p. 7].

Their idea in main its features preserved till nowadays and well-known as model of organizational management for most of contemporary industrial enterprises. In 1970th this model was replaced by managerial model of Toyota, because of popular approach to quality assurance based on 100% quality control of each item parameters requires numerous well-trained staff of experts-controllers [6, p. 17].

Situation with increasing number of controllers especially in plants of aviation and military industry (30% - 40% of staff are experts on quality control) directly was related with increasing expenses on quality assurance and

thus caused conflict between interested parts [7; p. 29]. Subject of this conflict is contradiction between interests of constructors and those who should to perform their instructions – technical staff, workers and experts-controllers. Constructor, for example, is interested in stricter quality control of items that is coherent with aspiration to increase quality norms and from other side, with their increasing responsibility of constructor is extremely limiting. In case of accidents due to non-quality details constructors blamed performers (workers, engineers, etc.) and performers blamed constructors who have designed non-quality items. Solution of this conflict was proposed by Walter Andrew Shewhart who represented idea of statistical methods for quality control and its assurance in form of control diagrams [9, p. 36].

1.2. Quality control phase.

The “Economic control of manufacturing goods quality” (1931) was revolutionary solution for mentioned above conflict of interests. Proposed by Andrew Shewhart model of statistical analysis of process variations stated that lack of quality is result of chain of reasons caused by activity of different divisions of company and its suppliers [9, p. 18]. Quality assurance systems were sophisticated due to inclusion into them statistic and analytical departments and new specialty – quality control engineer. Philosophy of quality assurance was focused on strategic planning, defects detecting, also predicting and securing risks appearance. Also was changed approach to staff motivation and attitude to quality control: consumer should to get only quality goods valid to standards. Screening stays as one of key methods of quality assurance.

Activity of company should be focused on management of manufacturing processes to assure increasing percentage of outcome of validated by standards goods [4, p. 37].

1.3. Quality assurance phase.

This phase begins from 1950 when Dr. Edward Deming from United States has presented his lectures to owners of leading enterprises of Japanese industry. Deming and his colleague Joseph M. Juran have conducted 12 lectures on quality assurance in frameworks of American technical support project for top managers of Japanese companies. American scholars have proposed idea that background of goods quality are quality of labor and quality of company management in all managerial levels. Good management creates such level of labor conditions for collective that allows to each worker to get pleasure from his/her work [3, p.4].

Material of Deming’s lectures was not limited only by popular statistic methods: scholar has proposed also to use system approach to solve and analyze occurred problems. Later this approach was named in honor of its creator – Deming’s cycle or PDCA (Plan, Do, Check, Act) approach. Top managers of Japanese companies started to use scholar’s proposal on practice and after five years were successfully realized reforms in management that together with macroeconomic transformations in the country became a fundament in 1960th of so-called “Japanese economic miracle”.

Edward Deming, who also is well-known as Shewhart’s successor, has formulated set of philosophical approaches to quality assurance also famous as “Fourteen

principles of management”: 1) create constancy of purpose for improving products and services; 2) adopt the new philosophy and style of management to imitate rate of economic losses; 3) cease dependence on inspection to achieve quality; 4) stop practice of awarding business on price alone; instead, minimize total cost by working with a single supplier; 5) improve constantly and forever every process for planning, production and service; 6) institute training on the job; 7) adopt and institute leadership; 8) drive out fear of staff for mistakes in their professional activity; 9) break down barriers between different levels of company managers and staff; 10) avoid populist slogans, exhortations and targets that are not coherent with system of management; 11) eliminate numerical quotas for the workforce and numerical goals for management; 12) remove barriers that rob people of pride of workmanship and eliminate the annual rating or merit system; 13) institute a vigorous program of education and self-improvement for everyone; 14) involve company stuff into work on quality assurance and excellence activity. These total quality management concepts can be put into place by any organization to more effectively implement total quality management. As a total quality management philosophy, W. Edwards Deming’s work is fundament of TQM theory and its successors - quality management systems.

Joseph Juran is less famous than Deming but also known as founder of “quality management” concept and creator of system method for projects aimed on their quality excellence and assurance of their stability – “Trinity of Juran” that is based on three phases: planning, control and excellence of quality. Scholar has formulated background of economic approach to quality assurance. In “Handbook for Quality Control” he was first who has classified expenses on quality assurance: 1) expenses on defect prevention; 2) expenses of quality evaluation; 3) expenses due to internal and external failures [3, p.128-130]. Unfortunately ideas of Deming and Juran were not popular in United States in 1950th due to companies willing to get more economic benefits in short period of time. Only later in 1980th their names became respectable not only in Japan and also in United States [12, p. 214].

Kaoru Ishikawa – Japanese expert in quality assurance, who proposed new approach to quality control and prediction: diagram “reasons-outcomes” or “fish’s skeleton” and quality loop. His ideas were implemented in new Japanese model of quality assurance based on: wide staff enrolment in quality management; permanent check of quality management system’s functioning; life-long learning and trainings for staff; statistic methods of quality control. This model was successfully applied in practice by “Toyota” company [8, p. 420].

Armand Feigenbaum and his colleague Philip Crosby have proposed concept of TQC (Total Quality Control) and for principles of quality among those are risks-oriented thinking and process approach to quality management. But in the same time was occurred another dilemma related with coherence between quality and effectiveness: under condition of producing quality goods according to current standards but without considering consumer’s needs, losses of company will extremely grow up and was changed viewpoint on sharing responsibility

for losses of company between top managers and other staff [4, p. 114-115].

1.4. Quality management phase.

This phase is related with development of TQM (Total Quality Management) concept that bases on Deming's cycle and closely related with intensive development of international trade and formation of global market. Professor Genichi Taguchi has proposed to minimize losses by assuring quality on phase of modeling and designing in industry. Taguchi's regret function allows analyzing economic factor (cost) and quality together [11, p.354]. His colleague, Professor Shigeo Shingo, has renowned authority on quality control and efficiency, originally developed the mistake-proofing idea.

Poka-yoke is a technique for avoiding simple human error in the workplace. Also known as mistake-proofing, goof-proofing, and fail-safe work methods, poka-yoke is simply a system designed to prevent inadvertent errors made by workers performing a process [10, p. 42]. The idea is to take over repetitive tasks that rely on memory or vigilance and guard against any lapses in focus. Poka-yoke can be seen as one of the three common components of "Zero Defect Quality Control" approach implemented by Japanese companies [10, p. 82].

Realizing this value as an effective quality control technique, Professor Shigeo has formalized it in Japanese manufacturing as the poka-yoke system. One hundred percent inspections catch unacceptable products but do nothing to improve the process. Today, his concept is in wide use in Japan. "Toyota Motor Corporation", whose production system Shingo helped to design, averages twelve poka-yoke devices per machine in their manufacturing plants, thus validating the concept as beneficial to industry [10, p. 52].

Danish economist Claus Moller is founder of new method of planning manager's activity called "time-management", that was introduced in his work "Putting People First", wrote for "Scandinavian Airline Services" and later for "British Airways". In 1980th on request of "Japan Airlines" he adopted his method for Japan according cultural peculiarities of this country. Also Moller is known as expert who has prepared first generation of managers in Soviet Union on start of soviet economic model rebuilding and reforming (1984-1985). In 1987 Moller's consulting company wins in competition with other 48 companies tender on staff training and second stage modernization consulting for 16 thousands of experts from countries of European Economic Union. His training program "Management for everyone" helps to limit a scope of bureaucracy in Commission of European Economic Union in Brussels and Luxemburg [2, p. 188].

Under conditions of accelerating globalization since 1980th national quality assurance standards became inevitable restriction in international trade. So why in the beginning of 21st century viewpoint on national standards was cardinally changed: company's standards and national area standards are considered as just temporary phase before creating and worldwide recognizing of international quality standards.

In 1987 American Ministry of Economics has founded national award for quality in honor of former

minister of Economics M. Bolbridge, which annually is granted to winner by president of United States. Following American experience European Foundation for Quality Management has created concept of excellence model and since 1991 annually is conducted competition on EFQM Award. That becomes beginning of new phase in quality management concepts evolution.

1.5. Corporative management phase.

Corporate management system is whole unity consisted of a lot of different coherent parts. Concept of corporate management requires from managers ability to identify and determinate main connections within components of quality management system, detect their special aspects that forming its integral characteristics [4, p.76].

2. Alternative economics and quality management standards.

Nowadays Ukraine and Lebanon together with many others developing countries are on the way from national area standards to implementation of international best practices of corporate quality management and quality standards. But considering peculiarities of religious factor (Islam) and its influence on character of economic activity in countries of Middle East or even in Europe, we also should pay attention to Halal certification (food industry, pharmacy and cosmetics) and implementation of these principles in corporative management systems.

Successful attempts of creating based on Sharia standards for quality management were made by scholars from different parts of Muslim countries where issue of quality assurance strategies has attracted attention of business organizations: enhancing of company's competitiveness, success and vantage position on the international markets, as evidenced by Japanese companies where quality was adopted as hub of their business strategies towards international success and excellence [1, p. 10].

From Islamic viewpoint quality always was in the center of the religious teachings that are based on Holy Quran. A lot of Quranic verses emphasize on quality deeds, practices and performances of human beings though many synonymic words indicate general concept of quality from Sharia (divine law fixed in Quran) viewpoint. Actually quality aspects represented by synonyms enrich contemporary western concept of quality management by spiritual values related with improvement, mastery, good deed, honesty, credibility, taking responsibility, following better model and calling for goodness. In philosophic sense quality is significantly emphasized in Islamic thought and focused on motivation of people to use quality practices as lifestyle and economic activity aimed on creating comfort, justice and conscience relief [5, p. 65-67].

Regarding to analysis of contemporary Muslim managerial thought and recent books, we can underline that quality assurance and quality management concepts are based on excellence and outperformance of others, also with achieving content and satisfaction by beneficiaries. For leading Middle Eastern companies practical implementation of quality management systems brings positive results in the same time for organization and consumers. Also implemented quality management

system allows to company be ready and response to market challenges and competitions [1, p. 52].

Quality concept philosophy in contemporary managerial thought differs by researcher and discipline area according to place, time and environment. Quality in Islam is usually reinterpreted as universal, inconstant and lasting in every time and place because of Quran verses are revealed by Allah. But contemporary managerial thought refers to this concept using special terms while an overarching concept of quality still far from unanimity because quality variably defined by various authors in accordance to their disciplines of interest.

Nowadays Malaysian scholars visualize quality in Islamic intellectual discourse more in practical than in theoretical frameworks contrary to modern approaches to quality [5, p. 49-50]. In this sense, they argue that quality is a product of the Islamic thinking since thousands of years, and their contemporary theorization on quality reshaped and remolded the concepts and practices emphasized by the Islamic approach using modern terms that were implemented into two groups of quality standards: IQOMS 313 – Islamic based quality organizational standards and Halal food assurance system (HAFAS).

Conclusions. Key point of different quality management standards systems – classical western and oriented on religious needs their Middle Eastern alternatives – both focus their efforts on customer satisfaction that is essential for any business. Implementation of quality management standards helps to organization to meet customer expectations and ensure a benchmark for your product or service.

Quality management standards philosophy provides framework for business to manage its processes and activities. They can help you improve efficiency by providing the best practice model to follow. To assure quality management standard organization needs to set up systems and to identify key processes in it to provide its products and services that can allow delivering consistently on its promises.

Series of ISO standards are the best known set of standards which help you to evaluate and measure quality management system. If organization follows requirements of these standards it gets an edge over competitors. Today many large businesses and public sector organizations only offer contracts to suppliers with ISO 9001:2015 certification or in case of Middle Eastern region – to holders of alternative to them standards HAFAS and IQOMS 313.

Perspective for further research can be subjects related with philosophy and applied aspects of mediation of national, regional and international standards to facilitate international trade and harmonize international economic relations, increase scale of strategic partnership within and beyond historical regions.

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