QUALITY MANAGEMENT SYSTEM

THE MAINE EXECUTIVE LEVELS OF CONSUMERS SATISFICING ACCORDING TO ISO 9001

page 4–6

The adoption of a quality management system should be a strategic decision for an organization. customers relation is a business strategy and it's level is higher than the amount of grows sales and it's purpose is not only having more benefit but also client satisficing. All departments one's organization can be directly or indirectly connected with clients. Each client has a different conceptions to one or a number of organizations. there are a number of methods for handling this matter, the best one is making CRM strategy with the ISO 9001 strategy. In this case study the main executive levels in an organization were described.

Keywords: customer satisfying, CRM, ISO 9001, customers relation, method, strategy, project and process.

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ECONOMY-RELATED RISKS INTERPRETATION AND CLASSIFICATION

page 6–8

Based on the analysis of the requirements of legal acts and regulations of Ukraine for Technical Regulation, the need for a differentiated approach to assessing the belonging of the evaluation object, which may be an enterprise, type of economic activity or enterprise products to the risk groups is shown. The essence of the term «risk» and corresponding closely-related concepts was analyzed, their unambiguous interpretation for referring economic entities to the risk groups, which take into account adverse effects, caused by economic activities, is proposed. The division criteria and classification of economy-related risks for grading economic entities and their products according to the risk levels are proposed. It is concluded that it is advisable to systemize, classify and specify the presented types of risks for each economic entity and its economic objects as an important component that has a significant impact on its activity in general and the life cycle of its products.

Keywords: quantitative measure of danger, risk classification, grading economic entities, risk assessment.

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VALIDATING MEASUREMENT TECHNIQUES DURING ACCREDITATION OF TESTING LABORATORY VALIDATING

page 9–11

The procedure of validating measurement techniques, which is necessary during accreditation of testing laboratories, is described in the paper. Today, the validation procedure in most cases does not have a regulatory-methodological support. The peculiarity of its conducting in different situations, which occur in practical activities of testing laboratories, is shown. The examples of calculating validation characteristics, the choice of which depends on the type of a measurement technique, its modification extent, alteration of intermediate precision factors, have been presented. It is shown that the necessary condition for validating a certificated technique is the confirmation of acceptability of results using statistical criteria. The association between statistical accuracy indicators of a technique and measurement uncertainty has been considered. It is shown that random factors are estimated by repeatability, equipment influence, calibration, conditions, operator, i. e. reproducibility, while factors, unaccounted by these characteristics, are estimated by uncertainty of results.

Keywords: validation, statistical criterion, acceptability of results, precision, accuracy, measurement uncertainty.

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STRUCTURAL PROPERTIES OF ENTERPRISE QUALITY MANAGEMENT SYSTEM

page 12–14

It is suggested to consider the quality management system (QMS) as a large complex system and applying appropriate analysis methods, especially at the designing stage, since it gives grounds to the system model and mistakes, made at this stage, are the most costly and hard to amend. For analyzing the system, it is suggested using the theory of relations with carrying out the structural analysis that allows providing information about the «loading» rate and importance of system elements, comparing the systems with other structures, obtaining data on «weaknesses» of the system, that will enable timely improving and correcting the system. It is suggested to assess the quality management system according to such system properties as system coherence, process rank, system persistence that will give a quantitative characterization of the system at the designing stage. The proposed toolkit can be used in making decisions on developing a quality management system at its early designing stage, in order to avoid errors and ensure the efficiency of the system under development.

Keywords: quality management system, graph, process.

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ANALYSIS OF QUALITY MANAGEMENT SYSTEM IN THE DYNAMICS

page 14–16

Requirements of the international standards ISO 9000 necessitate developing methods for quantitative assessment of quality management systems (QMS). The QMS features indicate the need to study the characteristics of both processes and the system as a whole with their operation time. In this paper, it is proposed to apply the nonparametric statistical methods to assess QMS processes in the dynamics. Using these methods allows to evaluate the processes quality in the absence of information on the distribution law of quality index as a random variable. As a result, using nonparametric criteria to analyze process stationarity and randomness and identify a regular component of the QMS process functioning in the dynamics was substantiated. The technique and the algorithm for applying these criteria for processes quality assessment based on the QMS operation practice, which can be used by any company for quantitative assessment of the processes quality in the dynamics, their analysis and continuous improvement were proposed.

Keywords: quality management system, processes assessment, dynamic characteristics, nonparametric statistical methods.

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CAUSES OF ACCIDENTS ON THE ROADS AND THE DEVELOPMENT OF DEVICES TO PREVENT COLLISIONS

page 17–19

The statistics of road accidents in the world is presented. The most probable causes and consequences of accidents on roads were analyzed. Devices, allowing to minimize losses in vehicle collisions were proposed. To solve the problem of safe movement of vehicles on roads is the topical issue. For this, it is necessary to study and analyze the statistics of road accidents and to identify the key factors, which cause fatal accidents or injuries. To develop the complex of measures and modern devices, allowing to avoid collisions and minimize losses in accidents is pressing problem. Road accidents are the most dangerous threat to human health around the world. Damage from road traffic accidents (RTA) exceeds the damage from all other transport accidents (aircrafts, ships, trains, etc.) together. Road accidents are one of the major global threats to human health and life. The problem is aggravated by the fact that victims of accidents are as a rule young and healthy (before the accident) people. According to the WHO, in the world 1,2 million people die and about 50 million are injured in road accidents each year. More than 27,000 die on Russian roads, and more than 40,000 on USA roads. In terms of the number of vehicles, these figures mean 70 dead in road accidents in Russia or 15 dead in the USA in a year for each 100 000 vehicles. According to statistical estimates, more than 3 million people died in accidents on U.S. roads since the beginning of the XX century that exceeds all USA losses (650,000) in all military conflicts (since 1774).

Keywords: vehicles, road accidents, accident prevention devices.

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BASIN PLANNING OF SUSTAINABLE DEVELOPMENT OF SMALL RIVERS OF UPPER PRUT RIVER

page 19–21

The integrated hydromorphologic and geoecological conditions of key basin systems such as Gukov, Dereluy and Vyzhenka have been assessed. The following methodological techniques were chosen: basin approach, hydromorphologic assessment and analysis, the stability degree of river bed, definition of anthropogenic basin transformation, conflicts of natural resource use, hydroecological hazards, and ecological risks. Method of geohydromorphologic analysis and theory of ecological risks for small rivers conditions has been enhanced. The condition of river beds and inundable complexes of basin indicators according to the stability degree to anthropogenic loads has been assessed as well as conflict types of natural resource use and dominating ecological risks have been determined. Hydromorphologic and geoecological monitoring of small river and universal algorithm of hydromorphologic assessment of small river basin for sustainable development have been worked out and put to an evaluation test. Interpretative maps for sustainable development of Gukiv, Dereluy and Vizhenka rivers have been drawn up. Practical importance of research concludes the possibility of the proposed monitoring and algorithm application in order to solve methodological and applicative problems connected with the operation of systems «basin — river — human» and «basin — river — bed» in the view of contemporary action and human needs; necessity in modification of customer-type stereotypes for natural resource use as well as provision of recommendations regarding revitalization of basin systems and small rivers.

Keywords: basin system, hydromorphologic quality, small river, sustainable development, anthropogenic influence.

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LANDSCAPE PLANNING AS AN INSTRUMENT FOR ENVIRONMENTAL QUALITY MANAGEMENT OF URBAN AREAS

page 21–23

This article discusses the need in landscape planning in the management of environmental quality in urban areas and some results of the author's research in this area. The main objective of the study is to find ways to improve the effectiveness of environmental management of urban areas by means of landscape planning methods and principles. By using the methodological framework of landscape planning in research it is possible to identify the scenarios of its development based on a comprehensive spatial analysis of the study area. This article discusses the results of the inventory phase of landscape planning on the example of Dzerzhinsky district of Kharkiv. The developed models are digital map information resource basis to support management decision-making in the field of environmental protection. The research results can be used to developing a system of environmental protection measures, as well as integrated landscape planning of Kharkiv.

Keywords: environmental quality management, urban areas, landscape planning, inventory, digital cartographic model.

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IMPLEMENTING QUALITY MANAGEMENT SYSTEM AT ENTERPRISES

page 24–26

The category of product competitiveness, which is determined by a set of quality and cost peculiarities of goods, meeting the

buyer's needs, as well as the costs of purchase and consumption of corresponding products, is substantiated. Implementing the quality management system at enterprises, based on international standards ISO 9000, which will allow finding the ways for improving financial results of its activity, is considered in the paper. For controlling product quality at all stages of production, it is necessary to establish a distinct comprehensive quality system. Implementing the quality management systems, which conform to international standards ISO 9000, will allow raising image and reputation of a company, improving customer's satisfaction and efficiency of the existing quality management system, providing a flexible management of a company, simplifying and speeding up procedures of interaction with customers, reducing defects and production expenses. In addition, it will increase revenues, improve organization of enterprise management, and also give the opportunity for encouraging investments.

Keywords: quality, products, standard, competitiveness, certification, quality control.

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INTEGRATION PROBLEMS OF REGIONAL AUTHORITIES OF TECHNICAL REGULATION AND INSPECTIONS ON CONSUMER PROTECTION

page 26–28

The problems of improving the activity of territorial authorities on the state consumer policy implementation were considered since the quality of this activity is the determining factor for stable regional development. State control has a great effect on the functions of other organizations. Their broad «punitive» powers are still not considered as service activities; therefore, the change in the work of these bodies must be paramount to accelerate the European integration process. Assessment of possible integration spheres of territorial authorities of technical regulation and inspections on consumer protection to perform their basic powers effectively was conducted. To improve the implementation effectiveness of state policy on consumer protection, it is proposed to combine the potential of regional inspections on consumer protection and state centers of standardization, metrology and certification into the territorial bodies of the State Inspection of Ukraine for Consumer Rights Protection — Head Offices of the State Inspection for Consumer Rights Protection in the administrative centers of Ukraine.

Keywords: technical regulation, quality control, service, consumer protection, market surveillance.

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CORRECTIVE ACTIONS FOR EVERY CRITICAL CONTROL POINT WHEN PRODUCING DAIRY PRODUCTS

page 29–31

The process of applying corrective actions and deviations in the dairy industry is considered in the paper, and the research results in this field are given. The main objective of the study lies in developing a plan of corrective actions for every critical control point (CTP) in the HACCP system. The plan will help to remove occurring deviations. The techniques of removing deviations and reclaiming products are documented in the HACCP system (Hazard Analysis and Critical Control Point). The offered deviation procedure for dairy products as well as the procedure of determining corrective actions by the example of butter production, allow detecting deviations by using an accelerated testing of antibiotics in output unpasteurized milk. The deviation procedure indicates that milk should remain in a tank and not be discharged. The procedure of corrective actions is needed for determining the problem cause and taking measures for preventing recurrence and further tracking by means of monitoring and re-evaluation.

Keywords: corrective actions, monitoring, deviation, critical control point, procedure, inconformity.

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CUSTOMERS' PURCHASING RISKS

page 31–33

The customers' purchasing risks are considered in the paper. The results of the research in this field are given. The main objective of the study lies in developing the method of a quantitative assessment of such risks for the purpose of managing them. The causes and effects of purchasing defective, unsafe and faked goods by consumers are considered in the paper. The given method allows obtaining a quantitative assessment of consumer's risk and losses from a particular type of product, taking into account its peculiarities. The research results can be used by experts in examining goods, by manufacturers and specialists in the field of consumer rights protection. Developing a system of informing people about such risks will reduce consumer's dissatisfaction and the amount of complaints to respective authorities, and also draw manufacturers' attention to the problem of ensuring a due product quality.

Keywords: customer risk, morality, risk identification, consumer (customer), risk assessment.

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MAPPING INDEXES IN RATING ESTIMATION

page 34–36

The comparability problem of numerical values (including quantitative-qualitative) of indexes in estimating a wide range of objects is solved in the paper. The method of parameters processing, in particular, reduction of their unbounded domain to the bounded, which is based on rationing is presented. The method of indexes mapping in rating estimation, which lies in dividing the value domain into several sections and boundary values mapping is given. New boundary values are rationed. The proposed method of indexes mapping in estimation allows to ensure results comparability in objects estimation. This allows to take into account the demands and wishes of people, who perform rating estimation, use its results and are interested in ensuring the correlation between the estimate obtaining rules and pragmatic goals.

Keywords: estimation, rating estimation, indexes comparability, piecewise-linear rationing, index domain.

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ASSESSMENT OF FUEL RATE IN SPECIFIC OPERATING CONDITIONS

page 36–38

The analysis of estimated indicators, affecting fuel rate by armored vehicles in specific operating conditions is presented. Restrictions, inherent in the specifics of vehicles operation when performing service-combat missions are given. Ways of improving the existing mathematical model of fuel rate are proposed. The purpose of the research is to assess fuel rate dependence in specific operating conditions for the mathematical model improvement and further fuel rate calculation method development. To achieve this goal it was necessary to solve the following key problems: to assess the impact of major operational and structural factors on fuel rate in specific operating conditions; adopt restrictions, which will allow to improve the mathematical fuel rate calculation model, which unlike the existing considers the factors of specific operating conditions.

Keywords: fuel rate, specific operating conditions, mathematical model, armored vehicles.

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QUALITY IN MEDICINE

ANALYSIS OF FACTORS INFLUENCE ON THE OPERATOR'S PSYCHOPHYSIOLOGICAL STATE DIAGNOSTICS QUALITY

page 39–41

System analysis of the factors, influencing the quality of measurement and diagnosing when studying the cerebral cortex biorhythms using EEG was conducted in the paper. The main purpose of the paper is taking note of the impact of factors, increasing the diagnostics reliability of operator's psychophysiological state.

Based on the standard procedures for using EEG, the influence of the key factors and their components on the operator's psychophysiological state diagnostics was considered. These include factors, characterizing the research object, expert's qualifications, measurement channel design, as well as information processing methods, which were the objects of the conducted classification analysis. It was found that these factors do not have an analytic representation that leads to the subjectivism in diagnostic inference. To eliminate subjectivism and increase the operator's psychophysiological state diagnostics reliability, using quantitative integral parameter, equivalent to the biorhythm energy and associated with the electroencephalogram result, was proposed. This integral parameter can be used for estimating the professional aptitude of operators, whose work is connected with the necessity of mobilization and concentration of psychophysiological features.

Keywords: biorhythms, electroencephalograph, cerebral cortex, psychophysiological state, reliability.

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INTELLECTUALIZATION OF AIR STAFF DIAGNOSTIC DATABASE AS MEANS OF IMPROVING PROFESSIONAL READINESS QUALITY

page 41–44

The problem of forming a diagnostic database for air staff by using modern facilities with intellectualizing capabilities is considered in the paper. Herewith, the development of such databases is provided with the necessary algorithms and modeling methods. The formation of a physiological database in a digital format with the automatic control implementation is proposed. In this regard, intellectualization concerns the database structure formation, as well as its technical input, which maintains the decision-making about a deviation level of body physiological parameters from specified ones for allowance of carrying out a flight assignment. Multilateral expert systems of evaluating medical data using a system, estimating the dynamics of diagnostics parameter changes are considered in the paper. It allows obtaining not only the dynamics of body changes, but also identifying general outlines of the most profound changes in it for running diagnostics. Practical recommendations for applying the developed method by using modern means of communication have been worked out.

Keywords: automatic control, database, relational model, stored data, bioobject model.

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HARDWARE AND SOFTWARE SYSTEM FOR ASSESSING OPERATORS' PSYCHOPHYSIOLOGICAL STATE

page 44–46

In today's world there is a need of a high-quality and rapid assessment of psychophysiological state (PPS) of health of operators, engaged in different activities. One of modern methods of assessing psychophysiological state of an operator's cerebral cortex (CC) is electroencephalography. However, current researches of CC segments, using actual electroencephalographs (EEG), have many disadvantages, which are connected with: the efficiency of using facilities for measuring CC biopotentials and quantitative methods of processing measured data. The software and hardware complex, i.e. an automated expert system, is presented in this paper. It allows a physician to analyze quantitative parameters of stationary records and transient process of the electroencephalogram using the software that, in its turn, allows assessing (diagnosing) operator's PPSCC. The developed hardware and software system has shown its effective-

ness in the process of diagnosing operators' cerebral cortexes during the experiment stage. The developed software can be used by medical professionals for assessing PPSCC of operators of different activities.

Keywords: electroencephalograph, EEG, evoked potentials, expert system, diagnostic data processing.

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ECONOMICS OF QUALITY

PRINCIPLES, METHODS AND MODERN TRENDS IN ANALYSIS OF RESIDENTIAL REAL ESTATE MARKET

page 47–49

This article provides an overview of existing approaches and methods to analysis and forecasting of the residential real estate market as well as the problem of development of a multifactorial mathematical model of the price per square meter of residential real estate in the city of Kharkov. It also analyzes the current state of the subject area and reveals that one of the acute issues of analyzing real estate market data lies in the automated search of the key factors that determine the behavior of the system, and as a whole there is a need for automation of the process of analyzing and processing the results of measurements to construct mathematical models. The main purpose of the research is to develop an automated method of structural identification of multivariate model to predict property prices and increase efficiency of the resulting model. Development of an automated method of structural identification of a multifactional model of the price in the residential real estate market facilitates the adoption of scientifically substantiated practical solutions in management and study of both the development of this market and the economy as a whole. This model will allow to model values of price indicators based on the different possible scenarios in the economy considering economic situation of the city and the country. The results of the research can be used in the purchase and rental transactions, in cadastral valuation of residential real estate for taxation purposes, in development of projects and other dealings with residential real estate.

Keywords: residential real estate market, methods of structural and parametric identification of the multivariate model.

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THE INFLUENCE OF THE INTELLECTUAL CAPITAL OF THE AGRICULTURAL SCIENCE AT THE AGRICULTURAL SECTOR EFFECTIVENESS IN UKRAINE

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The theoretical aspects of the nature of the category of «intellectual capital of Agricultural Sciences» its organizational and institutional structure in Ukraine and methods of the economic-mathematical modeling of the effects of financing «intellectual capital in Agricultural Sciences» at the efficiency of the agricultural sector is being described. The relevance is confirmed by the difficult situation in the agricultural scientific community: a low level of funding for the scientific research, a significant lag behind the world-class technical equipment for research laboratories, as well as researchers' low salary, lack of junior scientific staff and low agricultural producers' sensitivity to scientific and technological achievements. The main goal of the research is to identify the impact of the category «intellectual capital in agricultural science» at the agricultural sector and to enhance its effectiveness. It was revealed that with an increase in funding to 1 UAH for scientific and technical work the amount of 125 UAH for GVA in agriculture will increase. The results of the research may be applied by the experts in the field of Agricultural Economy.

Keywords: intellectual capital, agricultural science, structure of the intellectual capital of agricultural science, agricultural sector efficiency.

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GOALS AND CONTENT OF PUBLIC PRIVATE PARTNERSHIP

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The paper analyzes the goals and content of public private partnership (PPP) as well as identifies benefits for parties which implement such agreements. The main features and application fields of PPP are indicated. It is emphasized that despite the difference in goals (a private partner strives to obtain a stable profit whereas the state in interested in increasing the scope and improving quality of services delivered by infrastructural and socially focused industries to population and economic agents), the parties to PPP agreements reach a compromise in resolving strategic objectives and mitigating social conflicts. It is demonstrated that an important prerequisite for motivating the private sector to join PPP is abidance by clear legal formal rules in the institutional system. Research results may be used by economists and public administration specialists in designing development programs of territorial entities of different levels (regions and the country as a whole).

Keywords: public private partnership (PPP), private partner, state, interests, benefits.

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