



PRODUCTION RESERVES

RESEARCH OF ERROR STRUCTURE OF STANDARD TIME SIGNAL SYNCHRONIZATION SYSTEM VIA DIGITAL TELEVISION CHANNELS

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The error structure of the standard time signal synchronization system via digital television channels was investigated. The relevance of this research is determined by changing the format of television broadcasting in Ukraine from analog to digital, which has necessitated the creation of a new standard time signal transmission system, adapted to the current format.

An estimate of the basic permissible error of the system of standard time signal transmission via digital television channels, which has a value no less than similar estimates for foreign radio navigation systems was obtained.

Based on evaluation of the basic allowable error of the standard time signal transmission system, it was shown that it is possible to ensure the required accuracy of reproduction of unit intervals of standard time scales in the process of determining the metrological characteristics of time and frequency measures when using the comparator for the standard time signals, transmitted via digital television channels.

An important aspect is the independence of the metrological characteristics of the system of standard signal transmission via digital television channels on the technical condition of any foreign radio navigation systems, traditionally imposed on the consumer as sources of precise time-frequency synchronization.

Keywords: time scales, standard time signals, working time and frequency standard.

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RESEARCH OF CAPILLARY PRESSURE DIVIDER FOR COMPLEX THROTTLE CIRCUITS

page 9–14

One of the necessary conditions of functioning of complex gas-dynamic systems is maintaining of set pressure or their ratio to throttle elements. Pressure regulators are traditionally used for this purpose. However this problem solution is often costly and inefficient, particularly for systems that require the use of large number of pressure stabilizer. In addition, various exemplars of pressure stabilizers in the circuit operate differently, that lead to disproportionate, often with different sign, changes of gas flow consumption through them, causing significant divergence of stabilized pressure from the given value.

The main variants of pressure dividers and their functional dependence are investigated in the article. They are a series of throttles (e. g., capillary glass tubes). Absolute pressure stabilizer is set in the output of this series. These capillary dividers are characterized by unidirectionality of interthrottle pressure increments. They can provide proportional increases in pressure difference at appropriate design of capillaries. Range boundary of pressure correlation that can provide linear and nonlinear capillary pressure dividers are determined by divider modelling. Proportionality of interthrottle pressure increments of linear dividers allows effective use it in gas-dynamic synthesizers, gas consumption set unit that particularly used for setting of carrier gas consumption and gas chromatograph calibration.

Keywords: capillary pressure divider, pressure division ratio, pressure change linearity, gas-dynamic synthesizer.

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THE STUDY OF THE PHYSICO-CHEMICAL PROPERTIES OF SOFT CHEESE MADE WITH UNTRADITIONAL INGREDIENTS

page 14–17

Manufacture of dairy products, especially cheese production, on the basis of reconstituted milk and milk recombination is an important task. Stable quality is the most important criteria. Soft cheese production is rapidly developed with the low complexity of technology. Wide range and organoleptic advantages compared with traditional types of cheese give hope to meet the consumer demand.

Development of combined products of soft cheese with inclusion the proteins and fats of vegetable origin in product content is perspective task. Vegetable ingredients of different nature, their use in soft cheese product technology provide the appearance of a new formulation of nutrients in new relationship with the major proteins, fats, carbohydrates, minerals, vitamins. The main advantage of the combined products is fully conformation with the balanced nutrition issues. In addition, the actual problem of saving the materials of animal origin is solved.

Advanced and approved technology of soft cheese product on the basis of skimmed milk powder with a partial replacement of the main material by concentrate of crushed peanut kernels and corn flour with refined and deodorized oil gave positive results of physical and chemical parameters and organoleptic properties.

Soft cheese, made by advanced technology, can be used to prepare a variety of meals and snacks in the restaurant business enterprises.

Keywords: soft cheese product, skimmed milk powder, crushed concentrate of peanut kernel, corn flour.

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THE STUDY OF THE BIOLOGICAL VALUE OF THE STRUCTURED PRODUCT FROM SOFT CHEESE MADE FROM CONCENTRATE CHOPPED KERNELS OF SUNFLOWER SEEDS

page 18–20

Structure and food ration of modern humans indicate a deficit of essential components and objects, including animal origin. Demand for animal proteins, according to some facts, is satisfied less than 80 %. Modern ideas about nutrition suggest that milk protein plays a basic role among them. An important problem in development of new products is also consumer meeting demand and safety.

Curd is a richest source of complete protein. Man's organism almost completely assimilates curd protein. The high biological value of proteins is conditioned by composition and balance of amino acids and good assimilability. The colloid state of proteins determines their easy availability and digestibility. Milk-based products have a complex structure.

The low-fat kernel of sunflower seeds is one of the most promising types of material. Use of it in the technology of new products will improve the food and biological value and expand the range of product. It has an exceptionally high biological value. It is thought that the core protein of sunflower seeds is the least different from the egg white among other vegetable proteins.

In connection with this, we have carried out the work for development of technology of soft cheese product including a core protein of sunflower seeds in the formulation. The research of the accessibility of new product protein component is performed, positive results are obtained. New product development and introduction into production allows expanding the assortment and consumer meeting demand for dairy products.

Keywords: structured product, concentrate of sunflower seed kernel, biological value of protein, protein accessibility in vitro.

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THE ANALYSIS OF PRODUCTION SAFETY FACTORS IN TECHNOCHEMICAL CONTROL OF OIL AND FAT MANUFACTURE

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The basic principles and aims of food safety international system (HACCP: Hazard Analysis and Critical Control) are presented in the article. The features of its introduction in the oil and fat industry in connection with the monitoring of the ecotoxicants (pesticides, polychlorinated biphenyls and polycyclic hydrocarbons) in vegetable oils and margarine production (margarine, confectionery fats) are given. It is shown that the effectiveness of the HACCP system implementation connect with the need to create the modern charts of technochemical control of raw materials and finished products of oil and fat production. A prerequisite for this process is creating the flowcharts of physical and chemical hazard factors of food products and initiation of new methods for determination of natural and anthropogenic ecotoxicants using modern physical and chemical methods of analysis such as gas-liquid chromatography, gas-liquid chromatomass-spectrometry and high efficiency liquid chromatography.

Keywords: food safety, natural and anthropogenic ecotoxicants, vegetable oils, margarine production.

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ECONOMICS AND MANAGEMENT OF ENTERPRISE

INVESTIGATION OF METHODS FOR PRODUCTION AND TRANSPORTATION PLANS OPTIMIZATION OF ENTERPRISES TAKING INTO ACCOUNT THEIR INNOVATIVE ACTIVITY

page 26–30

In the article, a methodical approach is proposed for optimization of manufacturing and transportation plans of enterprises and companies taking into account their innovation activity. It is based on the classical optimization problems: production planning problem and transportation problem. The main idea of our approach is functional dependence of production and transportation costs on innovative investments. Firstly, the case on single industrial enterprise is studied which manufactures the multi-item finished product, secondly the supply chain is analyzed including besides the enterprise the transport companies and set of destinations (consumers of finished product). In both cases, it is assumed that innovation is connected with the manufacturing technology only. In result, the optimization problems in the field of non-linear (convex) optimization are formulated. The results obtained may be used in the practice of innovation planning of enterprise with application of information technologies.

Keywords: innovative activity of enterprise, optimization of production plan, transportation plan, and innovative activity plan.

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DEVELOPMENT OF MARKET'S RISK ASSESSMENT METHOD FOR SUPPLY CHAIN ACTIVITY PLANNING UNDER RANDOM DEMAND

page 31–35

In the article methodological approach to the assessment of market risk for supply chain activity planning is suggested. It is supposed

that there are several plants-suppliers for manufacturing of complete set for a single plant which manufactures the finished products. The approach is based on the linear programming models application for joint optimization of production plans of suppliers and manufacturer plans, transportation plans for finished product delivery at destinations.

A method for assessing the economic expediency of insurance risk associated with a deficiency or excess products is proposed. This method is to estimate the expected profit from sales of products based on risk insurance and without insurance.

The possibility of further generalization of the model under examination for the case of dynamic models of inventory control is pointed out.

Keywords: supply chain, destinations, random demand, market risk, insurance risk.

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SOCIAL RESPONSIBILITY OF DOMESTIC ENTERPRISES

page 36–39

The article deals with the conditions of enterprises functioning in modern economy, which are characterized by high dynamism of external environment. A domestic enterprise can become effective due to its adaptation to these changes. Compliance of internal environment with the requirements of external environment as the most important factor in market success has prompted the enterprise to constant transformation.

Purposeful and continuous development of enterprises, which maintains the economic, industrial, technical, social indicators within the influence of external and internal environments, requires consideration of the interests of customers, subordinates, society, partners, employees, suppliers, managers, shareholders.

Social responsibility is the strategic direction of social development of enterprises.

It is outlined the essence of CSR as a concept whereby the enterprise should consider the interests of the society by taking respon-

sibility for the impact of decisions and activities on society and the environment, consumers, employees, partners, suppliers, managers.

The directions for implementing social responsibility focused on enterprises purposeful and continuous development are given.

The advantages given for an enterprise by realization of social responsibility are exposed. The emphasis on the appropriateness of the matrix which helps to identify the key elements of feasibility of socially responsible business is placed on.

The prospects of the further development of the social responsibility of domestic enterprises are outlined.

Keywords: social responsibility, business environment, matrix of feasibility, enterprise, internal and external environments.

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DEVELOPMENT OF ENERGY CONTROLLING CONCEPTUAL STATEMENTS

page 39–43

Controlling as a modern enterprise management concept is increasingly used to improve the effectiveness of the different departments of enterprise. One of its new directions can become energy controlling. The author's definition of this concept is given in the article.

Energy controlling can't exist at the enterprise in isolation from the general system of controlling. Based on this, it is allocated the aims of integrated management system of energy infrastructure on the basis of use of controlling main provision and it is shown the energy controlling location in this system. Ensuring continuous improvement of energy management, the company's management should create the conditions for maintaining the stability of the energy infrastructure (balanced social, economic and environmental development). The main tools of controlling are characterized and the possibility of their use in enterprise energy infrastructure management is shown.

Keywords: controlling, energy infrastructure, energy management, sustainability, management.

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DEFINITION OF ESSENCE OF CONCEPT APPROACHES TO CREWING BUSINESS CONDUCT

page 43–47

It is a research of conceptual approaches to crewing business conduct. It is ascertained that their essential basements are determined by the interests of ship owner as principal and crewing company acting as servant on seaman labor market. Seaman is object in this business process though which principal and servant performing the service pursue their own interests. They treat the seaman interests as secondary and limited to assigning of salary.

On the other hand, seaman maximizing behavior in selection of employment variant means pursuit to unitize his limited resources (human capital, time, health) in the way to obtain maximal result in achieving competing goals, including of intangible nature (career, preservation of health, prestige of employment company, minimization of travel time, leaning the World, etc.).

The seaman subjectively estimates «weight» of positive and negative factors, determines his own «shadow» prices and selects the employment variant with maximal difference between summarized «shadow» prices of positive-negative factors and marginal utility of used resources.

In practice, seaman capability to take a decision based on such economic approach is limited as a rule.

This leads to considerable economic losses of ship owner and his servant due to early discharge of seaman from the ship, causes severe socio-psychological and economical damage to employee.

That is to provide optimization of business concept of crewing activity by including seaman interests into structure of interest of principal and servant. The mechanism structure of making the most favorable employment decision by seaman basing on economic approach is offered.

Keywords: conceptual approach, parity of parties interests, economic approach to human behavior.

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FORMATION OF LIABILITY SYSTEM OF INDUSTRIAL UNITS FOR MEAT INDUSTRY ENTERPRISES

page 48–52

The theoretical and practical aspects of liability system formation of the industrial enterprise main units are investigated in the article. Experience of domestic enterprises shows that the lack of financial responsibility effective system in industry leads to increase the production rejects and violations of labor and production discipline. The main elements of the liability system and the directions of their formation are identified and determined. In our opinion, the major direction of liability system formation is selection of typical violations between company divisions and listing the reclamation classifiers. Definition of the method and source of cost recovery by guilty divisions is also important for formation of economic relations between the units of the enterprise. According to the authors, the main ways of enterprise unit liability implementation are increasing the cost of goods (works, services) of corresponding unit and decreasing the incentive funds of guilty units using the mechanism for calculating the ILD production units. The basic directions of liability system formation aimed at increasing the motivation of enterprise units to the effective operation of industrial relation system are illustrated on the example of «Eremeevskii meat plant» LLC.

Keywords: liability, arbitration board, reclamation classifier, system of sanctions, cost recovery.

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ATTRACTION OF FOREIGN INVESTMENT IN THE DEVELOPMENT OF DOMESTIC GAS PRODUCTION ENTERPRISES AS NECESSARY PRECONDITIONS FOR ENERGY INDEPENDENCE OF UKRAINE

page 53–56

The article presents the analysis of the state of gas enterprises of Ukraine. As a result of analysis there were revealed problematic aspects and prospects of attracting foreign investments in the development of domestic gas companies. There was proved a necessity of attracting foreign investments and suggested a way to achieve energy independence of Ukraine, which is based on the use of an initial public offering of the gas enterprises of Ukraine on international stock exchanges. As a result of research there was revealed that IPO of gas companies of Ukraine on international stock exchanges would help to increase the volume of investment in the industry and, as a consequence, increase the volume of gas production in Ukraine, and to achieve energy independence of Ukraine in the long term.

Keywords: foreign investment, gas companies, energy independence of Ukraine.

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DEVELOPMENT OF PRODUCTIVE FORCES AND REGIONAL ECONOMY

RESEARCHES OF DEVELOPMENT PROSPECTS OF KNOWLEDGE ECONOMY IN UKRAINE

page 57–61

In today's world, there are new trends, one of which is the transformation of knowledge into a key resource of development, globalization of competition based on creating the science- and knowledge-intensive products and services. However, the issues regarding the development and implementation of a knowledge economy in Ukraine remain under-investigated.

The paper considers the nature of the knowledge economy, its impact on economic goods, prospects and directions of formation, implementation and development of the knowledge economy in

Ukraine. The theoretical foundations of the knowledge economy were developed, development trends of economic relations under the growing influence of the «knowledge» factor in a modern economy were found and systematized.

The analysis of the knowledge economy peculiarities, which lies in the fact that this economy uses information resources that have specific features and distinguish them from traditional resources was performed.

The paper presents the rating of Ukraine by indices, relating to information and communication technologies. The conditions and new factors of economic growth, the implementation of which is important to achieve progress towards the formation of a knowledge economy in Ukraine were examined. The research on the development prospects of the knowledge economy in Ukraine, conducted

in the paper is aimed at promoting economic reforms, namely the formation of favorable conditions for investors in the creation of intellectual products; formation of an effective incentive system of taxation; stabilization of the political situation and so on.

Keywords: knowledge economy, human capital, information resources, traditional resources, enterprise, innovations.

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DEVELOPMENT DIRECTION SUBSTANTIATION OF UKRAINIAN RETAIL ENTERPRISES IN CRISIS CONDITIONS

page 62–69

The directions of intensive development of retail in Ukraine are discussed in the article. The tendencies of wholesale and retail trade in Ukraine through the analysis of trade turnover indices and specialization of retail network are investigated.

The influence of various factors on the dynamics of the index of retail turnover in Ukraine, including the consumer price index and average wages, is determined using multivariable regression

The structure of retail trade in Ukraine by organizational forms is analyzed. The existence of tendency to reduce the number of retail outlets with its consolidation is determined.

It is identified that the main way of Ukrainian retailers is extensive way. Use of concepts of relationship marketing, logistics and category management is proposed for implement of intensive development of domestic retail intermediaries and increase their effectiveness. The importance of effective management by supply chain of retailers is grounded.

The research results can be used by managers as major retailers and owners of small retail stores.

Keywords: retail, trade turnover, retailers, logistics, category management, supply chain.

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MATHEMATICAL METHODS, MODELS AND INFORMATION TECHNOLOGIES IN ECONOMICS

DEVELOPMENT OF METHOD OF RISK ASSESSMENT OF SHIP'S DEMURRAGE AS A RESULT OF RESTRICTED RELIABILITY OF PORT'S MECHANISMS

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The methodical approach is proposed for assessment of additional ship's demurrage under loading (unloading) arising because of port's mechanisms failures and corresponding reduction of loading (unloading) processing rate. This approach is based on theory of queueing systems evolving in random environment. With the help of the linear Markov processes the algorithm is developed for actual standing time of ship distribution function finding taking into account possible reduction of processing rate. This distribution function allows us to calculate a forecast of ship's time of demurrage. The results obtained give possibility to formulate the criterion of expediency of demurrage risk's insurance by port terminal's operator (the risk of contract laytime exceeding). Practical use of our method allows a port terminal's operator to reduce his financial loss under such risk appearance.

Keywords: port's terminal, failures of port's mechanisms, random demurrage of ship, insurance.

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MODELING THE PARTICIPANT'S BEHAVIOR IN PROJECTS OF ERP IMPLEMENTATION

page 75–80

This article presents an analysis of modern studies of behavioral theories that allow to find the solutions of complex problems of implementing innovative projects in organizations. The main purpose of this study is to develop the approaches to improve the effectiveness of the participant's activities in ERP implementation projects. The «human» factor is one of the main causes of failure or low efficiency of such projects realization. People resist innovations and do not want to do extra work to get new opportunities. The methods of game theory can provide the solutions. The proposed approach allows to find optimal variants to stimulate the participants of the project, as well as to determine the conditions to create coalition

of different participant's categories to maximize of project effectiveness at minimum cost. The results can be used as a basis for the optimal solutions in the organization of ERP-systems implementation projects.

Keywords: behavioral theories, ERP implementation projects, games theory.

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