ABSTRACT AND REFERENCES

CONTROL PROCESSES

SYNERGISTIC ASPECT ANALYSIS OF THE ORGANIZATION ADAPTATION TO CHANGES IN THE ENVIRONMENT THROUGH A PORTFOLIO OF PROJECTS (p. 4-10)

Valentina Molokanova

The possibility of applying the general provisions of synergy, as an integrative discipline, to the methodology for the organization development management through portfolios of projects was considered. Comparative analysis of the traditional classical and synergistic approaches to the evolutionary development of systems was given. The concept of bifurcations in development systems, as sudden and unexpected changes in organizational processes, was examined.

Methodological principles of monitoring the organization development portfolio, which provide ongoing control of the organization development progress within established deviations of the defined indicators were presented. The cases of growth of internal entropy of the system and loss of property of adaptation to the environment based on a system approach were reviewed. Application of value approach to synergistic organization development management based on investigating the indicators of the organization adaptation to changes in the environment was proposed. The algorithm of using the synergistic management for evolutionary organization development were presented, control calculations to analyze the results on the example of the operating enterprise were conducted.

Keywords: adaptation to environment, portfolio of projects, synergistic management, evolutionary development.

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ANALYZING THE STRATEGIES USED IN MEDIA DISCOURSE MANAGEMENT (p. 10-14)

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Digital economy is based on digital revolution and information management that gave rise to the new media image in the era of globalization. Media and media discourse management is a completely new concept for establishing innovative relations between manufacturer and consumer.

The subject of interest of the present article is the analysis of the existing strategies in media discourse management. The introduction concerns the etymological meanings of the notion of discourse and its application. The main objective of the study is to reveal the capacity of media discourse management in expanding the consumers' cognitive resources and maintaining stable information links in everyday life.

The author aims at generalizing the main problems related to the scope and subject of media and media discourse management. Linguistic genetics and media management were applied as key methods in the study of Polish, German and English media resources.

Keywords: media discourse, media discourse management, communication, interaction, information reception, linguistics, hypertext.

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SERVICE REGULARITY INVESTIGATION OF FIXED-ROUTE TAXI DURING ON-PEAK HOURS (p. 14-22)

Olexiy Kuzkin

In conditions of high service frequency on city routes, which is characteristic of “on-peak” hours, often there are cases of group bus arrivals when buses, belonging to the same or different routes arrive at stops almost simultaneously. Taking into account such cases in assessing the service irregularity and average waiting time is the concern of the paper, because, from the passenger’s point of view, each such case is seen as arrival of one bus.

Functional dependences of the values of the relative service irregularity and the average waiting time on the value of the network service frequency on the stop, provided that the flow of buses arriving at the stop is the easiest were proposed and theoretically substantiated.

A field examination of the service regularity of fixed-route taxi in the city of Zaporizhzhya (Ukraine) was performed, based on which, using the method of regression analysis, the dependences of the values of the relative service irregularity and average passenger waiting time on the mathematical expectation of service interval of buses on the route were obtained. According to the results of statistical processing of results of field surveys, it was found that in conditions of network service frequency of more than 30 units per hour, the flow of buses of different routes arriving at the stop is distributed according to the Poisson law. This allows to use the proposed theoretical approach to the calculation of the average passenger waiting time, which increases the accuracy of its determination for passengers who can travel several routes in the studied conditions.

Keywords: stop, waiting time, high service frequency, irregularity, group bus arrival.

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REVIEW OF STATISTICAL ANALYSIS METHODS OF HIGH-DIMENSIONAL DATA (p. 23-30)

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We live in the era of "big data". Big data opens up new opportunities for modern society, has become the "raw material" for production, a new source for immense economic and social value. At the same time, big data has set new computational and statistical tasks before the researcher. In order to study the status of these tasks, the paper describes the main applications of big data, investigates the statistical computing problems, associated with a large volume, diversity and high speed, affecting a paradigm shift of statistical and computational methods. A review of existing statistical methods, algorithms and research in recent years is presented. The research results show that several factors require the development of new, more effective statistical methods and algorithms: firstly, traditional statistical methods are not justified in terms of statistical significance with respect to big data; secondly, in terms of computational efficiency; the third factor is relevant to the specific features inherent in big data: heterogeneity, the accumulation of noise, spurious correlations, etc. It appears that this area will continue to be the subject of research.

Keywords: big data, statistical analysis, statistical analysis methods, bootstrap, resampling.

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TRANSFORMATION OF THE STRUCTURE OF COMPLEX TECHNICAL SYSTEMS WITH PARTIALLY UNUSABLE ELEMENTS TO THE VISUAL IMAGE
(p. 30-35)

Sergiy Nesterenko, Andriy Stanovskyi, Alla Toropenko, Shvets Shvets

The issues of structure state recognition of the hidden part of complex network objects under limited information from their hardly usable elements, including intellectual transformation of information from usable elements into some visual image of the entire object, followed by its recognition and restoration of damaged structures were considered.

The proposed method for the state recognition of network objects formed the basis for constructing the intelligent decision support system during operation and re-engineering of renewable wireless computer networks with the elements, unusable for direct monitoring that increase the structural reliability of these networks.

To achieve the goal, the following tasks were solved: the overall structure of the method for the structure transformation to the visual image was proposed; the theoretical basis of the method, which is the scientific novelty of the work was formulated.

Testing of the proposed method within the common system of maintaining performance and re-engineering of damaged wireless computer networks was performed.

Keywords: artificial intelligence, visual display, network structures, elements under redundancy, hardly usable elements.

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METHOD OF EVALUATION OF THE QUALITY LEVEL OF THE REGENERATIVE ANTI-WEAR ADDITIVES TO FUELS AND LUBRICANTS (p. 36-43)

Pavlo Fastovec

The method of evaluation of the quality level of regenerative anti-friction anti-wear additives (RAAA) to fuels and lubricants was developed, namely three levels of quality indices of RAAA were adopted; these indices were identified and grouped and formulas for their calculation or scoring were proposed; weight of group indices was defined; the sequence of calculations was determined; the results of laboratory studies, bench and field tests of the additive "RVS PS" were systematized, analyzed and processed; the developed method was tested; specifications of the additive were defined.

The relevance of the developed method is caused by the market saturation of RAAA with similar characteristics and different prices. Accordingly, consumers face a problem of choice. One solution to this problem is to substantiate reasonable "value for money", which should be based on the developed method.

The sequence of calculations is as follows: first, level III indices are calculated (18 indices, arranged into 6 groups), then – level II indices (group) are calculated as the sum of level III indices in the group and completed by calculating the integral quality index as the sum of six group indices taking into account their weight.

Testing of the developed method of evaluation of the quality level of RAAA has confirmed its efficiency and given the quantitative estimate of the quality level of the additive "RVS PS" in the form of the integral index, which was 3.978, and the coefficient of competitiveness was 5.525. It was found that the additive "RVS PS" is the most effective in couplings, joints and assemblies, from 80 % to 100 % worn, and the regeneration degree of the technical condition parameters is about 36 %. If the degree of wear is less than 40 %, the regeneration does not occur.

The developed method allows to evaluate the quality of other RAAA more objectively than by previously known methods, which will greatly simplify the selection of the most effective additives and indicate the directions of their further improvement, the price of RAAA will correspond to the quality.

Keywords: machine couplings, joints and assemblies, regeneration, additives, quality level, method of evaluation.

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EFFECT OF PROCESS-DEPENDENT PARAMETERS OF THE HANDLING-AND-STORAGE FACILITY OPERATION ON THE CARGO HANDLING COST (p. 43-47)

Natalia Shramenko

Analysis of the handling-and-storage facility operation revealed the disadvantages of the technology that is related

to the non-consideration of incoming cargo traffic variations in the planning and organization of industrial activity.

The criterion of the handling-and-storage facility operation that presents unit costs for cargo handling has been formalized. The criterion makes it possible to take into account the cargo owner's costs associated with downtime of vehicles waiting for service and the storage facility costs related to the maintenance of productive resources.

The regression analysis results have demonstrated that a number of loading and unloading mechanisms were of the greatest effect on the cargo handling cost at the handling-and-storage facility.

The results obtained determine the formation of the rational service technology of cargo transportation at the handling-and-storage facility due to the choice of the rational number of loading and unloading mechanisms, depending on the volume of incoming cargo traffic.

Keywords: handling-and-storage facility, technology, process-dependent parameters, cargo handling cost.

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ANALYSIS OF THE LEGAL FRAMEWORK FOR THE INFORMATION SECURITY MANAGEMENT SYSTEM OF THE NSMEP (p. 48-59)

Sergey Evseev, Hryhorii Kotz, Olga Korol

Legal acts in the field of protection of banking transactions in the national system of mass electronic payments, its structure are considered. An analysis of the legal framework of banking activities has shown that it is generally based on international standards that define the basic principles of the information security management system, recommendations to counter cyber attacks on banking systems. However, incomplete regulatory and methodological support of information security, especially in the area of indicators and criteria significantly complicates, and sometimes makes it impossible to objectively evaluate the information security system effectiveness. The analysis of the main sources of threats to the confidentiality, integrity and availability of data is carried out. Currently, over 90 % of all crimes are associated with the use of automated banking systems, based on the synthesis of "traditional attacks" such as brute force and social engineering. The basic requirements of the standards to the functions of the information security management system, software tools of technical information security systems in the banking institutions of the National Bank of Ukraine are considered.

Keywords: information security of banking transactions, threats to banking data.

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