



EKONOMICKÁ UNIVERZITA V BRATISLAVE  
FAKULTA HOSPODÁRSKEJ INFORMATIKY  
UNIVERSITY OF ECONOMICS IN BRATISLAVA  
FACULTY OF ECONOMIC INFORMATICS



**A**ppplied **I**nformatics **E**conometrics **S**tatistics **A**ccounting

## ZBORNÍK

14. medzinárodná vedecká konferencia  
**„AIESA – BUDOVANIE SPOLOČNOSTI ZALOŽENEJ  
NA VEDOMOSTIACH“**

konaná pod záštitou  
rektora Ekonomickej univerzity v Bratislave  
Dr. h. c. prof. Ing. Rudolfa Siváka, PhD.

a

dekana Fakulty hospodárskej informatiky  
prof. Ing. Michala Fendeka, PhD.

## PROCEEDINGS

14<sup>th</sup> International Scientific Conference  
**„AIESA – BUILDING OF SOCIETY BASED ON  
KNOWLEDGE“**

held under patronage  
of rector of University of Economics in Bratislava  
Dr. h. c. prof. Ing. Rudolf Sivák, PhD.

and

of dean of Faculty of Economic Informatics  
prof. Ing. Michal Fendek, PhD.

**10. – 11. November 2011 \* 10<sup>th</sup> – 11<sup>th</sup> November 2011  
Bratislava**

**MEDZINÁRODNÝ VEDECKÝ VÝBOR  
INTERNATIONAL SCIENTIFIC COMMITTEE**

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- Predseda:** **prof. Ing. Michal Fendek, PhD.** – dekan, Fakulta hospodárskej informatiky, Ekonomická univerzita v Bratislave
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**doc. RNDr. Luboš Marek, CSc.** – dekan, Fakulta informatiky a statistiky, VŠE v Praze

**RECENZENTI:**

Igor Bandurič, Peter Bednár, Mária Bilíková, Martin Blahušiak, Ivan Brezina, Magdaléna Cárachová, Zuzana Čičková, Andrea Furková, Pavel Gežík, Marián Goga, Michal Grell, Michaela Chocholatá, Zlatica Ivaničová, Zuzana Juhászová, Alžbeta Kanáliková, Brian König, Alena Kordošová, Igor Košťál, Martin Lukáčik, Adriana Lukáčiková, František Maděra, Jitka Meluchová, Milan Olexa, Lucia Ondrušová, Branislav Parajka, Juraj Pekár, Eva Rakovská, Marian Reiff, Eva Rublíková, Peter Schmidt, Renáta Silná, Daniela Sivašová, Miloš Sklenka, Eva Sodomová, Ján Solík, Karol Szomolányi, Anna Šlosárová, Hana Trochanová, Miloš Tumpach, Ľubomír Turňa, Peter Závodný, Drahoslava Židová

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**Plenárne rokovanie**

**Plenary Session**

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## **Competitiveness of the ICT Graduates in Tertiary Sector in the Czech Republic**

A lot of changes have been applied on Czech tertiary education system in last years. Some of them were successful implemented some of them not. Main impact of all applied changes is decreasing amount of financial sources flowing into tertiary education system. Permanent increasing number of students and graduates in tertiary education system is accompanied by increasing number of HEI (Higher Education Institutions) – namely private of them. Main goal of this contribution is to analyse and to present identified trends and to compare it with other selected European countries.

*prof. Ing. Petr Doucek, CSc., Katedra systémové analýzy, Vysoká škola ekonomická v Praze*

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## **Application of microeconomic analyses by evaluating of the competitive environment in Slovakia**

During the transformation of the Slovak economy to the market model there was a need to deal with the whole range of important issues related to the new principles of market mechanism in a short time. Existence of imperfect competition market structure is inseparably connected with obvious as well as hidden negative effects for implementation of market competition. Adherence to the competition rules in developed countries of the world and in the European Union states is being watched over institutionally and this systemic element of the economic development is taken very seriously. This article presents the possibilities of utilizing the apparatus of microeconomic models which evaluate state and development of competitive environment in sectors of Slovak national economy.

*prof. Ing. Michal Fendek, PhD., dekan, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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## **Wage developments in the Czech Republic for the past 16 years**

This article describes the trend of income distributions in Czech Republic over the years 1995 - 2010. There is not social economy study on the topic incomes. We analyze time series of incomes over these years. The income distributions and their trends are analyzed over all Czech Republic, next depending on sex and age (we work with three age groups – under 30 years, 30-50 years and over 50 years). For the better comparison in each category we published the common characteristics of location and variability and their trend over time. The trend of incomes in CR is increasing linear over time in accordance to sex and to age, too. As suitable characteristic of location we have chosen average and median. For measurement of variability we have used standard deviation. The Gini index over all Czech Republic and for each category was calculated. The values of this index are increasing over time. The values are in boundaries 0,22 – 0,265 over all Czech Republic.

*doc. RNDr. Luboš Marek, CSc., dekan, Fakulta informatiky a statistiky, Vysoká škola ekonomická v Praze*

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## **Applicability of General SEM Model in Researching Corporate Bankruptcy and Business Cycles**

The empirical research confirms the necessity of considering changing business cycles in developing corporate bankruptcy prediction models. The useful tool for this kind of economic investigations can be a general structural equation model (SEM). The stage of business cycle and firms' economic power can be represented by variables which reflect the impact of some unobservable, latent variables. A general structural equations model is used for testing a hypothetical connections among observed and latent variables. The application of such type of the model needs a precise description of relations among considered variables, based on economic theory. The main theoretical and also practical problems, connected with the applicability of a general SEM model for researching corporate bankruptcy in changing business cycles, have been discussed in the paper.

*prof. dr hab. Józef Pociecha, prof. UEK dr hab. Barbara Pawelek, Department of Statistics, Cracow University of Economics*

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**1. sekcia**

**1<sup>st</sup> Section**

**Informačné technológie a informačné systémy**

**Informatics technologies and information systems**

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## **REST Architecture of Information Systems**

Service oriented architecture became defacto standard for integration of middle sized an large sized enterprise information systems. The most common implementation of SOA are web services based on SOAP protocol. This technology is now present in broad spectrum of fields. The spectrum is so broad that it is sometimes to complicated for some application to use such implementation of SOA. Along with emerging virtualization and cloud solutions the new architectural style oriented on resources – REST is becoming more popular. This paper deal with basic principles of REST architecture and compares it with SOA.

*Ing. Igor Bandurič, PhD., Katedra aplikovanej informatiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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## **Microsoft Visual Studio Integration with Sparx Systems Enterprise Architect**

The article discusses integration between Microsoft Visual Studio and Sparx Systems Enterprise Architect. The focus is on main features of Sparx Systems MDG Integration for Visual Studio and integration problems with MS Visual Studio 2010 and Team Foundation Server 2010 which have new features and they were not included into the MDG integration product.

*Ing. Martin Blahušiak, PhD., Katedra aplikovanej informatiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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## **Theoretical Aspects of Information Protection in Computer Networks with Focus on End User**

Article discusses the approach to information security in terms of using available standards at home and abroad. Points to the lack of implementation of standards and metrics. He tries to suggest ways to prevent incidents with security architecture for the end-user focus and its activities in a computer network and use of information technology.

*Ing. Júlis Hlaváč, PhD., Katedra aplikovanej informatiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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## **Industrialised Information Management**

Due to growing requirements for quality, efficiency, transparency and customer orientation of information technology services, the need for integrated management comes to the forefront. The aim of industrialized information management is the overall optimization of processes at IT service providers, emphasizing the link between the sourcing, producing and delivering of services. For this purpose, management methods from the industry are transferred to the area of IT services. This paper characterizes the principles of industrialized information management and describes an integrated approach of management that is based on the Supply Chain Operation Reference (SCOR) model.

*Ing. Jaroslav Huľvej, PhD., Katedra stratégie a podnikania, Fakulta managementu, Univerzita Komenského v Bratislave*

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### **Stock Investment Recommendation Making Supported by Case Based Reasoning**

We focus on the Case Based Reasoning, i.e., a knowledge management system designed to store, retrieve, reuse and revise knowledge represented in a set of records called cases. Our application field is the stock investment recommendation making supported by Case Based Reasoning. Financial indicators such as Price to Earnings Ratio, Return on Equity are inputs to the recommendation making process. Buy, Hold, Sell are examples of possible recommendations. We analyze possible applications of CBR systems in this field and explain the recommendation making process using an example with US stocks.

*Mgr. Milan Jakel, Ústav informatiky, Filozoficko-prirodovedecká fakulta, Slezská univerzita*

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### **Finding a Quality e-learning and New Technology in its Implementation**

The article deals with e-learning, outlines its importance and its development. It outlines some of the models used in evaluating e-learning. Points to search for quality e-learning and new technologies that are used in its implementation.

*Ing Alžbeta Kanáliková, PhD., Katedra aplikovanej informatiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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### **Intelligent Tutorial System Using Associative Representation of Knowledge**

Teaching is a process which has some repetitive standardize phase methods, procedures and rules. When a large number of students in universities there is an effort to implement e-learning practices to streamline and support the educational process. Our article goes a step further and analyzes the possibility to save the knowledge taught in computer usable form, and thus make computer a simplified artificial substitute of teacher. For this purpose it is necessary to solve complex technical issues in addition to the very forms of knowledge representation and many aspects of didactics and psychology. Article generally analyses the possibility of using the associative representation of knowledge for automated teaching and testing students' knowledge.

*Ing. Daniel Kastl, PhD., Katedra aplikovanej informatiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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### **The Use of a Polling Technique in a Threaded Client of a Distributed .NET Application**

If we develop by .NET Remoting a .NET distributed application with a threaded client that has a user interface we have to often solve a problem of the responsiveness of its user interface. For example, how does our application respond when an asynchronous method call is being executed? How do we update the user interface during executing an asynchronous call? We can use a polling technique and continually test for completion of an asynchronous



method call. This paper shortly describes a polling technique using the *IsCompleted* property of the *IAsyncResult* object returned by the asynchronous operation's *Begin* method to determine whether the operation has completed. The *IAsyncResult* interface represents the status of an asynchronous operation and it is implemented by classes containing methods that can operate asynchronously. In a conclusion the paper demonstrates the use of a polling technique in the threaded client of sample distributed .NET application.

*Ing. Igor Košťál, PhD., Katedra aplikovanej informatiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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### **Student Testing Automation**

This paper deals with implementation of a student testing solution based on C# language and client server architecture. Online testing is an extension of already used test editing and offline testing solution, which was successfully used in real world student testing. The design of the module includes a secure framework, minimize cheating options, reuse the testing data in the existing solution, minimize teacher efforts, etc.

*Ing. Miroslav Kršjak, PhD., Katedra aplikovanej informatiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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### **Energy Market Information Portal**

The article deals with the proposal of information portal in the field of trade with energy and the use of renewable energy resources.

At the same time the portal should provide the basic structure for the involvement of the electricity system, the basic models of the network, data of the network status and individual performances in the throughout of the day, week, month.

The project should include a proposal for a database, and its structure. Part of that system will be the solution to the optimization of the energy network, an active selection of the number and structure of the involvement of the generators in the power stations. The system will display the various renewable energy resources, the construction possibility of the new resources.

Article should serve as an introduction to the design and implementation of information system in which all of FHI EU Bratislava departments could be involved in.

*Dr., Ing. Kultán Jaroslav, PhD., Katedra aplikovanej informatiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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### **Technical Project in the Environment of the Automated Statistical Information System**

Contents and functions of the technical project are, in the SO SR environment, published as a part of the official Regulation for provision of the statistical surveys, designing, programming and data processing. Technical project specifies and expressly determines information of the content and methodological nature of the survey as well as determines technical and organizational process of the preparation and processing of the statistical surveys

that are provided by the relevant department of the SO SR. Technical project concretizes the requirements concerning the ascending information.

*Ing. Milan Olexa, PhD., Katedra aplikovanej informatiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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### **eGovernment from Strategy, Coordination and Legislation Point of View of the Slovak Republic**

The dynamic development of Information and Communication Technologies (ICT) has an effect on the methods by which the public administration provides its services to citizens. Thanks to new ICT, the public services are currently of better quality and more effective than before. eGovernment affords the possibility to transform relations with citizens, businesses, and public administration of various levels. Traditionally, the interaction between a citizen or business and a government agency took place in a government office. With using ICT it is possible to provide better public services closer to the clients, to realise better delivery of government services to citizens, improved interactions with business and industry. eGovernment seeks to use ICT to improve the quality and accessibility of public services. It can reduce costs for businesses and administrations. eGovernment brings also very important benefit because it helps to make the public sector more open and transparent and governments more understandable to citizens. The aim of this contribution is to explain the main ideas of eGovernment strategy of Slovak Republic, to offer the review of coordination and current legislation of eGovernment of Slovak Republic.

*Ing. Anna Ondrejková, Katedra aplikovanej informatiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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### **Systematization of Knowledge Management Implementation in Public Administration**

Public administration, requires the implementation of new technologies and efficiency of their use and application of a systematic approach to individual IT projects. This is possible only through rigorous analysis not only on a technical level but also in terms of understanding the problems and correct analysis of the processes and knowledge in public administration. The paper deals with just analyzing processes in public administration and suggests framework methodology for implementing knowledge management in this area.

*RNDr. Eva Rakovská, PhD., Katedra aplikovanej informatiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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### **Cryptographic Smart Cards Lifecycle and their Management with Respect to X.509**

Cryptographic smart-card utilization and their management is tightly connected to X.509 certificate lifecycle. Paper describes the smart-card management lifecycle, its particular phases (e.g. initialization, personalization, delivery and distribution, usage, renewal and discarding) and puts it into the context of X.509 certificate management lifecycle (e.g. cryptographic key generation, creation of certificate signing request, certificate issuance and dissemination, certificate expiration etc.). In the latter part of paper we describe several

approaches to card management and in the end we illustrate the complexity of software necessary for management of cryptographic smart-cards in larger enterprises.

**Mgr. Martin Rublík, PhD.,** *Katedra aplikovanej informatiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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### **Online Virtual Exhibition**

The paper will deal the virtual exhibition, as an alternative to traditional fairs. The research shows that the virtual fairs have a high efficiency of obtaining leads. Look into more virtual fairs we arrive at certain knowledge that in the paper presented. We compare the advantages and disadvantages of various forms of trade fairs. For the specific example we are trying to highlight the necessary services they must provide a virtual trade fair and look into the future of these fairs.

**Ing. Mgr. Peter Schmidt, PhD.,** *Katedra aplikovanej informatiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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### **Structure of Legal Contracts for Integration IT Projects**

The initial phase of a project consists of a definition of the project scope (WHAT), a definition of a project organization (WHO) and a budget approval process (HOW). The selection of an integration partner, as a part of the initialization phase has two main goals: to find a partner who delivers a desired solution in the required time, quality and budget and to find a partner who can maintain and extend the IT solution when the solution is fully operable. A contract as a legal document signed by the organization and the integration partner defines base parameters for the project and future extensions of the IT system. In this paper we present categorization for failure reasons of IT projects. We assign them to quality categories and show what areas has to cover by a contract and why those areas need to be addressed in the initialization phase of every IT project.

**Ing. Mgr. Branislav Siarsky,** *Faculty of Management, Comenius University in Bratislava*

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### **Potential of eMarketing**

In my report present eMarketing tools, their capabilities and practical uses. eMarketing is part of firm strategy long time. The next part describes a specific description of the tools usable in the application of marketing on the Internet, use, benefits, opportunities and constraints. Results of the issue is an overview of the use of internet marketing tools and their practical application.

**Ing. Mária Szivósová, PhD.,** *Katedra aplikovanej informatiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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## **Application of the Correlation Properties of the System to Influence of Chaotic Impulses**

In many situations, act on the systems diverse, often contradictory and chaotic impulses and instructions. Article addresses the correlation effects on the possibility of using such a process management of the system.

*RNDr. Lubomír Turňa, CSc., Katedra aplikovanej informatiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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## **Influence of Additional Conditions to Solve the Differential System**

The paper is devoted to the differential equations with concomitant conditions, as a differential-algebraic equations and to the problems of numerical solutions.

*RNDr. Lubomír Turňa, CSc., Katedra aplikovanej informatiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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## **Visualization in Multimedia Systems**

In multimedia systems, different software tools are used for visualization, designing and creating pictures, animated objects in 2D and 3D space. Subject of visualization can also be economics processes. Visualization of a problem is also a part of study in course Multimedia systems. The article presents a tool Google SketchUp for visualization and animation of 3D objects.

*PeaDr. Drahoslava Židová, PhD. , Katedra aplikovanej informatiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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**2. sekcia**

**2<sup>nd</sup> Section**

**Aktuálne trendy vývoja teórie a praxe účtovníctva  
a audítorstva**

**Current trends of development of accounting and  
auditing theory and practise**

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## **Deferred Income Tax in National and International Accounting Standards**

This article is focused on deferred income tax in the national accounting regulations of the Slovak Republic and international accounting standards (IFRS, US GAAP). The result of the thesis is a comparative analysis of the deferred income tax, their calculation methodology, financial implications of the accounting, their reporting in the individual financial statements and pointing of principal differences between national and international accounting standards.

*prof. Ing. Anna Baštinová, CSc., Katedra účtovníctva a audítorstva, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

*Ing. Mgr. Martin Tužinský, PhD., Fakulta managementu, Univerzita Komenského v Bratislave*

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## **Zásadní změny požadavků na stanovení fair value po přijetí standardu IFRS 13 - Fair value Measurement**

Measurement in financial accounting has been the most discussed issue in recent decades. The last very important result of the convergence process between IFRS and U.S. GAAP was adopting IFRS 13 - Fair Value Measurement in May 2011. The objective of IFRS 13 is to unify the approaches to determining fair value under IFRSs. The aim of this paper is to offer a comprehensive evaluation of the pros and cons that this standard brings.

*doc. Ing. Dana Dvořáková, Katedra finančního účetnictví a auditingu, Vysoká škola ekonomická v Praze*

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## **Statement of Financial Performance – its Place in Accounting of Budget Organizations**

Statement of Financial Performance has its place in accounting of budget organizations. The article presents the knowledge of this statement, its preparation and presentation according to the legislation in force in the Slovak Republic in years 2003 - 2007 and since 2008 until now, for group of public sector entities, which includes budget organizations, and its place in the financial statements in the context of IPSAS.

*doc. Ing. Antónia Kovalčíková, PhD., Katedra účtovníctva a audítorstva, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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## **The Analysis of Financial Statements According to the Slovak Legal Regulations and US GAAP**

U.S. GAAP represent a set of principles by which the balance sheet is designed primarily for investors, standards are mostly geared to the experience of accounting practices and less the theoretical concepts. The reason is that for U.S. is typical common law, as opposed to the law system applicable in the Slovak Republic. These different approaches also affect the information provided for the purpose of financial analysis, calculation and assessment of indicators of financial analysis and comparability of the calculated results.

*Ing. Zuzana Kubaščíková, PhD., Katedra účtovníctva a audítorstva, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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### **Payments in Advance in the Foreign Currency and Exchange Rate Differences**

The payment in advance in a foreign currency is discussed in this paper. Slovak accounting adjustment does not allow translating the assets and liabilities denominated in a foreign currency to the Euro according to the exchange rate announced by the ECB and NBS for needs of their reporting as of the balance sheet date. These items are recorded in the value of which they were valued as of the date of their arising. We present to the reader the arguments to argue with this solution. We propose to translate the payments in advance as of the balance sheet date for the needs of reporting in accordance with the principle of true and fair view.

*Ing. František Maděra, PhD., Katedra účtovníctva a audítorstva, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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### **Analysis of the Insurance Market During the Financial Crisis and its Impact on the Results of Insurance Companies**

The paper is directed on the problems of financial crisis and its influence on the insurance market in Slovak Republic. Our core of study was to map the negative impacts of the global recession on the going insurance markets evolution. The report analyses risks which affect to conclude a contract of the new insurance. The insurance companies are threatened by a range of risks in carrying out its activities. The effective risk management ensures to the insurance companies will be able to anticipate and eliminate risks. Then the companies will prevent fluctuations in the economic results due to financial crisis, the economic recession and other events in the European and world economy.

*Ing. Jitka Meluchová, PhD., Katedra účtovníctva a audítorstva, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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### **Mergers of Public Limited Companies in Societas Europaea**

Societas Europaea represents a new type of capital company, through which it is possible to carry out business within the European Union countries. One way of establishing a Societas Europaea is a merger of public limited companies. The aim of article is to highlight the legal and accounting aspects of establishing a Societas Europaea by mergers of public limited companies.

*Ing. Lucia Ondrušová, PhD., Katedra účtovníctva a audítorstva, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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## **Accounting of Inventories: Used Merchandise**

Used merchandise is a special part of inventories, usually sold by specialized vendors. There are few possibilities how to account for used merchandise depending on method of acquisition. The aim of this paper is to provide basic guidance on different options for accounting of used merchandise.

*Ing. Branislav Parajka, PhD., Katedra účtovníctva a audítorstva, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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## **Depreciation of Property Plant and Equipment**

The aim of this article is provide overview of depreciation of property plant and equipment from accounting aspect as well as from aspect of income tax base. Specific of depreciation is presented on technical improvement, which brings sometimes in practice difficulties.

*Ing. Renáta Silná, PhD., Katedra účtovníctva a audítorstva, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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## **The Presentation "gifts" in the Statement of Cash Flows According to Slovak Accounting Legislation**

The information about the equity and the liabilities are presented on the side of equity and Statement of Cash Flows as a part of notes to the financial statement presents information about cash flows. This paper analysis the presentation of cash flows "gifts" in the Statement of Cash Flows according to Slovak accounting legislation.

*Ing. Miloš Sklenka, PhD., Ing. Vladimír Surový, PhD., Katedra účtovníctva a audítorstva, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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## **Selected Aspects of Taxation of Alcohol and Alcohol Beverages in Slovakia in the Harmonisation Trends Context**

Excise duties on alcohol differ widely between EU Member States. Harmonization measures have mostly been confined to product definitions and agreement on minimum tax rates. Excise duty collections from alcohol, per adult and per litre of pure alcohol, differ as widely between Member States as the duties. The aim of this article is to analyse the European Union framework of alcohol taxation, to show the variety of such taxation, its implications and to evaluate the proposals of Slovak tax legislation changes in the context of development in other EU countries.

*Ing. Ján Solík, PhD., Katedra účtovníctva a audítorstva, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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## **Cash Flows from Income Tax of Accounting Entity**

The tax is mandatory, legally stipulated payment which is paid by accounting entity in a specified amount and in a specified period to the state budget or another public authority or municipality. Accounting for individual taxes causes a variety of balance sheet accounting transactions and accounting transactions affecting profit/loss, ultimately there is always cash flow. Taxes cause usually cash payments to the accounting entity, but for some tax revenue may also occur. The paper analyzes concept of recognition cash flows from income taxes in the Cash flow Statement, which prepares a business accounting entity under the Slovak accounting legislation and comparing it with the reporting requirements under IAS 7 – Statement of Cash Flows.

*prof. Ing. Anna Šlosárová, PhD., Katedra účtovníctva a audítorstva, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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## **Harmonization of Assets and Liabilities Measured at Fair Value**

The aim of this paper is to give the reasons why the valuation value - fair value has been started to use in the financial bookkeeping for the measurement and reporting of assets and liabilities. We discuss the positive and negative aspects of this valuation; we describe a hierarchy of determining the fair value and single valuation techniques adopted in the IFRS 13 Fair Value Measurement

*Ing. Lenka Tkáčová, Katedra účtovníctva a audítorstva, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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**3. sekcia**

**3<sup>rd</sup> Section**

**Aplikácia štatistických a aktuárskych vied v  
sociálno-ekonomickej oblasti**

**Application of statistical and actuarial sciences in  
social-economic area**

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## **Domestic Demand of SR and its Short-period Forecast**

The aim of this paper is to create a macroeconomic model of domestic demand which is methodologically based upon the principles of error-correction models (ECM) and to forecast the development of domestic demand for the period from the third quarter 2011 up to second quarter 2012. As explanatory variables, gross domestic product per capita and average nominal monthly wage were selected. The time horizon of the data base covers the period from the 1st quarter 2000 up to 2nd quarter 2011. Source of data is Slovstat database of Statistical office of the Slovak republic. All regression equations of the model were estimated by the means of the ordinary least squares (OLS) method. All explanatory variables were statistically significant and the R-Squared statistic indicates that the fitted ECM model explains 93.42 % of the variability of domestic demand. The forecast shows slight increase of domestic demand in forecasted period.

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## **On the Demographic Future of Europe**

The article presents the key ideas from the European Parliament resolution of 21 February 2008 on the demographic future of Europe. It describes the conclusions of the previous resolutions on the Europe's demographic situation and future. At the same time, it also contains the challenge of demographic renewal and the challenges in the areas of human resources, solidarity pact between the generations and among the regions, and integration of immigrants.

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## **Nominal Premiums in the Health Security**

This paper deals with problems in the health system, created in recent years in Slovakia. We will also describe the steps to be taken to resolve them. Further we refer to the creation of a nominal premium as additional to the basic premium in health insurance. Nominal premiums would lead to the funding needed to cover health care costs. Policyholders would have to reinsure the diseases with high costs.

*Mgr. Petra Škrovánková, PhD., doc. RNDr. Lea Škrovánková, PhD., Katedra matematiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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**4. sekcia**

**4<sup>th</sup> Section**

**Aplikácia modelov a metód operačného výskumu  
a ekonometrie v ekonomickom rozhodovaní**

**Application of operation research and econometric  
models and methods in economic decision making**

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## **Approaches to Determination of Real Option Value**

Summary: Turbulent environment of the global economy puts on the investment decision making of a company, as a tool of the future growth opportunities, special claims. Decisions in this area have the direct impact not only on the future prosperity of a company and its creation of the development potential, but also on its possible increasing of its market value. On the other hand, they can also threaten its market position, future performance, stability and the company's existence itself. Presented article is focused on capital project valuation in practice. Its main point is to introduce methods of such a valuation and suggest their implementation in practice.

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## **Selected Labor Market Problems in the Field of Information and Communication Technologies in the Context of Econometric Analysis**

The paper deals with the classification of the data, the structure of the labor market information IT professionals. We define IT expert. We use the econometric panel data methods and we analyze the factors that determine the labor supply in the regions of Slovakia.

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## **The Multiple Salesman Problem with Time Windows**

Many variants of routing and scheduling problems are known in the logistic management. In this paper we formulate the model of the multiple traveling salesman problem with time windows (MTSPTW), which is an extension of standard traveling salesman problem (TSP), where more than one vehicle is allowed to be used in solution (the number of vehicles is given) and the visit of the nodes have to respect some time restrictions. The model is based on mixed integer programming and allows the use of standard optimization software (the formulation in GAMS will be presented).

*Ing. Zuzana Čičková, PhD., prom.mat. Katarína Čemická, CSc., Katedra operačného výskumu a ekonometrie, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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## **A Proposal of the Work Assignment System Using Operation Research Methods**

The author presents a system approach to an effective work organization and planning that is one of the basic production factors. Knowledge management, i.e. information management, which is systematically processed and properly performed, leads to an effective source management that has been recently limited and constantly rare. The paper describes

successfully implemented system for management of labor knowledge in ČSOB insurance, plc. The author presents this system applied in back office employees' work load monitoring. Thanks to this system the frontline management gained a tool for effective monitoring of employee enforcement.

*Ing. Josef Drahekoupil, Fakulta informatiky a managementu, Univerzita Hradec Králové*

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### **Return of the Product from one or More Previous Periodes**

There are many reasons for returning of the product to manufacturer. They can range from claims for replacement, repairs or upgrade to recycling or environmental disposal. Recycling is a new trend which is associated with depletion of natural resources and increase in prices of raw materials. It provides an opportunity to save costs related with purchase of new materials. Recycling is also associated with costs and therefore it is necessary for the manufacturer to plan and monitor the recycling process and also asses its effectiveness and motivate customers to recycle. These activities are associated with many problems, e.g. uncertainty of return and periodicity of return of products collected and returned. For this reason the company has to know the rate of return and the way of return of the products.

*Ing. Pavel Gežík, PhD., Katedra operačného výskumu a ekonometrie, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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### **Exchange Rates of the Significant World Currencies and ARCH Class Models**

This paper deals with the analysis of the exchange rates of the significant world currencies, i.e. EUR/USD, JPY/EUR and JPY/USD based on first logarithmic differences of the corresponding time series using the various ARCH class models (linear and non-linear) for modelling the volatility. The static forecasts for the next business day were also calculated.

*Ing. Michaela Chocholatá, PhD., Katedra operačného výskumu a ekonometrie, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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### **Theoretical Principles of Intranational Risk-sharing**

A risk-sharing arrangement for citizens is a fundamental feature of the modern economy. The various levels of economic efficiency and the big differences in the living standards in individual states in EU and also big disequilibrium in the region of the EMU evokes the discussion how to solve this problems.

Intranational economic stabilization is more and more influenced by intranational risk-sharing. Transfer of income from prospering regions to regions in distress can help attenuate asymmetries in the cyclical fluctuations of different regions belonging to the same country and produce a more even economic development across all regions. In some federal states the intranational risk-sharing is provided by fiscal mechanisms designed for the horizontal redistribution of income among subcentral governments. In the US, the intranational risk-sharing is the product of budgetary transfers from the central government to regional or local government.

In the presentation we will discuss some theoretical principles of the risk-sharing among consumers inhabiting different regions as a special case of consumption smoothing and intranational insurance through fiscal system.

*prof. Ing. Zlatica Ivaničová, PhD., Katedra operačného výskumu a ekonometrie, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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### **Estimation of Inflation in the Slovak Republic Environment by means of the New Keynesian Phillips Curve**

The contribution speaks about approach to inflation based on model which is called New Keynesian Phillips Curve. NKPC relates inflation to microeconomic model, where inflation is explained as a dependency on real marginal costs of firms and expectations of firms about future price development. The paper deals with description of the New Keynesian Phillips curve (NKPC) and its hybrid form as well. Closing the paper we can see two estimated models in conditions of Slovak Republic compared with the results of various articles. There is also an effort to assess price stickiness in Slovak Republic and compare it with foreign countries.

*Ing. Brian König PhD., Katedra operačného výskumu a ekonometrie, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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### **The Comparison of Reactions of the EMU Countries to Different Type of Shocks Using SVAR Models**

Reactions of the economies for demand and supply shocks shows the differences between economic level of countries and differences associated with the recovery after the crisis. Comparison of responses of EMU countries for demand shocks may help to understand how difficult decisions about a fiscal union currently facing European countries.

*Ing. Martin Lukáčik, PhD., Katedra operačného výskumu a ekonometrie, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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### **Location Problems**

The goal of this paper is to present and analyse possible application of optimization location models and transportation routes, which can be used in decision making process when service centres need to be situated. The work is divided into two chapters. First part focuses on the optimization models of transportation routes. The second chapter is based on analysis and solutions of location models.

*doc. Mgr. Juraj Pekár, PhD., Katedra operačného výskumu a ekonometrie, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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## **Stochastic Facility Location Models**

Production facilities, distribution centers and other facilities are generally operated for a long time period, the environment in which they operate is constantly changing. Information about future costs, demand, transmission distance and other model input data are very uncertain. On the other side, decisions about facility location are very expensive and difficult to change later. In this paper describes some approaches to solutions of random input model parameters.

*Ing. Marian Reiff, PhD., Katedra operačného výskumu a ekonometrie, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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## **Estimation of the Capital Depreciation Rate in the Slovak Economy**

Time series of the amortisation and capital accumulation can be gathered from the national accounts data. The parameters of the linear relationship between amortisation and capital accumulation express themselves information about capital depreciation and initial value of the stock of capital in the given time sample. In regard to non-stationarity of the variables, it is necessary to use actual econometric knowledge about time series co-integration.

*Ing. Karol Szomolányi, PhD., Katedra operačného výskumu a ekonometrie, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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## **Nonlinear model of the Formation and Expansion of Social Opinion**

The contribution is devoted to non-linear models of the pursuit and dissemination of public opinion.

*RNDr. Lubomír Turňa, CSc., Katedra aplikovanej informatiky, Fakulta hospodárskej informatiky Ekonomická univerzita v Bratislave*

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