

## Preface

### **Special issue of Acta Polytechnica Hungarica on Business Trends in the 21<sup>st</sup> Century**

This issue of Acta Polytechnica Hungarica contains papers that were invited from academics and researchers of the V4 countries. Acta Polytechnica Hungarica as an interdisciplinary journal, although mainly accepting papers from the fields of engineering, applied informatics and mathematics, has decided to widen its scope and offer a variety of business related articles since there are no organisations, factories or research centres without effective business solutions. What is more, the broader economic and social environment even influences trends in research and development, along with the exploitation of the possibilities created through them.

The first article of the issue proves this statement by exploring renewable energy, economic development in the European Union and their interconnectedness. The research presented in the paper analyses data from 28 EU countries to determine to what extent economic development stimulates the production of energy from renewable sources and whether countries characterized by large greenhouse emissions are catching up with "green" nations.

The second paper focuses on socio-demographic factors and their effect on business processes. Risk avoidance is a characteristic of certain countries and national cultures, the same as the propensity to trust each other and invest in riskier businesses. The paper analyses the connection of risk perception and management with business behaviour. Although the starting point is psycho-social, the data presented in the paper emphasise, that risk taking has strong relation with the business performance of SME.

In the third paper the efficiency of the banking sectors in European Union countries is analysed, since financial issues have significant effect on every actor of the economic sphere, be them large multinationals or local SMEs. The financial crisis has proved the worth of this statement the hard way. For this reason, the paper analyses the efficiency of different nations' banking sectors and the efficacy of the national and international regulators pointing out significant differences between states within and outside the Monetary Union.

While the first three papers prove the importance of exploring the wider social, regulatory and financial environment, the fourth paper attempts to analyse business cycles as phenomena, based on various composite indicators. Factors, such as employment in manufacturing, export of goods and services, the number of hours worked in industry and industrial turnover are proved to be significant indicators for the past years. However, production index in the construction industry, insufficient demand, unemployment in the age group of 25-74 and short-

term interest rate - underlining the relevance of the topics discussed in the previous papers – create new composite coincident indicator for the future.

The first four papers of the special issue endeavoured to highlight the importance of macroeconomic factors, whereas the papers in the second half of the issue concentrate of microeconomic and business topics.

Money makes the world go 'round. Its importance is indisputable both on macro and on micro level. Hence the fifth paper focuses on the maturity of budgeting systems and their influence on corporate performance. Since traditional budgeting mechanisms have frequently been criticised for their inherent inflexibility and the substantial time frames they demand, the paper attempts to provide an alternative to the old and rigid systems and approach businesses and processes from a modern, performance-based budgeting perspective.

Although in the most part of the 20<sup>th</sup> Century people were regarded as replaceable elements of businesses, with the shortage of skilled labour and the negative demographic tendencies the value of human resources has increased enormously. Big companies realised it relatively faster than SMEs that employees should be regarded as key assets. The sixth paper explores and presents Human Resource Management practices in Small and Medium Enterprises in the Visegrad Group to estimate how long way SMEs have ahead of them in this regard.

The seventh paper of the issue also tackles the topic of Human Resource Management, but from the point of view of atypical forms of employment. Although most countries have significant unemployment, even in the EU, there is usually unmet demand for workers on the same labour market. The reason for this structural unemployment is either the mismatch in skills and competencies, or in working conditions. The research presented in the paper concentrated on the unemployment in the Slovak-Hungarian border region and attempted to discover whether and if yes how atypical forms of employment can reduce unemployment.

When considering the importance of various business functions, marketing is often underestimated. However, without a thorough market research that discovers the potential consumers' demand and preferences, a business venture can hardly be profitable on the long run. The eight paper of the special issue explores interestingness measures in online shoppers' data. The research presented in the paper underlines the significance of information provided online to potential consumers and the way products are marketed. The work provides general insights into how shopper-vendor transactional data can be explored.

In the last paper of the issue a circular evaluation tool for sustainable event management is presented, approaching the topic of green energy addressed in the first paper from the micro level. The paper introduces a pilot project which focuses on solar energy usage through the implementation of circular energy-sharing solutions for a possible Olympic village. The study, besides elaborating on innovative business and technological solutions for developing solar energy,

which can be applied to circular principles, and lead to further social-economic-environmental benefits, also introduces a newly developed methodology which has been created to measure the circular efficiency of events.

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