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**November 2024**

# EUROPEAN CONFERENCE on Innovation Management

**„VALUE-ADDED:  
Prism of possibilities”**

**EC20** EUROPEAN  
**IM24** CONFERENCE  
ON  
INNOVATION  
MANAGEMENT

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# European Conference on Innovation Management „VALUE-ADDED: Prism of possibilities”

Corvinus University of Budapest  
21<sup>st</sup>–22<sup>nd</sup> November 2024

Conference Proceedings



# Introduction

Value creation is directly and indirectly connected to innovation. To thrive in a dynamic and ever-changing business landscape, organizations must embrace innovations by understanding the competitive dynamics of technology, learning the active management of the innovation process, improving creative problem-solving skills, and entering into collaboration. The aim of the conference is to create an opportunity for common and diverse thinking on innovation, to share professional knowledge on innovation, and to contribute to a more prosperous and competitive domestic entrepreneurial sector and a more developed and prosperous innovation ecosystem. The European Conference on Innovation Management (Project no. 149330) has been implemented with the support provided by the Ministry of Culture and Innovation of Hungary from the National Research, Development and Innovation Fund, financed under the MEC\_SZ funding scheme.

The conference featured 81 presentations from 26 universities and 24 corporate/institutional partners. The conference was held in English. This conference publication contains the abstracts of the presentations received, broken down by section.

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# Session 1. Education and Innovation

## **Social responsibility in the context of professional development**

*Fanni Luca Somosi, MSc Student, Corvinus University of Budapest*  
*Liza Almási, Ph.D. Student, Corvinus University of Budapest*

This paper examines the processes of integration of university students' professional knowledge into NGOs and its impact. The main question of the thesis is: what kind of social impact and innovation do collaborations within university courses bring to NGOs? The relevance of the thesis is given by the theoretical background, which examines the current collaboration and professional support opportunities available to NGOs and reveals the helping tendencies of Generation Z. Following the establishment of the theoretical framework, the paper presents the two-way, semi-structured interview-based methodology, which forms the basis for the analysis tools used to assess collaborations, such as the impact map framework, the collaboration impact model, and the UNICIV model. The UNICIV model illustrates the impact of university students on NGOs through their professional activities and outlines the optimal innovative collaboration process. The model presented in this paper describes the process and impact of collaboration between the two partners through a potential intermediary organisation. This type of collaboration can foster a more diverse perspective, more structured organisational operation and more efficient operational processes for NGOs. Finally, the authors assess the social impact and relevance of professional support available to students and describe the long-term potential of collaborations with NGOs.

**Keywords:** community engaged learning, social innovation, NGO, university collaborations

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## Coaching in higher education

*Károly Vizardák, Ph.D. Student, Corvinus University of Budapest*

In recent years, coaching and the coaching approach, once virtually unknown concepts in our country, have become increasingly prevalent. Originally derived from the world of sports, coaching has seamlessly integrated into various facets of our lives. This widespread adoption raises several intriguing questions: What is the history of coaching? How has it permeated different aspects of our existence? How has it evolved into an effective tool in higher education, and what qualities should an ideal coach possess? Why is coaching beneficial in universities, and how can its positive impacts be measured? What is the current state and future direction of the coaching approach in higher education? The primary objective of my doctoral thesis is to explore the potential of the coaching approach in higher education. Drawing parallels with its role in the business sector, I posit that coaching can address the educational challenges of the 21st century within higher education. In this context, coaching typically has two main objectives: (1) to enhance students' performance in academic tasks, and (2) to develop their critical thinking and skills. My research hypothesizes that the presence of a coaching mindset among teaching staff fosters the development of students' entrepreneurial competencies. To investigate this hypothesis, I employed a mixed-methods research methodology, comprising both qualitative and quantitative approaches. The qualitative phase involved a comprehensive literature review, examining the historical evolution of

coaching, its theoretical foundations, and its practical applications across various domains, particularly in higher education. This phase highlighted successful case studies and identified key elements that contribute to the effectiveness of coaching methodologies when adapted from sports to educational settings. The quantitative phase of my research involved a detailed questionnaire administered to both students and faculty members to gauge the impact of coaching techniques on academic performance and skill development. The initial results from the quantitative data indicate a positive correlation between the implementation of coaching strategies and improved student outcomes, particularly in terms of the development of entrepreneurial skills.

At the upcoming conference, I will present the findings of my research to date. The presentation will cover the core components of my study, including the literature review and the initial quantitative results. Based on my own experiences and the data collected, I will discuss the effectiveness of current coaching practices in higher education, highlighting successful patterns and identifying limitations. Moreover, I will provide recommendations for optimizing coaching methodologies to better serve the needs of students and educators. These recommendations will emphasize the importance of continuous adaptation and innovation in coaching strategies to meet evolving educational demands. Potential areas for future research will also be explored, aiming to expand the application of coaching approaches within academia. In conclusion, my doctoral research highlights coaching's transformative potential in higher education. By creating a supportive and interactive environment, coaching enhances student performance and skill development. These findings deepen our understanding of coaching's role in academia and pave the way for further research in this promising field.

**Keywords:** coaching, entrepreneurship, higher education, research

## **Examining knowledge management in higher education-industry collaborations - a systematic literature review**

Enikő Pergéné Szabó, Ph.D. Student, University of Debrecen  
László Erdey, Ph.D., Associate professor,  
University of Debrecen

Since the second half of the 20th century, the role of universities has increased, and science and research have become a decisive factor in economic policy. In knowledge-based economies, the competitiveness of companies and the practicality of higher education are largely determined by research and innovation collaborations between companies and universities, which play a fundamental role in the economic development of a country. The competitiveness of the economy depends heavily on knowledge and economic success depends on the application of knowledge, so knowledge sharing and knowledge management are increasingly being strengthened. Government agencies and universities themselves have made concerted efforts to increase academic engagement, for reasons ranging from generating societal legitimacy for publicly subsidised scientific research, stimulating economic activity to raising revenue for universities. A large body of literature examines the benefits, difficulties and obstacles to cooperation between universities and industry. The aim of this paper is to use a systematic literature review method to collect, organise and synthesise the knowledge transfer processes, current issues related to knowledge management and knowledge management models of university-industry collaboration, and to identify possible future research directions on the topic. In light of this, we conducted a systematic literature review of these studies centred around five key research questions: (a) identify trends in knowledge management in university-industry relations (b) in which areas does knowledge transfer



appear in university-industry relations?, (c) Can successes and failures of knowledge transfer be identified?, (d) evidence-based best practices identified and (e) areas of future work to be explored.

The research was based on the analysis of the results of the Scopus database keyword search on knowledge flows, knowledge management, knowledge sharing, knowledge exploitation and university-industry relations, university engagement with industry, and the selection of publications used in the study was based on the PRISMA research protocol. The study offers both a descriptive and thematic analysis through a review of peer-reviewed articles published between 2019 and 2024. The results highlight the main challenges in transferring knowledge between academia and industry and suggest actions for policymakers to address some of these challenges.

**Keywords:** university-industry linkage, cooperation, systematic literature review, knowledge transfer, knowledge sharing, university engagement with industry

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## Science Shop for Social Innovation

*Réka Matolay, Associate Professor,  
Corvinus University of Budapest  
Márta Frigyik, Manager, Corvinus Science Shop,  
Corvinus University of Budapest*

This proposal interprets science shop activities and approach in the framework of transformative social innovation. The conference abstract is rooted in our research about university community engagement (UCE) initiatives in four higher education institutions (HEIs) across Hungary, and

focuses on one of them, i.e. the science shop approach to community engaged research and learning (CERL). The objective of research was to explore the characteristics of current UCE initiatives through the lenses of practitioners in the context of social innovation. Document analysis and autoethnographic writing provided the first, qualitative and open steps of research. Authors are internal stakeholders of the university unit, similarly to further members of the research group who are internal stakeholders of their respective HEI units (see e.g. Málovics et al, 2024). This first inductive step produced outputs on local features, challenges and social impacts and was followed by common reflections across the research group with a deductive character based on the main forms of transformative social innovation (TSI). Documents analysed at the science shop were regular post-project student surveys with open questions about the impact of the course project on them and also the potential social impacts they foresee in the future; regular post-project community partner surveys with open questions to explore direct impacts of collaboration; regular post-project discussion with lecturers and the science shop manager serving as a closure to the course project and an exploration of the experiences and impacts on participants; and occasional interviews and focus group discussions with lecturers and case studies of community engaged course developments. TSI was understood as „a process by which social innovation challenges, alters or replaces the dominant institutions in a specific context” (Haxeltine et al, 2017: 11) The social innovation approach defined by the TRANSIT model was utilised capturing the new knowing, new framing, new organizing, and new doing elements of TSI. Science shop contribution to social innovation (SI) was identified at two layers:

- as embodying SI in relation to higher education, bringing new knowledge, framing, organizing and doing into the university; and
- as reinforcing various SIs of a diversity of community partners.

This conference presentation focuses on introducing transformative social innovation and how one type of UCE in HEI, namely the science shop contributes to it at these two levels. Illustrative cases of both layers are to be shared.

**Keywords:** community engagement, science shop, social impact, transformative social innovation

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## Gamification of Developing Presentation Delivery Skills

*László Kacsirek, Associate Professor,  
Corvinus University of Budapest*

Developing students' presentation skills is crucial for students both for their careers and their studies. A part of a presentation skills course focuses on the way students deliver their presentations. Developing delivery skills – focusing mainly on voice techniques, body language and the use of space – faces many challenges. Students should be advised about the rules and techniques of presentation delivery, they should acquire the skills, practice and receive feedback. That requires a lot of time that we do not have. Another major challenge is that students feel very shy when it comes to talking in front of people what is essential if one wants to develop delivery skills. A traditional way of developing the skills is to explain and demonstrate the relevant techniques, tell students to practice at home, then you do exercises with them a week later and give students feedback. This works to a certain point, but it has its limits – students remain shy, they are less motivated, and time is not enough to reach considerable development. This is where innovation comes in. The

first thing is to get rid of students being shy. In class, student groups of three or four they are invited to play a fairy tale in not more than three minutes. They forget that they are at university when they present their stories to their audience in class; they have fun, they use their bodies, voices and the space, and they can be called anything but shy. After all the acts we discuss what they were doing, what the techniques were that they were applying and how all that relates to their presentation skills development. Then students are asked to – out of class – watch videos about delivery techniques and practice them because in the next seminar they will be given exercises in which they should demonstrate a skill or technique. The framework of the exercises is a quiz game. There are five categories of exercises: voice, body, space, difficult, easy. Six teams of four students compete for a prize. They cast a dice with colours and receive an exercise which they perform. A group of senior students give feedback and rate the performance with points. After the quiz, students and tutor summarize the experience and draw conclusions. This way of teaching proved to be very effective – most students perform excellent delivery skills in their end-of-course presentations.

**Keywords:** gamification, innovation in education, learning experience, presentation skills

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## Futures studies for innovation

*Tamás Kristóf, Associate Professor,  
Corvinus University of Budapest*

The presentation emphasizes the significance of ‘futures studies’ as an academic discipline in promoting innovation. Futures studies and

innovation are interrelated fields that examine trends, opportunities, and problems while devising novel solutions for social, economic, and technological advancement. Innovation often begins with foresight, addressing domains that will transform or need novel solutions. Futures studies and innovation facilitate society to proactively shape the future for human advantage. Futures studies examines prospective trends, transformations, and opportunities to foster innovation via the reassessment of status quo, the development of novel solutions and technologies, together with their implementation. Futures studies encourages corporations, governments, and other organizations to anticipate and address impending challenges, thereby connecting the two domains. Futures studies might be regarded as innovator due to its many parallels with innovation. Innovation entails the introduction of novel concepts, products, services, or processes to facilitate advancement. Futures studies analyzes trends, circumstances, and transitions that individuals and organizations may use to inform decisionmaking. Innovation enables the realization of these visions. Futures methodologies promote innovation in several capacities. They assist in recognizing distinctive opportunities that are either absent or whose consequences are ambiguous. Futurists, like to innovators, pursue novel insights via the exploration of the unknown. Similar to innovation, futures studies necessitates imaginative thinking and exploratory inquiry. Both domains question the status quo and seek novel solutions. Anticipating future trends enables organizations to develop and adapt more swiftly. Innovation often entails overseeing transformation and influencing the future. Futures studies also assists companies in establishing goals and shaping the future. An experience-based approach to innovation is believed to lead to incremental advancements aligned with established development trends, while a foresight-driven search for innovation uncovers new, potentially distant opportunities, greatly increasing the likelihood of discovering radical innovations. Futures studies, foresight,

and innovation are interrelated, since innovation management use inter alia scenarios and roadmapping to enhance invention. Foresight influences innovation both directly and indirectly. Strategic foresight enhances innovation performance by improving innovation management methods and cultivating futures literacy.

**Keywords:** futures studies, foresight, futures literacy, innovation

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## The role of universities in Hungary's Innovation Ecosystem – Facing transformation and supporting innovation processes

*Eszter Németh, Assistant Research Fellow, University of Pannonia*  
*Beáta Fehérvölgyi, Associate Professor, University of Pannonia*

The multifaceted role of universities within the innovation ecosystem is a significant research area nowadays. Universities can contribute to knowledge production, transfer and utilisation, shaping the local economy and society. The paper explores the role of universities in the Hungarian innovation ecosystem, emphasizing their contribution to driving and supporting the flow of innovation. As key players in fostering research and development, universities hold pivotal position in the innovation ecosystem among the quadruple helix members. Therefore the paper seeks answers for what challenges and opportunities faced by institutions in fulfilling the transformative role through qualitative interviews with 9 Hungarian university leaders. The interviews were transcribed and analysed by Atlas.ti 8 software. The findings reveals the urgent need for cultural transformation, highlighting the importance of fostering innovation-driven atmosphere and mindset, as well as

enhancing collaboration with the industry. Nowadays, in the time, where innovation is becoming even more necessary as it was ever before, cultural shift is a critical factor, that can strengthen the flow of innovation and ensure a long-term success of Hungary's innovation ecosystem.

**Keywords:** innovation, ecosystem, universities, culture

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# Session 2. Sustainability, Energy, and Innovation

## **Flexibility developments of the Hungarian Gas Storage Ltd.**

*Ákos Kriston, CEO, Hungarian Gas Storage Ltd.*

Gas storage is a vital component of the gas value chain as it is the main flexibility tool to balance gas demand and supply, optimize the transmission network size and guarantee security of supply. In recent years, the standard operations on the gas market became more and more demanding in terms of flexibility due to the geopolitical events, volatile market trends, diversing supply routes and shifting consumer behaviour. Hungarian Gas Storage's main missions are to provide flexibility to its clients while securing gas supplies, as clients can benefit from the capability to store natural gas physically underground until is needed in response to market demand. With the development of renewable energy sources, peak gas demand and volatility in gas demand have already started to increase according to intermittent renewable patterns as flexible gas-powered power plants are balancing these variations in electricity generation. To offer optimal solutions to all these various needs, HGS continuously develops its services, which are containing decarbonisation projects as well, such as compressor upgrades, renewable hydrogen generation, demand side response potential and large scale hydrogen storage.



**Keywords:** natural gas storage, flexibility, arbitrage, security of supply, decarbonisation, sector coupling

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## Electricity security: Security dilemmas considering green transition in the Visegrád countries

*Nikolett Deutsch, Associate Professor,  
Corvinus University of Budapest*

*László Berényi, Associate Professor, University of Miskolc*

The power sector is one of the prime interrelated subsectors of the energy industry, serving a social function with the utmost importance to society. By accepting the Green Deal framework, the EU committed to an ambitious climate strategy to achieve the greenhouse gas emission reduction objective of at least 55 % by 2030, therefore, the acceleration of the green transition is one of the most important goals of the European Union. This paper examines the impact of energy transition plans on the long-term electricity security levels of the Visegrád Countries (V4). The analysis includes the calculation of Simplified Supply-Demand Index (SSDI) scores based on the official forecast of 2023 and 2024 prepared by the European Network of Transmission System Operators for Electricity (ENTSO-E). The SSDI models were performed for the National trends (NT) scenario, which is in line with national energy and climate policies derived from the EU targets, and two deviation scenarios: the Global Ambition (GA) scenario emphasizing the global economy with centralized low carbon and RES options, and the Distributed Energy (DE) scenario assuming higher European autonomy with a renewable and decentralized focus. Calculations were made by use of Microsoft

Excel and Visual Basic Programming tools. Results indicate that the level of electricity security is expected to diminish in the V4 countries. Simulation-based sensitivity analyses were also conducted to highlight that SSDI scores are especially sensitive to the vulnerability of supply, infrastructure, and demand categories within the composite index.

**Keywords:** electricity security, energy security, just transition, energy trilemma, V4

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## Noise as a potential energy source

*Szilvia Kovács, University Assistant, University of Dunaújváros*

Based on the literature review, the focus is on a turn, according to which the noise effect can even be used as an environmental resource. Sound energy is created by sound waves, i.e. vibrations, as they propagate through a specific medium. So far, sound energy has not typically been used to generate electricity, because the energy we can get from sound waves is quite small. However, the sustainability issues now dictate other needs, the design and examination of energy collection systems from noise has now been put on the focus map of researchers. Developed countries (e.g. China), where the urban environment including dense transport infrastructure (e.g. energy-harvesting noise barriers along high-speed railways), and developing countries (e.g. Bangladesh, Philippines), where the development of the rural electricity network is low – both are actively looking for alternative (even micro-power) energy collection and storage solutions and payback points. Acoustic Energy Harvesting and Storage/ Sound Energy Harvesting and Converting Electricity is a research area that seeks to further investigate this concept and implement it in other

useful applications. So, the research questions are:

- what technological solutions and experiments are currently available in relation to acoustic energy collection and storage?
- what are the social and economic prerequisites for the introduction of acoustic energy collection and storage?

**Keywords:** noise, acoustic energy, conversion, electricity

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## Reducing international water stress with sustainable European water policy

*Réka Szolga, Ph.D. Student, Ludovika University of Public Service*

'Transboundary' or 'international' waters are water basins, that – as the United Nations defined – lie on the territory of more than one country. There are 263 transboundary rivers in the world, flowing through 80% of countries. Several transboundary river basins are shared along two or more different riparian states: Nile is shared among 11, Jordan 5, Tigris 4, Euphrates 3 states, being the most water-conflicting territories in the world. Transboundary water conflicts mostly occur in those countries where transboundary water management is needed. International water conflicts can not always be explained by a nation's hydrological characteristics and climate change impacts. Conflicting situations are most likely linked to geopolitical characteristics, political instability, and lack of institutions. Transnationally shared water resources can be tools of conflict or cooperation. The occurrence of some new notions like water security, water stress, water scarcity, and water risk underlines the fact that water conflict terminology is needed to describe water-related issues in the world. Water security is the capacity of the population to

safeguard sustainable access to adequate quantities of acceptable quality of water for sustaining livelihoods, human well-being, socio-economic development, ensuring protection against water pollution, water-related disasters in the eco-systems, ensuring protection of the climate, and peace and political stability. Which states can provide guidance with applicable water regulations to sustain international water security? The European water governance system is the biggest and most effective in the world. The International Commission for the Protection of the Danube River Basin (ICPDR) is a European organization of the riparian countries. My home country, Hungary, is an important member of the Danube Basin, which extends into the territories of 19 countries, and is considered the most international and successfully operating river basin in the world. The European practice with the EU Water Framework Directive and the ICPDR would give a followable example of international water management and cooperation. The paper maps the hydropolitical resilience and vulnerability of the river basins involved and with the overall picture of the best (ICPDR) and the worst (MENA region) example of water management, it involves policy recommendations for reducing Middle Eastern water stress. The hydropolitical resilience and vulnerability of the basins will be treated in relation to the political systems and their institutional resilience, infrastructural background as categories of hydropolitical risks, because besides hydrological characteristics, both internal and foreign policy influence hydropolitical dynamics.

**Keywords:** transboundary waters, water policy, water security

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## **Assessing the Ecosystem Supporting the Transition to a Circular Economy in Hungary, Based on a Competence Map and Expert Interviews, with international perspective**

*Nóra Mezőfi, Ph.D. Student, University of Pannonia*

*Kornél Németh, Associate Professor, University of Pannonia*

*Erzsébet Péter, Associate Professor, University of Pannonia*

The practical implementation of the circular economy transition primarily takes place at the company level, where sustainable principles need to take root in design, manufacturing, and distribution models. The systemic transition involves the parallel and mutually reinforcing evolution of many actors, all moving towards circular principles. The primary drivers of economic model transitions are market incentives and pressures, as well as the presence of a robust supporting infrastructure. The first two factors can be objectively identified by reviewing environmental taxes, subsidies, and preferential loans. However, evaluating the supporting infrastructure is a more complex issue. It is necessary to assess the nature of supporting activities, their forms of appearance, the theoretical foundations of these activities, and their practical effectiveness all within the macroeconomic context of a given national economy. Furthermore, it is essential to establish a solid evaluation framework, starting from theoretical, particularly implementation-oriented theoretical foundations. This study presents the results of a comprehensive mapping of the supporting infrastructure in Hungary. The research was based on available public sources and expert interviews. These were supplemented by a review and analytical evaluation of OECD country reports on the circular economy concerning Hungary and some neighboring countries, addressing the topic under

investigation. Our initial assumption that Hungary has an active support network, which is essential for the transition, is clearly validated by the research. However, we observed numerous isolated good practices and organizations, suggesting that the synergies within the support network still hold significant development potential.

**Keywords:** circular economy, support infrastructure, social and economic innovation

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## The applicability of circular business models and the concession system in Hungary's waste sector

*Péter Bera, Ph.D. Student, Corvinus University of Budapest*

*Dániel Kostyal, Ph.D. Student, Corvinus University of Budapest*

*Bence Pistruí, Assistant Professor, Corvinus University of Budapest*

The circular economy concept has gained momentum in Hungary, with waste management and recycling targets set. However, adoption of circular business models is scarce, which could help companies transition. This paper examines the role of the circular economy in Hungary's waste sector and the current business models of waste management businesses. The research conducted six semi-structured interviews with various waste sector actors. The findings show that waste management companies' business models don't significantly differ, with some adopting a circular economy business model centered around reusability. The key difference lies in technology and agility in serving customers. The concessionaire's role is seen as a change that standardizes waste

processing and communicates circularity to consumers. However, potential negative impacts include a drop in innovation and technological developments.

**Keywords:** circular economy, waste management, sustainability, concession system

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## Roma informal entrepreneurs and municipal waste management in Hungary: a pilot project to estimate the extent of informally retrieved bulky

*Timothy Gittins, Professor of Practice,  
Corvinus University of Budapest  
László Letenyei, Associate Professor,  
Corvinus University of Budapest*

Roma involvement in informal waste collection in the CEE (Central and Eastern Europe) region has barely been researched with collectors themselves as research subjects. This abstract focuses on collection of bulky municipal waste by Roma informal collectors. A pilot project was implemented in Budapest in 2023 with the aim of assessing the extent of informally retrieved bulky municipal waste otherwise destined for disposal by municipal authorities. This involved the use of smartphones to estimate informal waste accumulation and monitor selection of waste categories and quantities transported for further use. A survey was then applied to a sample area subject to annual bulky waste collection. For this purpose use of smartphones was deployed to avoid direct intrusion into activities of informal waste collectors. While methodology is subject

to major refinement, the key result lies in indication of a moderate extent of informally collected waste inferring an overall reduction of waste destined for landfill disposal or incineration. Moreover, a major extent of informally collected metallic waste for further resale was noted. Policy implications also exist in relation to transformation of the domestic waste management sector in line with circular economy principles and in integrating operative roles of informal and official waste collectors. Principally amongst these is a reduced onus on penalisation of informal waste collection. Recognition of circular economy focused public services serendipitously performed by informal collectors may thus be merited despite negative environmental effects arising from their activities. With reference to the aim of assessing the extent of informally collected waste, the smartphone based methodology deployed, while experimental and somewhat rudimentary, offers pointers for calibration of waste material. Principally, the moderate extent of estimated bulky waste removed by informal collection, reduces the overall quantity otherwise destined for incineration or landfill disposal. The first research objective of estimating volumes of waste placed in kerbside piles resulted in the overall conclusion that systematic waste sorting is an efficient means of extracting valuable re-useable material. This has policy implications in that integration of informal sorting practices and entails official acknowledgement of illicit trade in bulky sorted waste. The second objective of estimating the extent of waste transported by collection vehicles resulted in the prime conclusion that informal collectors tend to utilise vehicles to fully laden capacity levels primarily for efficiency reasons. Further studies would require greater focus on subsequent stages of a transactional supply chain identified from previous ethnographical research. However, this study has greater value in evaluating informal waste collection at a local level though identification of patterns of movement of waste material in relation to integrating informal collection activities with official waste collection practices.



**Keywords:** informal waste collection, circular economy, municipal waste collection, smartphone research



# Session 3. Start-up management, Ventures, and Ecosystem

## ENTplanner – platform development project for Ideation and Start-up team formation

*Attila Petheő, Associate Professor,  
Corvinus University of Budapest*

There is an urgent need from individuals with entrepreneurial orientation, that they want help in starting their business. Only a little percent of intended entrepreneurial tems has access to accelerator or business angels. According to GEM research findings (Csákné Filep, Szennay, Timár 2024) only 29,3% of active entrepreneurs had studies in entrepreneurship. Out of those who had course on entrepreneurship 52% has taken non degree courses, 25,4% has taken university course, and 20,3% has taken high school courses. So there are plenty of entrepreneurs who did not have any formal education before entering the market. Our project aims to develop a platform for those who are willing to start a business but do not have access for formal education. First step we did interviews with focus groups of potential users. Unexpected result, majority of user are willing to use this platforms on phones. So it is one the great challenges how to visualize canvases and tables and calculations on phone without ppt slides or xls sheets. Focus group interviews also highlighted us, that we need to support group works. Those tools which are support only

individual users are not enough anymore. Also users are demanding user experiences (UX) and fresh design, which is also challenging as we develop a nonprofit free of charge tool. We are investigating current AI supported tools Liveplan, Bizplan, Enloop, IdeaBuddy and also DEtoolbox from MIT. We want to learn from them and certain fields we want to develop be better solution. We would like to share lessons learned from this project with a wide range of audience in order to receive feedback.

**Keywords:** entrepreneurship, ideation, start-up team formation, development platform

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## Danube Cup – Bridging East and West-Europe in Entrepreneurship (case study)

*Loretta Huszák, Assistant Professor,  
Corvinus University of Budapest*

Compared to the United States, the issue of entrepreneurship has reached Europe with a considerable delay. When the first Chair of Entrepreneurship was set up in Germany in 1998 at the Oestrich-Winkel Business School (today: EBS University), there were already around 50 such departments in the US (Schmude et al, 2009). Since then, academic entrepreneurship research in Western Europe has reached a critical mass that legitimises the establishment of a special discussion forum focusing on bridging the gap between entrepreneurship on the eastern and western sides of the Danube. Danube Cup feels it has a responsibility to contribute to this process at a point where practice meets science in the academic sense, and East meets West. The Danube Cup Research Pillar was launched in 2022, with the main mission of

supporting the dissemination of best practices and quality research in the field of entrepreneurship education in the Danube region. The research pillar of the Danube Cup aims to showcase good practices that can be applied in other countries in the field of entrepreneurship education and to raise awareness of the achievements of entrepreneurship education, mainly by disseminating academic research results. The prior research supports this notion and highlights that entrepreneurship education should indeed be part of a regional economic development plan (e.g., Laukkanen, 2000; Rasmussen and Sorheim, 2006). The vision of the Danube Cup organization is to build the leading network of higher education institutions fostering entrepreneurship for a connected and sustainable Danube region. In our case study, we show what we have achieved so far and the network's plans to actually connect Western and Eastern academia in the entrepreneurship field as a European initiative. To achieve this goal, we have identified and analysed the leading conferences and research networks in the entrepreneurship field in Europe. The accompanying structures, the scope, the thematic focus of the research presented at the conferences and the latest trends are analysed. The characteristic features are a high degree of selectivity and quality (acceptance rate, limited number of presentations, etc.), an increasing number of original and new research papers, and the European dimension (the number of countries represented). Nevertheless, we were able to identify an East-West divide. At the end of the research, we were able to formulate strategic proposals for the Danube Cup network.

**Keywords:** entrepreneurship, entrepreneurship research, internationalisation

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## Management aspects of geographically limited platform ventures

*László Kállay, Associate Professor,  
Corvinus University of Budapest*

Some of the most successful former start-up giga enterprises Like Meta (Facebook) are networks, or platform ventures. Clearly, network start-ups bear the promise of fast growth, but is this a general rule? Some of the networks however have natural limits of expansion. The most important reason of this is when the network is geographically limited. Food ordering and delivery, taxi services, car sharing, utilizing leftovers of restaurants and grocery shops are the most typical examples. The research analyses some cases of geographically limited Hungarian start-ups and draws conclusions on growth management, competition and international expansion.

**Keywords:** platform ventures, growth management, competition, international expansion

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## Hybrid Venture-Capital as a Policy Tool

*Milos Milicsevics, Assistant Professor,  
Corvinus University of Budapest  
Judit Karsai, Scientific Advisor, KRTK Institute of Economics*

This article examines the long-run performance of Hungary-based venture capital-backed firms receiving funds through the public venture capital intervention of the European Union, the JEREMIE program. By

limiting its scope to the sample of Hungary-based firms backed by a mix of private and public venture capital deployed under the JEREMIE scheme – the so-called hybrid venture capital – this article analyzes the long-run performance of venture capital-backed firms across several different phases of the program in terms of its design, in order to answer an important question about the most effective design of government-backed venture capital programs. As the design of JEREMIE program has evolved in several distinct phases since the program's inception, a comparison of performance of venture capital-backed firms across various performance variables allows us to assess and recommend how hybrid venture capital programs should be designed in the future. This article contributes to the controversial debate about the government's role in capital markets, outlining an approach to designing effective direct investment schemes of supporting private capital market players through co-investment and joint fund programs.

**Keywords:** venture capital, public policy, capital market

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## Exploring the impact of Digitalization and International Business Strategy: A Comparative Analysis of Traditional and Born-digital Firms

*Qondeni Brenda Nxumalo, Ph.D. Student,  
Corvinus University of Budapest*

In today's rapidly evolving business landscape, digitalization has become a crucial driver of internationalization. The study examines the impact of digitization on the internationalization strategies of traditional firms and born-digital firms. As digital technologies reshape the global business

landscape, firms face new institutional norms and dynamic capabilities, which influence their strategic responses. The study analyses important distinctions between traditional and born-digital firms to define significant differences in their internationalization strategies, the impact of research and development (R&D) on innovation, and the digital tools that facilitate market entry and expansion. This study aims to explore how businesses adapt to the benefits and challenges of digitalization by using a dual theoretical framework that incorporates both institutional and dynamic capabilities theories. It employs quantitative analyses of financial data and performance metrics to provide an in-depth examination and comparison. The findings aim to provide managers and policymakers with valuable information that will guide international business strategy in the digital era.

**Keywords:** digitalization, international business strategy, born-digital, traditional firms

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## Future entrepreneurs and innovation

*Krisztofer Szabó, Assistant Lecturer,  
Corvinus University of Budapest*

Entrepreneurial activity constitutes a multifaceted process comprising various stages, one of which encompasses the evolution of the entrepreneurship process and start-up management. In recent years, researchers have placed considerable emphasis on the intentions and motivations underlying the initiation of businesses, as well as the factors that influence this process from ideation to the establishment of a start-up. An innovative idea holds little value if it remains unactualized in some-

one's mind. The process of transforming an idea into a start-up is highly volatile, analogous to a balloon in the wind that may drift in any conceivable direction. Sometimes, the idea may be discarded; at others, it may generate something extraordinary. The intricacies involved in accurately defining the topic present several challenges, as the delineation of the beginning and end of the start-up process is not always clear. Previous research and articles have indicated that the study of the entrepreneurial process and start-up management is continually evolving, necessitating new approaches to better comprehend the relationship between future entrepreneurs and innovation. The primary objective of this research is not to conduct a general investigation into students' entrepreneurial motivations but to specifically analyze students' entrepreneurial mindset before and after undertaking specific entrepreneurship courses. Drawing from previous research findings, both national and international, undergraduate students with an interest in the entrepreneurial process and innovation were surveyed. The entrepreneurial intention of students engaged in specific entrepreneurship and innovation courses has been investigated. The main research question and area are as follows: How does the entrepreneurial mindset change as a consequence of specific entrepreneurship and innovation courses? Considering the trends identified in international research, quantitative methods were employed, utilising a questionnaire survey, whereby different statistical relationships were analysed. This targeted research enables an in-depth statistical relationship analysis among students, with a particular focus on understanding how the entrepreneurial mindset shifts by the conclusion of specific entrepreneurship and innovation courses. The primary outcome of the data analysis aims to leverage the systematic interplay between theoretical frameworks and the resulting data to identify and define variables amenable to quantitative measurement on larger samples in the future. A significant limitation of this research is that the authors have thus far only obtained data from a limited number of students



through the questionnaire. Findings, problems, recommendations, and future research directions will also be presented.

**Keywords:** entrepreneur, ideation, innovation, start-up

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## Private Equity and Innovation: A Systematic Literature Review

*Ádám Németh, Ph.D. Student, Corvinus University of Budapest*  
*Endre Mihály Molnár, Assistant Professor,*  
*Corvinus University of Budapest*

During our research we carry out a systematic literature review examined the relationship between private equity (PE) investments and innovation, revealing significant patterns in how PE influences innovative activities across different sectors. By analyzing over 1,000 articles, and narrowing the focus to 29 high-quality Q1 papers, the study provides robust evidence that PE investments generally have a positive impact on innovation, particularly through increasing patenting rates and R&D investments. The findings indicate that PE-backed firms are more likely to engage in innovation activities, such as patent filings and the commercialization of new technologies. This effect is particularly evident in North American and European markets, where established regulatory frameworks and financial systems support PE-driven innovation. The strategic management and guidance that often accompany PE investments are crucial in driving these outcomes, as they help firms optimize their innovation processes and better leverage available resources. However, the relationship between PE and innovation is not uniform across all contexts. The review highlights that the impact of

PE on innovation varies depending on factors such as the type of PE transaction, the industry, and the regional context. For example, while leveraged buyouts (LBOs) generally lead to an increase in patenting activity, certain cases – particularly in public-to-private transactions – show that PE investments can sometimes hinder innovation. This suggests that the financial pressures associated with PE ownership may, in some instances, conflict with the long-term goals of innovation, a finding that deserves further exploration. The geographical analysis also shows that the impact of PE on innovation is influenced by local economic conditions and regulatory environments. In Europe, for instance, the effect of PE on innovation varies across different countries, reflecting the diversity of economic landscapes within the region. In contrast, in China, PE investments have been shown to significantly enhance innovation outputs, particularly among small and medium-sized enterprises (SMEs). In addition to these substantive findings, the review also provides insights into the methodologies employed in the literature. The majority of the studies in the final sample used econometric analysis, reflecting a strong preference for quantitative approaches in this research field. This emphasis on econometric methods suggests that future research could benefit from a more diverse methodological approach, including qualitative analyses and mixed-methods research, to capture the full complexity of the relationship between PE and innovation. In conclusion, the evidence supports the view that PE investments play a significant role in promoting innovation, although this relationship is influenced by various factors including the type of transaction, industry, and regional context. Future research should continue to explore these factors, with particular attention to the long-term effects of PE on innovation and the varying impacts across different sectors and regions. Policymakers should also consider these findings when designing regulations that take into account the benefits of PE-driven innovation and the potential risks associated with short-term financial pressures. This comprehensive

understanding of the PE-innovation relationship is crucial for both academic researchers and industry practitioners seeking to foster sustainable innovation and economic growth.

**Keywords:** private equity, innovation, literature review



# Session 4. Strategy and Innovation

## Social and Economic Value Creation by Hungarian Healthtech Innovations

*Márta Aranyossy, Associate Professor,  
Corvinus University of Budapest*

*Péter Halmosi, Associate professor, University of Szeged*

The study investigates the social economic value creation potential of Hungarian healthtech innovations, specifically in the context of Healthcare 4.0 technologies. Hungarian startups are active players in leveraging digital health solutions such as artificial intelligence, big data, and Internet of Things (IoT) to improve healthcare efficiency, patient care, and outcomes. Through qualitative analysis of interviews with 21 healthtech innovators, the research highlights the hybrid nature of value creation in the healthcare sector, where public and private stakeholders benefit from improved service levels, reduced administrative burdens, and personalized medical treatments. Patients, healthcare providers, insurers, and pharmaceutical companies are identified as key beneficiaries of these innovations. The research results emphasize that these technologies not only enhance service quality and access but also promote foundational societal values such as transparency, safety, and trustworthiness. Moreover, they play a crucial role in expanding healthcare availability, improving diagnostic accuracy, and reducing healthcare disparities. This research underlines the potential of healthcare technology to address pressing healthcare challenges and support equitable, efficient, and patient-centered systems.

**Keywords:** healthtech, Healthcare 4.0, value creation, social value

## Scrumming for Success: Integrating Agile Practices into Strategic Planning

*Katarina Milosavljević, Ph.D. Student, University of Belgrade*

*Marko Mihić, Full Professor, University of Belgrade*

*Katarina Antić, Ph.D. Student, University of Belgrade*

By bridging the gap between agile methodologies and strategic planning, this study offers a transformative pathway for organisations poised to thrive in dynamic market landscapes. It underscores the imperative of embracing agile principles beyond software development, heralding a new era of strategic agility and innovation. The central objective is to determine whether the Scrum framework positively influences strategic planning efficiency in start-ups. The methodology integrates a literature review, empirical survey data, and a Serbian start-up case study. Current literature underscores a concerning trend: approximately 90% of global start-ups fail in the long term. This alarming statistic underscores the need for innovative management practices. Moreover, the survey findings reveal that 75% of 164 respondents perceive the relevance of agile frameworks beyond their traditional domain, with 27.4% agreeing and 47.6% strongly agreeing. Building on this foundation, the case study draws on data from multiple workshops held in 2022, augmented with reports data from the company's financial system. These workshops examined the company's vision, mission, structure, systems, strategies, and tactics. Since its inception, Scrum has been the company's project management framework. The study aimed to demonstrate how this framework could be scaled to address broader strategic objectives. In the existing scenario, total strategic planning maintenance costs, including wages and material expenses, were 12,748.98 monetary units (m.u.) with 38 hours of effort per year. Employees (13 in this case) spent up to seven hours per session, affecting their regular duties during 14

working days. In the first proposed scenario, the daily meeting shifts to a weekly cadence, lasting 15 minutes, with monthly planning and retrospective sessions lasting one hour each. This small adjustment significantly reduces annual costs by 49.56% to 6,318.58 m.u., requiring only 24 hours per year (based on 13 employees' wages and material expenses in both proposed scenarios). The minimal weekly investment of 15 minutes enhances strategic planning without disrupting core activities. The second scenario extends the weekly meeting to 30 minutes to accommodate complex topics or larger groups, reflecting Scrum's adaptability. This scenario incurs annual costs of 9,477.86 m.u. with 36 hours of effort per year while maintaining the same duration for planning and retrospectives. These examples demonstrate how minor adjustments in agile practices could improve time and cost efficiency, showcasing Scrum's scalability beyond traditional uses. Despite its promising findings, the study recognises certain limitations. Data were collected from students and young professionals, focusing on their perspectives. Future research should include project managers (and other relevant roles) across all levels, from junior to senior, and different start-ups. Moving forward, subsequent research steps would also involve applying derived scenarios, comparing projected and realised models, devising new methodologies, and proposing frameworks tailored to start-up ventures in the market.

**Keywords:** agile methodologies, innovation, scrum, strategic agility

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## **Business model innovation through the adoption of Smart Airport Systems – the case of Budapest Airport**

*Attila Miklós Kozma, Associate Professor,  
Corvinus University of Budapest*

*Izabella Jahn, Student, Corvinus University of Budapest*

The aviation sector is undergoing a significant transformation, driven by advancements in digital technology that are reshaping airport infrastructure, business models, and the overall passenger experience. Technologies like Artificial Intelligence (AI) and the Internet of Things (IoT) are central to this shift, contributing to the emergence of 'smart airports' that seek to enhance operational efficiency, security, and service delivery. This study investigates the adoption of smart airport systems at Budapest Airport, focusing on passengers' perceptions and acceptance of these innovations. Leveraging the Unified Theory of Acceptance and Use of Technology (UTAUT) framework developed by Venkatesh (2003), we explore how constructs such as performance expectancy, effort expectancy, social influence, facilitating conditions, privacy trust, and willingness to pay influence passengers' behavioural intentions towards smart technology adoption. The primary objective of this research is to understand the factors that drive passenger acceptance of smart airport systems and to identify actionable insights that can guide the effective implementation of digital solutions at Budapest Airport, leading potential business model innovation. To achieve this, the study utilises a mixed-methods approach that combines quantitative and qualitative research. The quantitative component consists of an UTAUT-based online survey, distributed at airport bus stations and through Budapest Airport's monthly newsletter, which reached a wide range of passengers. A total of 144 responses were collected, with demographic representation in terms

of gender and experience, though skewed towards younger individuals in their 20s, aligning with the UTAUT model's recommendations for moderator variables (Venkatesh, 2003). The survey responses were measured using a 7-point Likert scale, assessing the constructs in question with participants' agreement levels ranging from 'completely disagree' (1) to 'completely agree' (7). The regression analysis yielded significant findings, revealing that performance expectancy, social influence, and privacy trust positively impact passengers' behavioural intention to adopt smart airport systems. This aligns with studies such as Benson, Saridakis, and Tennakoon (2015) and Ha and Stoel (2009), underscoring the critical role of privacy trust in facilitating technology adoption. Interestingly, facilitating conditions and effort expectancy did not significantly influence behavioural intention, suggesting that the specific context of smart airports may involve unique factors that impact user perceptions differently. Additionally, demographic moderators like gender, age, and experience did not exhibit significant effects, which contrasts with earlier findings by Venkatesh et al. (2003) and aligns with more recent studies by Kiyeng and Kessio (2015) and Salim (2012), indicating a potential generational shift in technology acceptance patterns among younger populations. These findings highlight significant implications for airport authorities and policymakers, emphasising the need to build trust in privacy and communicate the tangible benefits of smart technologies to enhance user acceptance. Prioritising privacy assurances and transparent data handling, along with demonstrating smart technologies' value, can foster a seamless passenger experience. However, the study's insights are limited by a sample skewed toward younger participants, which may not represent broader demographics, and by potential response bias from convenience sampling. Overall, this research informs strategies for effective smart airport implementation and future studies on passenger behaviour, with a particular focus on driving business model innovation.



**Keywords:** business model innovation, smart airport systems, technology adoption, UTAUT, passenger behaviour

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## Dynamic Capabilities and Ambidexterity: Driving Innovation in Regulated Environments

*Éva Mariann Kiss, Assistant Professor,  
Corvinus University of Budapest*

This study investigates the role of dynamic capabilities and organizational ambidexterity in fostering innovation and competitive advantage within regulated industries, specifically focusing on the retail banking sector amid digital transformation. In highly regulated environments, banks face the complex challenge of balancing compliance with the imperative for innovation, a dynamic often overlooked in existing literature. The research objective is to explore how banks can strategically leverage dynamic capabilities—sensing, seizing, and reconfiguring—to enhance innovation capacity while managing regulatory pressures. The study employs a mixed-methods approach, integrating qualitative insights from 14 semi-structured interviews with senior leaders at Institution Omicron, one of Ireland's largest retail banks, with secondary data from financial reports and industry documents to enrich contextual understanding. Findings reveal that while dynamic capabilities are essential, they alone do not ensure strategic agility in regulated contexts; organizational ambidexterity serves as a complementary mechanism that enables banks to balance compliance (exploitation) and market-driven innovation (exploration). The study introduces a conceptual model illustrating the iterative relationship between regulatory pressures and dynamic capabilities, highlighting how ambidexterity enables firms to adapt

compliance practices dynamically. Key barriers such as risk-aversion and rigid hierarchical structures are identified, limiting flexibility and responsiveness, while digital transformation tools like APIs are noted as critical enablers of customer engagement and operational adaptability. Recommendations include targeted leadership training to balance compliance with innovation, fostering cross-functional collaboration to reduce silos, and enhancing data capabilities to support customer-centric innovation. Limitations of this study include its single-case focus within the Irish banking context, which may limit generalizability, yet it offers valuable insights into the dual pressures of regulatory compliance and innovation. This research fills a critical gap in the literature, linking dynamic capabilities, ambidexterity, and digital transformation in regulated environments.

**Keywords:** dynamic capabilities, organisational ambidexterity, regulated industries, digital transformation

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## Challenges of Public Administration Digitalization: Digitalization of Local Services in the Central and Eastern European Countries

*Csaba Borboly*, Ph.D. Student,  
Ludovika University of Public Service

The objective of the upcoming study is to review the central role of digitalization in the transformation of public administration. Among the issues raised in the regional context are the widespread implementation of internal systems and services digitalization, as well as the importance of preparing the population in terms of digital competencies. It is

essential to address how these factors influence administrative processes and the spread of online platform usage, and to what extent the availability of various electronic forms and templates, as well as the integration of registries and databases, can accelerate and simplify administration, thereby facilitating public access to and participation in administrative processes. The core focus of the study is the analysis of the differences between the digitalization processes of local public administration services in Central and Eastern European countries and the various approaches adopted in these countries, aiming to develop a more effective digitalization strategy and a more inclusive public administration.

**Keywords:** digitalization, public administration, Central and Eastern European countries

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## Organizational Learning from Failures in Knowledge-Intensive Startups – a Qualitative Study in Agile IT Development

*Diána Dóra Beke, Ph.D. Student, Corvinus University of Budapest*

In today's rapidly changing and competitive business and innovation landscape, failure is often seen as a stepping stone to innovation, particularly in knowledge-intensive startups operating within Agile IT development environments. This qualitative study investigates the role of learning from failures in knowledge-intensive startups, particularly within such teams. This study, part of an ongoing PhD research, delves into how these organizations construct failure and mistakes and how they foster learning from them to drive innovation and long-term sustainability.

The ability to learn from failure is vital for organizations that aim to adapt quickly, continuously improve, and innovate in uncertain markets. Understanding the dynamics of organizational learning can offer practical insights into improving innovation processes. The primary objective of this research is to explore the underlying dynamics of learning from failure in knowledge-intensive startups and how such learning contributes to the potential for organizational growth and innovation. To achieve this, the study employs a critical corporate ethnographic approach, incorporating participant observation, ethnographic interviews, and document analysis over a four-month period. Data will be collected from Agile project teams within a knowledge-intensive IT startup, with a focus on understanding the interpersonal dynamics, power relations, and team reflexivity involved in learning from failures. Planned based on the result of a systematic literature review, preliminary findings from a pilot study, which involved interviews with leaders of Agile teams, suggest that many organizations face significant challenges in creating a culture that fully embraces failure as a learning opportunity. Common issues include deflection, toxic blame cultures, and inconsistent management approaches to mistakes, which hinder effective organizational learning. Despite the emphasis on “failing fast” in many Agile frameworks, the study found that learning efforts in these environments often remain superficial, with real behavioral change rarely occurring. The research highlights the importance of fostering a reflective learning culture, supported by consistent leadership practices and psychological safety, to encourage open dialogue and genuine learning from failure. This study contributes to the ongoing academic discourse on knowledge management and organizational learning from failure in innovation management, particularly within the context of Agile IT startups, offering recommendations for fostering more effective learning cultures. At ECIM 2024 Conference I will present the results of the pilot study in the form of a list of emerging topics and categories from 11 pilot interviews. These categories I am going to use to further

specify my research questions and observation points to concentrate on during the observation period of the corporate ethnography. In the conference, I would like to encourage discussion on the specification of these research questions and observation points, while I appreciate suggestions on qualitative data analysis methods as well. The study's limitations include its current focus on a specific sector, and the early stage of the empirical research.

**Keywords:** agile development, corporate ethnography, innovation, knowledge-intensive startups, learning from failure, organizational learning

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# Session 5. Artificial Intelligence and the Financial Sector

## Cyberinsurance as a financial innovation

*Éva Pintér, Associate Professor, Corvinus University of Budapest*

Cyber insurance has emerged as a significant financial innovation in response to the rapidly evolving digital landscape and the increasing prevalence of cyber threats. This specialized form of insurance provides organizations with financial protection against losses resulting from cyber incidents, including data breaches, network damage, and business interruption caused by cyber attacks. In my research, I analyse the insurance providers cyber insurance solutions and performance. The cyber insurance market has experienced remarkable growth in recent years. In 2023, the global cyber insurance market reached approximately \$14 billion in premiums, more than doubling over the past five years. This growth trajectory is expected to continue, with projections indicating that the market will expand to \$23 billion by 2026, representing an annual growth rate of 15-20%. As a financial innovation, cyber insurance offers several key benefits. The risk transfer allows organizations to transfer some of the financial risks associated with cyber incidents to insurers, providing a safety net against potentially catastrophic losses. Incentivizing security practices means, that insurers often require policyholders to implement specific cybersecurity measures, thereby encouraging better overall security practices across industries. Modern

cyber insurance policies cover a wide range of cyber-related risks, including regulatory fines, legal liabilities, and reputational damage. The cyber insurance market is characterized by rapid product innovation, with insurers continually adapting their offerings to address emerging threats and technologies. The increasing adoption of cyber insurance reflects its growing importance in enterprise risk management strategies. As digital transformation accelerates across industries, cyber insurance is becoming a fundamental component of organizational resilience. However, the cyber insurance market faces challenges. The dynamic nature of cyber threats requires insurers to constantly reassess and adjust their underwriting practices. Additionally, the potential for systemic risks and the difficulty in accurately pricing cyber policies pose ongoing challenges for the industry. Despite these challenges, the cyber insurance market is poised for significant growth. The increasing sophistication of cyber attacks, stricter regulatory requirements, and growing awareness of cyber risks are driving demand for these innovative financial products. As the market matures, we can expect to see further innovations in policy structures, pricing models, and risk assessment methodologies, cementing cyber insurance's role as a critical financial innovation in the digital age.

**Keywords:** cyberinsurance, financial literacy, financial innovation

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## Cybersecurity and financial literacy

*Ágnes Sütő*, Head of Marketing, PR and e-channels,  
Hungarian Banking Association

Cybersecurity and financial literacy have become increasingly intertwined in the digital age, with Hungary taking significant steps to address these

critical issues through initiatives like the KiberPajzs (CyberShield) program. Launched in November 2022, KiberPajzs represents an unprecedented collaboration between various stakeholders, including the Hungarian National Bank, the Hungarian Banking Association, the National Media and Infocommunications Authority, the National Cyber Security Institute, and the National Police Headquarters. In my research, I want to analyse the results of the program. The program aims to enhance digital security and combat financial abuses in the cyber realm. Since its inception, KiberPajzs has made notable progress, with its website receiving 171,000 visitors in recent months, two-thirds of whom were aged 55 and older, a particularly vulnerable demographic. The initiative focuses on educating customers, coordinating efforts between authorities and market players, and creating robust protection against cyber threats. Despite these efforts, Hungary faces significant cybersecurity challenges. A recent study revealed that even the most digitally savvy group (18-29-year-olds) has limited cybersecurity knowledge, highlighting a gap between perceived and actual digital security skills. The study also emphasized the need for better awareness and preparedness, as cybercriminals increasingly employ advanced technologies to perpetrate fraud. In terms of financial literacy, Hungary has shown promising results. The PISA 2022 Financial Literacy Framework revealed that Hungarian students performed exceptionally well, with 81.7% demonstrating financial skills at or above the expected level. However, there remains a need for enhanced financial education to address the evolving financial landscape and reduce inequalities stemming from different family backgrounds. The KiberPajzs program has expanded its reach, with the Hungarian Ministry of Justice joining in 2024. This collaboration enables better monitoring of fraud patterns and cybersecurity risks in financial transactions. The program aims to foster healthy skepticism and vigilance towards online shopping, social media use, and banking, providing key rules to reduce the risk of becoming a



victim of cybercrime. The integration of cybersecurity awareness and financial literacy education is crucial in combating the growing threat of cybercrime. With tens of thousands of victims and billions of forints in damages annually, initiatives like KiberPajzs play a vital role in protecting Hungarian citizens and businesses from cyber threats while promoting responsible financial behavior in the digital age.

**Keywords:** cybersecurity, financial literacy, KiberPajzs Program

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## Artificial Intelligence (AI) Adoption and Operational Performance of Commercial Banks in Ghana. The moderating role of Employee Technology Skills

*Masud Ibrahim, Senior Lecturer, Akenten Appiah-Menka University*

*Emmanuel Kwapong, Akenten Appiah-Menka University*

*Aaron Kumah, Akenten Appiah-Menka University*

The study examined of the adoption of artificial intelligence (AI) on operational performance within Ghana Commercial Banks by considering the moderating role of employee technological skills. A sample size of 136 employees from Ghana Commercial Bank comprised the population of the study, which employed a quantitative methodology. The instrument used to collect the data was a structured questionnaire. The research samples were chosen using the convenience sampling technique. Amos' Structural Equation Model (SEM) (version 23) was used for data analysis. The results show that implementing AI significantly improves operational KPIs like cost savings and service effectiveness. In order to achieve these performance advantages, employee technology proficiency is essential.

Skilled workers facilitate more seamless AI integration and efficient operations. Artificial intelligence (AI) gains more advantages when combined with technological know-how, which boosts AI's improvement in operational performance. It was suggested that banks prioritize the development of their employees' technological skills and make investments in AI technology and system upgrades to satisfy operational needs. Banks should also create precise metrics to evaluate how the use of AI affects operational performance. Furthermore, banks have to make sure that training initiatives for staff members correspond with the particular objectives and features of the AI systems they are putting into place.

**Keywords:** artificial intelligence, technology, operational performance, employee skills

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## Navigating Change: Insights into Financial Institutions in Hungary and Kazakhstan

*Anara Bekmukhambetova, Ph.D. Student,  
Corvinus University of Budapest*

Change management has become an essential component of organizational strategy, particularly in sectors subject to rapid technological, regulatory, and market shifts, such as the financial industry. This study examines change management practices in financial institutions in Hungary and Kazakhstan by using qualitative methodology to explore the experiences of professionals involved in change management. The research highlights key drivers of change, such as regulatory compliance, technological advancements, and market competition, as well as the

strategies employed to manage these changes. By linking the findings to established change management theories and models, this study makes a theoretical contribution to the understanding of how emerging markets navigate change in the financial sector. Practical implications for bank managers and policymakers are discussed, with a focus on best practices for implementing change and overcoming resistance. The research is focused on two specific markets, which may limit its applicability to other contexts. Future research could expand the sample size and explore other regions to provide a more comprehensive understanding of change management practices.

**Keywords:** change management, financial institutions, employee resistance, banks, organisational change

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## Investigating the importance and prevalence of cryptocurrency acceptance research

*Márk Recskó, Ph.D. Student, Corvinus University of Budapest*

While the perception of cryptocurrencies remains dynamic, their popularity continues to grow. This is evidenced not only by expanding market trends and media coverage but also by an escalating body of academic discourse. Historically, research has focused on the financial and operational aspects of cryptocurrencies; however, there's now a burgeoning interest in consumer acceptance and trust. This study offers a comprehensive view of scientific research on consumer acceptance of cryptocurrencies through bibliometric analysis and systematic literature review. The study underscores the importance of cryptocurrencies using academic and statistical sources. It includes a bibliometric survey

that details the demographic contours of adoption research, covering geographical distribution, research methods, and sampling techniques. A taxonomic classification and comparative analysis of consumer acceptance research reveal patterns and variations in definitions, methodologies, and content. The study also examines the prevalence and effectiveness of technology adoption models in the literature, identifying key variables and trends over time. Such a diagnostic analysis allows for the identification of prevailing research trajectories and makes salient recommendations for methodological refinements and content extensions, while also highlighting emerging research gaps and unexplored horizons ripe for scholarly exploration. The systematic review follows the PRISMA methodology, with results from Scopus and Web of Science showing increased research on cryptocurrency acceptance, peaking in 2023. Asia remains dominant in publications, with rising contributions from Europe, but there's a notable lack of research from South America, Africa, and North America. On the other hand, from a methodological point of view, the popularity of the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) is confirmed in acceptance research, with frequent modifications and extensions. The analysis also points to the diversity of the solutions and designs used, where the selection of Bitcoin and cryptocurrency users is a common option. This type of scientific work contributes to mapping the current state of research on the acceptance of cryptocurrencies, which still faces numerous research gaps. While research on cryptocurrency acceptance is gaining popularity, it still significantly lags behind literature focusing on financial and technological aspects. Therefore, there is a crucial role for works that attempt to systematically uncover research gaps and provide suggestions for further research directions. The findings of this study thus contribute significantly to identifying research directions and establishing possible new correlations. This is of particular importance in the ramp-up phase of this topic, reinforcing the tendency

to apply new approaches in addition to confirming existing findings. An important limitation of the research is that, in addition to the prominent scientific role of Scopus and Web of Science, many other databases can be used for similar purposes, as well as the filtering criteria involving a number of individual researcher decisions. For this reason, it is also worthwhile to conduct this research with additional databases or other filtering options and compare results and trends.

**Keywords:** adoption, bitcoin, cryptocurrencies, financial innovation, technology acceptance

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## From Conventional to Cutting-Edge: A Comparative Study of AI-Enhanced and Traditional Management of Innovation Projects

*Katarina Antić, Ph.D. Student, University of Belgrade*

*Biljana Stošić, Full Professor, University of Belgrade*

*Radul Milutinović, Assistant Professor, University of Belgrade*

*Katarina Milosavljević, Ph.D. Student, University of Belgrade*

Integrating Artificial Intelligence (AI) into innovation management transforms how projects are managed, presenting both opportunities and challenges. Traditional management of innovation projects relies heavily on human intuition and creativity. At the same time, AI offers the potential to automate tasks, enhance decision-making through data-driven insights, and detect trends in real-time. This paper examines the evolving role of AI in innovation projects, evaluates the effectiveness of AI-enhanced approaches in managing innovation projects, and compares them with traditional project management methods. The primary

objective of this research is to assess how AI can complement, augment, or even replace traditional project management practices across phases of innovation projects. The focus is identifying AI's strengths and limitations in various phases of innovation projects and how it complements or replaces traditional practices. After the introduction and theoretical foundations, a mixed-method research approach is employed. First, a bibliometric analysis is conducted using the Web of Science database to track research trends, collaboration networks, and influential publications in the field of AI and innovation management. Second, a focused literature review is performed on studies published between 2019 and 2024, specifically examining AI applications in managing innovation projects. These methods provide the basis for a comparative analysis of AI-enhanced versus traditional management of innovation projects. The study reveals that AI significantly enhances project efficiency by automating data processing, optimizing resource allocation, and improving trend detection. It also supports decision-making by offering real-time, data-driven insights. However, challenges remain in integrating AI into projects due to technical complexity, data quality, and ethical concerns. The findings suggest that while AI improves operational efficiency and decision-making, human intuition and creativity are still essential, particularly for strategic thinking and ethical considerations. The study recommends a hybrid approach, where AI handles data-heavy tasks, while human expertise guides creative and ethical decisions. Limitations of the paper include reliance on the Web of Science database, restricting the scope of the literature reviewed, and focusing on a specific timeframe. These limitations provide space for further improvement of the work in the continuation of the research. Future research should focus on developing hybrid models that would combine human intuition and AI-driven management practices to create more balanced innovation strategies. Other directions for exploration include improving AI's capacity to handle tasks requiring ethical

judgment and creativity, such as through explainable AI (XAI) to address transparency issues. Research could also investigate the challenges of data dependency by enhancing data quality and accessibility for AI systems, as well as examining AI's role in fostering collaboration in geographically dispersed teams and improving communication and project coordination in global innovation networks.

**Keywords:** artificial intelligence, bibliometric analysis, comparative study, innovation management

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# Session 6. Sports and Innovation

## Factors motivating Hungarian NFL satellite fans to watch games

*Attila Kajos, Associate Professor, Corvinus University of Budapest*

Integrating Artificial Intelligence (AI) into innovation management transforms how projects are managed, presenting both opportunities and challenges. Traditional management of innovation projects relies heavily on human intuition and creativity. At the same time, AI offers the potential to automate tasks, enhance decision-making through data-driven insights, and detect trends in real-time. This paper examines the evolving role of AI in innovation projects, evaluates the effectiveness of AI-enhanced approaches in managing innovation projects, and compares them with traditional project management methods. The primary objective of this research is to assess how AI can complement, augment, or even replace traditional project management practices across phases of innovation projects. The focus is identifying AI's strengths and limitations in various phases of innovation projects and how it complements or replaces traditional practices. After the introduction and theoretical foundations, a mixed-method research approach is employed. First, a bibliometric analysis is conducted using the Web of Science database to track research trends, collaboration networks, and influential publications in the field of AI and innovation management. Second, a focused literature review is performed on studies published between 2019 and 2024, specifically examining AI applications in managing innovation projects. These methods provide the basis for a



comparative analysis of AI-enhanced versus traditional management of innovation projects. The study reveals that AI significantly enhances project efficiency by automating data processing, optimizing resource allocation, and improving trend detection. It also supports decision-making by offering real-time, data-driven insights. However, challenges remain in integrating AI into projects due to technical complexity, data quality, and ethical concerns. The findings suggest that while AI improves operational efficiency and decision-making, human intuition and creativity are still essential, particularly for strategic thinking and ethical considerations. The study recommends a hybrid approach, where AI handles data-heavy tasks, while human expertise guides creative and ethical decisions. Limitations of the paper include reliance on the Web of Science database, restricting the scope of the literature reviewed, and focusing on a specific timeframe. These limitations provide space for further improvement of the work in the continuation of the research. Future research should focus on developing hybrid models that would combine human intuition and AI-driven management practices to create more balanced innovation strategies. Other directions for exploration include improving AI's capacity to handle tasks requiring ethical judgment and creativity, such as through explainable AI (XAI) to address transparency issues. Research could also investigate the challenges of data dependency by enhancing data quality and accessibility for AI systems, as well as examining AI's role in fostering collaboration in geographically dispersed teams and improving communication and project coordination in global innovation networks.

**Keywords:** artificial intelligence, bibliometric analysis, comparative study, innovation management

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## Sports Technology Innovation: Transforming Fan Engagement

*Md Mahbubul Haq, Ph.D. Student,  
Corvinus University of Budapest*

The sports industry is increasingly shaped by technological advancements that influence fan engagement, organizational practices, and performance evaluation. However, there remains a lack of comprehensive literature review articles exploring the systematic integration of technology across the sports ecosystem. This study addresses this gap by conducting a systematic quantitative literature review (SQLR) combined with a meta-synthesis to analyze the scope of technological innovation in sports management literature from 2010 to 2024. The research objective is to evaluate the extent to which technology impacts the sports industry and to identify key areas for future investigation. Using a structured search process on Scopus and Web of Science databases, supplemented by Google Scholar, 48 relevant articles were selected for analysis after screening an initial sample of 641 publications. Findings indicate that technological innovation in sports is a multidimensional field with a strong focus on enhancing consumer experiences and organizational competitiveness. Key trends include the adoption of wearable sensors and digital engagement tools that help organizations meet evolving consumer expectations, although systematic implementation remains inconsistent across sectors. Limitations of this study include potential biases in keyword selection and database constraints. Future research should explore broader technological impacts within under-represented sports and consider external innovation factors, particularly in relation to sports events and retail management. This review contributes to a deeper understanding of technology's role in sports, emphasizing its significance in advancing sports innovation and management strategies.

**Keywords:** digital transformation, sports innovation, sports management, technological advancement

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## Innovative analysis of the context of global migration using the example of professional footballers

*Zsolt Havran, Associate Professor, Corvinus University of Budapest*

*Diána Ivett Fűrész, Assistant Professor, University of Pécs*

*Ákos Jarjabka, Associate Professor, University of Pécs*

An important issue in cross-cultural management is how colleagues from different cultures can work together and how open employees are to working in a country where there is a large cultural distance from their home. Cultural distance can cause culture shock and can negatively affect performance, so management needs to address the integration issue. The first step is to address cultural differences and their openness to migration. Cultural world models provide a way of measuring cultural distance. Hofstede's 6D model (Hofstede, 1980), Trompenaars, and Hampden-Turner's model, or the GLOBE model have assigned values to countries along different dimensions. The research endeavours to establish a correlation between cultural distance and international migration by employing world cultural models. The study presents innovative viewpoints and empirical investigations about the movement of highly qualified workers, especially in case of professional football players. We answer the following research questions: How can cultural models be applied to football? What do the different models show about the global mobility of footballers – how does cultural distance influence the choice of a new country? The use of cultural world models in sports and football is well established. Szymanski et al. (2021) provide an excellent

summary of how sport can be used in international business. Multicultural environments and performance have been studied in football. The observation of official languages and the grouping of footballers according to their skills were also used to investigate cultural differences. Due to the global nature of sport and football, there is a high mobility of athletes worldwide. Hofstede's model has been used in several areas of cross-cultural management: cross-cultural competencies, know-how flows (Girginov et al., 2010), cultural diversity, and team performance (Maderer et al.; 2014) or cultural dimensions/values. The Trompenaars – Humpden-Turner model is also applied to professional footballers, professional referees, sports managers and fans. Examples of the application of the GLOBE model can be found in Russian football, football coaches, and the American NFL. An advantage of labour market analysis in football is that all transfers are transparent, so we can work with a complete database like a laboratory. A crucial and innovative benefit of our work is its foundation on a rigorous quantitative analysis. The dataset is sourced from the website Transfermarkt.de and includes all the worldwide football player transfers between 2000 and 2022, providing more than 84,000 transfers. Besides the economic and professional factors, geographical distance is also taken into account as a control variable. After presenting basic statistics, we applied multiple regression models. Our results show that all three models are suitable for analysing player migration, but the interpretations may differ. Overall, a significant effect between players' choice of destination country and cultural distance can be identified, but the magnitude of this effect varies across models. The included sport, economic and geographical control variables show different effects in the different models. Aside from making theoretical contributions, we also offer practical advice to individuals such as professional footballers and agents, as well as organizations like football clubs and federations.

**Keywords:** global migration, professional football, world cultural models, cross-cultural management

## Workplace sport motivation: First steps of a scale development

*Ágnes Szabó, Assistant Professor, Corvinus University of Budapest*  
*Attila Kajos, Associate Professor, Corvinus University of Budapest*

The benefits of physical activity, at both the individual and societal levels, are well-known and have been widely researched. However, less research has addressed the corporate level, in particular in regard to how organisations can most effectively encourage their employees to be physically active and participate in workplace physical activity programmes. Physical activity is widely recognized as a key factor in promoting employee health, reducing stress, and improving productivity, satisfaction and loyalty. However, many employees face significant barriers to engaging in regular physical activity during work hours, including time constraints, sedentary job roles, and lack of motivation. This presentation explores workplace physical activity motivation. Drawing on self-determination theory we examine the role of intrinsic and extrinsic motivation in shaping employees' engagement in physical activity. According to our previous study, employees are mostly motivated by introjected and identified regulators, suggesting that workplace sport is not fully intrinsically motivated and loosely linked to managerial goals. Further studies and a workplace motivation scale on motivation are essential to help companies understand how best to communicate and promote their workplace physical activity programmes.

**Keywords:** employee motivation, health promotion, self-determination theory, workplace physical activity

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## Hungarian Active Leisure (HEPA) Strategy 2033

*Gyöngyvér Lacza, Associate Professor,  
Head of Recreation and Health Promotion Studies,  
Hungarian University of Sports Science*

The issue of inactivity and obesity has become increasingly serious in Hungary over the past decade. Recent studies from Eurobarometer (2022) indicate that 59% of the population does not meet the minimum physical activity recommendations set by the World Health Organization. Furthermore, research reveals that nearly 60% of Hungarian adults, as well as one in five children, are overweight or obese. In response to these challenges, the State Secretary for Active Hungary commissioned a research group in 2023 to develop the first-ever Hungarian Active Lifestyle (HEPA) Strategy. To begin, the team of experts created a sectoral map and conducted surveys to identify potential partners for action. They then conducted a comprehensive review of relevant literature, international guidelines, and best practices. Based on the findings, the research group selected the OECD/WHO 'Policy Options to Increase PA Intervention (2023)' model as the theoretical framework for future interventions. From January to June, a minimum of three workshops were organized for each sector, involving approximately 200 stakeholders. These workshops resulted in the formulation of over 100 interventions, including initiatives targeting active schools, higher education institutions, workplaces, and seniors. Additionally, a system for activity prescriptions and personal consultations will be introduced in the health and sports sectors, with specialized training provided to practitioners from both fields. Several proposals also focus on place-making and creating active cities. The importance of aligning the needs of the active leisure sector with environmental administration has also been emphasized. Governmental approval of the Strategy is expected

by the autumn term, with implementation scheduled to begin in 2024 and continue until 2033. To monitor the effectiveness of the Strategy, a representative study will be conducted every two years, focusing on physical activity rates and other health and well-being benefits.

**Keywords:** active lifestyle, physical activity, policymaking, strategy

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# Session 7. Knowledge Management, Collaboration, and Innovation

## The role of trust for networking and collaboration in tourism in least developed post-conflict countries

*Nikolas Hatz, Ph.D. Student, Chair of Economic Policy, Andr ssy University Budapest*

Tourism is a vital sector for the economic, environmental, and social development of many countries worldwide. Particularly resource-scarce countries count on tourism for job creation, revenue generation, foreign direct investment, and spillover effects on other sectors. For tourism to thrive, networking and collaboration among stakeholders are crucial; in least developed post-conflict countries (LDPCCs), however, establishing effective networks and fostering fruitful collaboration can be challenging due to often weak institutional capacities and limited government support. In such environments, trust-based private sector networks can compensate for weak public sector structures. Thereby, trust serves as a cornerstone for effective networking and collaboration, which can lead to several benefits such as innovative behavior, resource sharing, capacity building, market access, crisis management, and the promotion of sustainable tourism practices by facilitating the exchange of best practices and encouraging collective action. To establish effective networks in tourism for LDPCCs, trust among stakeholders is essential. As the level of trust in society and among businesses, however, might be impacted by conflict, the research objective is to better understand



the role of trust for networking and collaboration in tourism in the context of LDPCCs; it is assumed that networks and collaboration will find it more difficult to emerge in a post-conflict context. Following Granovetter's embeddedness theory, economic activity and the behavior of involved actors are embedded in structures of social relations; hence, social relations affect economic activity and behavior. The development of trust, which is vital for economic activity and collaboration, is also affected by these social relations. And as conflict impacts social relations, it is assumed that it is more difficult to build trust for economic activity and collaboration based on social relations impacted by conflict. To better understand the role of trust, qualitative explorative interviews are conducted with small and medium-sized tour operators in Cambodia, which have come together in a self-emergent network and engaged into collaboration since one year. The interviews provide relevant insights on (1) the emergence and (2) the benefits of networks in LDPCCs and develop both theoretical and practical implications. In particular, the research identifies the factors that can lead to the creation of networks and collaboration in tourism in LDPCCs, analyzes the benefits of such networks and how those are perceived by stakeholders of the network, and provides actionable insights on how the creation of networks can be encouraged and initiated. The findings significantly advance existing literature by bringing together two distinct research streams, combining network theories and reconciliation studies, using the tourism sector in post-conflict Cambodia as research context for this paper. While network theories are well researched in developed countries—taking favorable contextual factors such as an intact society with well-functioning social relations for granted—they are less researched in the context of developing countries, and even less so in a post-conflict context. LDPCCs, however, often have additional and unique challenges that deserve attention.

**Keywords:** collaboration, network theories, post-conflict, reconciliation, tourism, trust

## Multiplex knowledge networks in regional innovativeness

*Dávid Bilicz, Assistant Lecturer, University of Pécs*

There is a wide literature connecting the innovativity of regions to the embeddedness of their organizations within various networks. Different results found connection between the network position of a region and the innovativity of said region's organizations. These researches usually examine only a single type of network while it is shown that the simultaneous use of multiple networks provide additional information. The goal of this research is to evaluate multiple types of knowledge networks. By doing so, I am measuring what roles different knowledge networks play in generating knowledge and innovative capacity to the regions of Europe. In my longitudinal research, I examine research collaboration, co-patenting and co-publication networks separately. Additionally I am also introducing a special type of multilayer network out of the three different and widely used knowledge networks.

The presentation includes results from a panel dataset covering 19 years of data and 1308 NUTS3 regions in Europe. The presentation aims to use a regional knowledge production function framework. The aim of the presentation is to point out how the different knowledge collaboration types affect regional innovation, and how the multilayer network approach can help discovering new potentials in the field.

**Keywords:** knowledge production function, multilayer network, network position, regional innovation.

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## Funding pays off: Introducing a research framework for estimating university-industry transfer time using the case of neuromorphic computing

*Jasmin Quill, Ph.D. Student, RWTH Aachen University*

*Lennart Stoepel, Ph.D. Student, RWTH Aachen University*

*Peter Letmathe, Professor, RWTH Aachen University*

Technology transfer between research institutions and industry has been studied for several decades. Although countries and economic areas spend millions of dollars each year to fund research activities, the process of transfer has not been fully understood yet. One aspect that has been largely neglected, is the time and its influencing factors that university-industry transfer needs to take place. This understanding is crucial in order to bring urgently-needed technologies to the market, to make realistic technology forecasts and to provide targeted science funding. This paper presents a method to measure the transfer time of technological topics from science to patents based on an unsupervised text clustering algorithm and expert interviews and apply it to the use case of neuromorphic computing. Furthermore, we investigate the influencing factors of the transfer time by the means of an OLS regression. We find that the funding rate of a technological topic negatively correlates with the transfer time, indicating that well-funded technological topics are quicker to appear in patents. Furthermore, differences in transfer time are found depending on the geographical origin of a technological topic.

**Keywords:** research funding, technology transfer, third mission, transfer time

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## Exploring Tourism Innovation for Business Resilience: The Role of Managerial Decisions and Organizational Dynamics

*Noémi Rázga-Ilyés, Ph.D. Student, Corvinus University of Budapest*

Over the past 25 years, tourism has been profoundly influenced by a series of unexpected global events, often referred to as ‘black swan events.’ These events, from terrorist attacks and health crises to political conflicts and their resulting economic repercussions, were difficult for experts to foresee but have had a substantial impact on the success of businesses within the sector. Similar to other industries, these challenges have highlighted the critical role of innovation in enhancing resilience. This study aims to identify the key decision-making factors that drive innovation processes in tourism, which in turn strengthen crisis resilience. To answer the research question, the author draws on narrative literature analysis, including a scoping review. The aim of a scoping review is to explore and map an area and the main conceptual frameworks associated with it. The systematic literature review will explore the factors that influence decision-making in tourism innovation. The study highlights gaps in the decision-making mechanisms that drive innovation in the sector. It concludes that innovation is becoming essential for promoting growth, competitiveness, and sustainability in tourism. Within this process, managerial decision-making plays a crucial role in organizations. Informed decisions by management enhance organizational performance, paving the way for innovation processes in tourism. Effective management decision-making influences the innovative culture within organisations, which ultimately affects the performance of the tourism company. Despite the benefits of innovation-driven leadership, there are still challenges and barriers to its implementation in the tourism sector. These challenges include resistance

to change, lack of resources and funding for innovation initiatives, and a conservative organisational culture that discourages risk-taking and experimentation. Overall, the literature emphasises the importance of innovation-driven management in the tourism sector, as management plays a key role in steering the firm towards more efficient operations through the promotion of innovation. However, there is limited research on how SMEs encourage innovation in tourism and how managers shape the innovation environment or even climate for innovation. The research explores the organisational factors that support innovation in tourism and the factors that influence the decisions of tourism enterprises in relation to tourism innovation. It is important to emphasise that the decisions taken in the literature review depend to a large extent on the keywords used in the search and the constraints applied. The literature review underscores the significance of managerial decision-making in the tourism sector. However, it also emphasizes the need for further research and development to expand the theory of innovation within a tourism-specific context. Future research could focus on exploring strategies and best practices that foster a culture of innovation in tourism enterprises.

**Keywords:** leadership, managerial decision-making, organizational dynamics, tourism innovation

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## Operational Features of Science and Technology Parks

*András Háy, Managing Director, ZalaZONE Science Park Ltd*

*Csilla Toth, Park Manager, ZalaZONE Science Park Ltd.*

*Beata Fehervolgyi, Associate Professor, University of Pannonia*

*Zoltan Kovacs, Professor, University of Pannonia*

The science and technology parks are active area of research with many themes nowadays. The aim of the article is to address the operational characteristics of the parks based on examples of international parks. The analysis approaches the parks as innovation ecosystems on system level through case studies of selected parks, placing them into the context of results of a wide-range survey. Following the literature review, three research questions are discussed. First, a comprehensive picture is given on operational characteristics of science and technology parks.

The second part of the study focuses on how the business model approach can be interpreted at the level of science and technology parks. Finally, the paper makes suggestions to elements outlining a general model for development of science and technology parks. The presented research highlights the importance of knowledge-based themes and ecosystem elements, as well as the role of knowledge management at park level.

**Keywords:** innovation ecosystem, science park, technology park, business model, park management

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## Mapping Hungary's business environment: Ownership, structure and regional disparities

*Márk Végh, Ph.D. Student, University of Pannonia*

*Kovács Alexandra, Ph.D. Student, University of Pannonia*

This publication offers a detailed statistical overview of Hungary's economic landscape by analyzing key business indicators. Primary metrics include the number of enterprises, ownership structures (domestic and international), partnership status (affiliated or standalone), and business types (individual or corporate). The study also examines industry distribution, employment statistics, and regional variations to provide insights into the current economic conditions. Key questions addressed include providing guidance for PhD students researching this area from legal and economic policy perspectives. The publication identifies businesses relevant to specific research fields and clarifies the SME (Small and Medium-sized Enterprises) classification. It considers the perspectives of regulatory bodies like NAV (National Tax and Customs Administration), KSH (Hungarian Central Statistical Office), and MNB (Hungarian National Bank). The study further explores which firms are positioned for progress in digitalization and innovation. It references frameworks such as DESI (Digital Economy and Society Index) for digital potential and EIS (European Innovation Scoreboard) for innovation, particularly focusing on firms with a high-skilled workforce. The legal and regulatory context for startups is also analyzed, covering both statistical and legal definitions relevant to the Hungarian market. By synthesizing available data and offering methodological guidelines, this publication aims to serve as a foundational resource for in-depth investigations into Hungary's business environment, especially for emerging researchers.

**Keywords:** Hungary, economy, businesses, digitalization, innovation, SME

# Session 8. Technology Management

## Measuring technology acceptance

*László Berényi, Associate Professor, University of Miskolc*

The accelerated changes in the world are associated with the birth of new technologies faster than before. Shorter lead times and product life cycles resulted in the appreciation of the project approach to work and the agile methods. Considering business purposes, corporations have limited time to introduce products and services to the market and make them successful. Understanding the process, the motivations, and the influencing factors of technology acceptance is a valuable contribution to building targeted business strategies. The study aims to reveal the opportunities for measuring technology acceptance. The complex challenge must cover the individual level and its aggregations. The ultimate source of success is the individual acceptance of a product or a technology, but the mass patterns give strategic information. Corporations can use it to establish plans for effective production and operations. The study reviews the popular methods of measuring behavior, technology acceptance factors, task-technology fit, and information system success. The findings show the applicability and the limitations of the models, suggesting the combination of different models. The Presentation was conducted as part of the OTKA 139225 project entitled “Management readiness level towards Strategic Technology Management Excellence”.

**Keywords:** acceptance models, behavior models, diffusion, technology, technology management



## Technology auditing: A systematic literature review

*Nikolett Deutsch, Associate Professor,  
Corvinus University of Budapest*

Strategic Technology Management has emerged and evolved parallelly with the paradigms of strategic management. It focuses on the opportunity of organizations operating mainly in technology-intensive industries to explore and exploit technological capabilities upon which competitive advantage can be obtained. As Strategic Technology Management involves multifunction within an organization, requires broad and diversified knowledge, and must be developed and implemented with business objectives to enable a firm's profitability and growth, excellence in Strategic Technology Management provides unique opportunities for organizations in terms of building a successful future. Accordingly, a framework supporting the evaluation of the technological readiness level of management can significantly contribute to developing organizational competitiveness through a better understanding of strategic-level capabilities and deficiencies in operations. In the last decade, several technology audit models have appeared that can serve as references for future practical approaches expected to be used by corporate leaders, strategists, and technology managers to understand and manage technological capabilities and capacities. The aim of this paper is to provide a comprehensive review of the state-of-the-art technology audit frameworks, to investigate the critical lessons learned from their practical application, and to identify the main aspects and elements valid for the field and critical functions of technology management. To this end, a systematic literature review was carried out considering the relevant papers and articles published in highly ranked international journals. Key findings suggest that despite the diversity of the given models, there

is still room for improvement regarding the common understanding of technology, the full coverage of management capabilities, and the generalist approach to the validation and practical applicability of the structure and content of the models. The presentation was conducted as part of the OTKA 139225.

**Keywords:** technology audit, innovation management, strategic technology management, systematic literature review

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## Technology in Strategy Creation-or the Revival of the Harvard School

*Prof. Tamás Mészáros, Rector Emeritus,  
Corvinus University of Budapest  
Viktor Nagy-Borsy, Assistant Lecturer,  
Corvinus University of Budapest*

Technology strategy, both of which have a library of literature in themselves, but research into their ‘integration’, their interaction and their relationship in general - though not particularly recent or contemporary in motivation - is increasingly on the agenda. The simple reason for this is the increasing importance of technology in the business world in general, or even more specifically in the age of digitalisation. The aim of this paper is to analyse the technology-strategy relationship and to answer the question whether the integration of technological advances into the strategy-making process will enable companies and other institutions to develop and implement a more robust strategy than hitherto. The short, hypothetical answer is yes. A more elaborate explanation, called the initial hypothesis, could be that the digital

technologies that have developed or will develop in the 21st century will provide organisations with a set of tools that can be used to make faster, yet more informed, strategic decisions using real-time databases and analytical techniques. There is a need for this, as the paradigm that emerged in the 1960s and is still in many respects valid today, known as the Harvard School, has been subject to much criticism over the decades. Our study aims to demonstrate that the school, which has played a key role in the development of strategic management, can bring about a qualitative change in the strategic planning process by integrating modern technologies into the planning process. The Presentation was conducted as part of the OTKA 139225 project entitled “Management readiness level towards Strategic Technology Management Excellence”.

**Keywords:** strategy management, planning, digitalization, technology management

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## Projects and innovations

*Bálint Blaskovics, Associate Professor,  
Corvinus University of Budapest*

*Máté Molnár, Ph.D. Student, Corvinus University of Budapest*

*János Tóth, Ph.D. Student, Corvinus University of Budapest*

Innovation plays a pivotal role in enhancing competitiveness and adaptability in organizations, with project management serving as a tool and approach for implementing innovative products and ideas. Despite possessing the required knowledge and skilled professionals, higher education institutions (HEIs) often face challenges in effectively managing organisational projects due to a lack of structured project management

practices. This study, conducted as part of the OTKA 139225 Research Programme, investigates project management approaches for innovative products and organisational development in HEIs, focusing on their project management maturity and the factors influencing success. This study explores the relationship between project management methodologies, organizational culture, and strategic decision-making processes in HEIs. Utilizing secondary data analysis of project documentation, the research identifies gaps in project management readiness and highlights the necessity for HEIs to enhance their project maturity through structured methodologies, such as those outlined by the Project Management Institute (PMI). The findings suggest that HEIs can improve innovation management by adopting industry-standard frameworks, integrating strategic decision-making into project planning, and fostering a supportive institutional culture. This study contributes to the discourse on project-based organisational management in the academic sector and lays down the foundation for further research on possible practical recommendations for improving project efficiency and success in higher education institutes.

**Keywords:** higher education, innovation management, project management, project maturity

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## Innovation in Hungarian retail through the eyes of managers and consumers

*Dániel Kostyal, Ph.D. Student, Corvinus University of Budapest*  
*Bence Pistruí, Associate Professor,*  
*Corvinus University of Budapest*

Traditionally regarded as a sector with low technological development, retail has evolved into an industry that now employs numerous technological solutions. Several external factors contributed to this transformation; among them, the COVID-19 pandemic and the resulting lockdowns compelled companies to strengthen their online and omnichannel business models. As consumer habits have also shifted due to environmental impacts, it has become more crucial than ever to track consumer behavior. One of the main tools retailers use to adapt is innovation. Effective adaptation requires alignment between top executives' views on innovation and consumers' perceptions. My research explores this disparity, with the primary research question as follows: How does innovation appear in the domestic retail sector, and how do retail executives and consumers perceive innovation? As my research examines both the executive and consumer perspectives, it is based upon a mixed methodology. In the qualitative research phase, I explored the executive viewpoint through a semi-structured professional interview methodology, conducting interviews with seven executives. Based on thematic evaluation, I developed a questionnaire for consumers, which constitutes the second, quantitative phase of my research. For the questionnaire analysis, I created consumer clusters based on various characteristics, examining individual innovation factors within each segment using correlation indicators. As a result of my research, I gained a comprehensive view of both the executive and consumer perspectives, allowing for a comparison between the two. The findings indicate that,

while there are many similarities in how retail innovation is perceived by executives and consumers, there are also numerous differences. A focal point for both executives and consumers is the perception of price increases caused by environmental crises. Whereas executives believe consumers place little importance on back-end innovation, the research indicates that consumers express a high level of interest in back-end innovation. Also, consumers show moderate openness toward in-store processes, although executives consider this an especially important area. Digital innovation solutions are seen as important by both perspectives, with mobile application solutions showing alignment with several in-store innovation solutions. The results of this research can provide added value for top executives in the domestic retail sector and researchers focused on this area. Considering limitations, the scope of my research included Hungarian retail only. Moreover, semi-structured interviews based on the subjective opinion of seven executives are, in themselves, not enough to draw general conclusions. For further research directions, I consider regional comparison a key step to get an even more comprehensive picture on Hungarian retail and how innovation is perceived. A separate analysis of back-end and front-end innovation can also be deemed a possible research direction in the future.

**Keywords:** digitalization, Hungary, innovation, retail, technology

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# The Impact of the Fourth Industrial Revolution on Entrepreneurial Leadership: A NLP-Based Analysis

*Ronnen Avny, Ph.D. Student, Corvinus University of Budapest*  
*Nikolett Deutsch, Associate Professor,*  
*Corvinus University of Budapest*

The contemporary era of the Fourth Industrial Revolution encompasses significant technological advancements that impact nearly all aspects of daily life, necessitating firms to adapt their strategic management to navigate this evolving environment. This phenomenon was articulated by Ray Kurzweil, a prominent futurist and computer scientist, at the beginning of the century: “we won’t experience 100 years of progress in the 21st century —it will be more like 20,000 years of progress [at today’s rate]”. This research examines the role of entrepreneurial ability in fostering innovation, a critical factor for firms to gain and maintain competitive advantage and cope with the continuously changing business and technological environment. This study addresses the primary question of how the current Fourth Industrial Revolution affects the innovation paradigm, and more specifically, its impact on contemporary entrepreneurs. The investigation analyzed approximately 150 leaders from various industrial revolutions by evaluating their entrepreneurial attributes. An innovative Natural Language Processing (NLP) tool automatically identified leadership traits within a vast corpus of written texts. The analysis explored variations in entrepreneurial leadership attributes across the last four industrial revolutions, from the 19th century to the present Fourth Industrial Revolution, using nearly 1000 text files. This research introduces an innovative approach to qualitative research in entrepreneurship, utilizing advanced Machine Learning and Artificial Intelligence tools to analyze extensive data for

theory or phenomenon validation. The results highlight key leadership attributes in the Fourth Industrial Revolution, including risk-taking, prioritization, empathy, motivation, integration, listening, holistic perspective, and freedom. Entrepreneurs exhibit open-mindedness, avoid dismissing innovations from other firms, and share experiences within the technology ecosystem. The findings also confirm ethical perspectives towards the ecosystem and networking to enhance collaboration, as well as the need for agility and courage to navigate the rapid technological changes of the Fourth Industrial Revolution. This study underscores the importance of entrepreneurial leadership in modern organizations, highlighting the need for top management to be adaptable, risk-tolerant, and collaborative to drive innovation in the Fourth Industrial Revolution. From an academic perspective, it suggests that institutions should enhance curricula to better prepare students for contemporary leadership demands, incorporating courses and activities that develop skills such as adaptability, strategic thinking, and innovation. This research acknowledges the limitations due to the ongoing nature of the Fourth Industrial Revolution, indicating that some attributes may still be evolving. For instance, the complete effects of technologies such as generative AI on leadership and innovation might not be entirely reflected in the present analysis.

**Keywords:** Fourth Industrial Revolution, Entrepreneurial leadership, Innovation, NLP



# Session 9. Digitalization and its Challenges

## Unlocking Innovation Potential in Manufacturing SMEs —The Critical Role of Mediators in the Digital Era

*Yin Minghao, Ph.D. Student, Corvinus University of Budapest*

In the digital economy, mediators such as distributors, information brokers, and financial mediators play a crucial role in innovation management by facilitating the transfer of knowledge, resources, and technologies between various stakeholders. These mediators act as essential connectors between SMEs and external knowledge providers, reducing information asymmetries and bridging gaps in technological capabilities. By leveraging their networks and expertise, mediators enable SMEs to access critical resources necessary for sustaining innovation, thus driving economic growth and competitiveness in increasingly complex and dynamic markets. Small and medium-sized enterprises (SMEs) play a critical role in the global economy, contributing significantly to economic growth and the vitality of entrepreneurial ecosystems. In the context of the rapidly evolving digital economy, the adoption of digital technologies and the accelerated flow of data have fundamentally transformed the traditional operational and management environments of SMEs. These shifts have driven SMEs toward comprehensive digital transformation, altering their business models, revenue streams, and management practices. Faced with increasingly complex and competitive business envi-

ronments, SMEs are compelled to innovate continuously across various dimensions, including management, technology, human resources, and institutional frameworks, to maintain their competitive edge. Building on this background, this study first defines digital transformation and examines its broader socioeconomic implications, emphasizing the necessity for SMEs to embrace digitalization. The research highlights the significance of innovation management within SMEs as a crucial driver of economic development, particularly in the digital era. It identifies key challenges faced by SMEs in optimizing innovation management under digital transformation pressures and proposes targeted strategies for overcoming these challenges. These strategies aim to provide effective references for SMEs seeking to enhance innovation management and achieve high-quality development in a digitally-driven market environment. This research specifically focuses on the manufacturing sector, given its central role in driving economic growth, fostering technological innovation, and enhancing global competitiveness. Manufacturing industries, particularly in countries like China and Hungary, are undergoing significant transformations as they integrate digital technologies such as Industry 4.0, the Internet of Things (IoT), and smart manufacturing. These sectors not only serve as key contributors to national GDP but also act as testing grounds for the adoption of advanced technologies and knowledge transfer. The study examines how mediators, including innovation hubs, technology transfer organizations, and financial institutions, facilitate digital transformation and innovation management within manufacturing SMEs. It highlights the critical role of these mediators in enabling manufacturers to adopt new technologies, optimize production processes, and improve supply chain management in an increasingly competitive global market. To achieve these objectives, a robust mixed-methods research methodology was employed with a focus on the manufacturing sector in China and Hungary. The qualitative component involved conducting in-depth case studies and semi-structured

interviews with key stakeholders from intermediary organizations and manufacturing SMEs. These interviews explored how mediators support knowledge transfer and technological innovation, particularly in the context of digital transformation. Case studies provided detailed insights into the role of various mediators in promoting innovation, especially within the manufacturing domain, where digital tools and process optimization are essential for maintaining competitiveness. Given the challenges of broad-scale data collection, the quantitative analysis was focused on the manufacturing sector in China and Hungary. Data was gathered through targeted surveys distributed to a select group of manufacturing SMEs in these regions, capturing their digital technology adoption, R&D investment, and innovation outputs. Statistical techniques such as regression analysis were used to assess the relationship between intermediary support and innovation performance, emphasizing the adoption of digital technologies and improvements in operational efficiency. The findings suggest that mediators play a key role in supporting the digital transformation of manufacturing SMEs and improving their innovation capabilities, especially in bridging the gap between knowledge providers (e.g. universities and research or information providers) and SMEs, and in facilitating the diffusion of digital technologies and innovation practices. SMEs working with mediators showed significant improvements in adopting and applying advanced technologies, accelerating the innovation cycle and enhancing market competitiveness. However, the study also revealed several constraints, such as uneven access to intermediary services across company-based and varying levels of digital readiness among SMEs, which may limit the full realization of innovation benefits. Based on these findings, the study recommends that policymakers and business leaders take measures to strengthen the role of mediators, especially in underrepresented regions, and to promote the widespread adoption of mediators such as digital platforms by manufacturing SMEs. In addition, the study recommends addressing the digital divide among

SMEs and ensuring that more firms have equal access to intermediary services and innovation resources. Future research should further explore the long-term sustainability of mediators in supporting innovation, as well as the evolution and impact of digital technologies in shaping the innovation landscape of manufacturing SMEs.

**Keywords:** manufacturing SMEs, SME sector, innovation management, digitalization

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## Leveling Up Learning: The Role of Digital Video Games in Educational Innovation

*Merve Kaptan, Associate Professor, Muğla Sıtkı Koçman University*  
*Berke Soyuer, Associate Professor, Muğla Sıtkı Koçman University*

In the rapidly evolving landscape of education, innovation is increasingly driven by the integration of digital tools and methods that engage students in novel ways. Digital video games, once primarily regarded as entertainment, have emerged as powerful pedagogical tools that foster creativity, critical thinking, and collaboration. This paper explores the role of digital video games in shaping innovative educational practices, examining their potential to enhance learning experiences across various disciplines. By analyzing case studies and educational models that incorporate game-based learning, this research highlights how digital games can transform traditional teaching methods into interactive, immersive learning environments. Furthermore, the paper discusses the challenges of implementing video games in educational settings, such as balancing educational content with entertainment and ensuring accessibility for diverse student populations. Through a multidisciplinary

approach, this study provides insights into how digital video games can promote deeper engagement, encourage innovative problem-solving skills, and prepare students for the complexities of the modern world.

**Keywords:** educational technology, games, gamebased learning, interactivity

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## Measuring the Success of Innovation Investments: A Financial Analysis of Hungarian Companies (Focusing on medium and large Enterprises)

*Balázs Vajai, Ph.D. Student, University of Sopron*

*Viktória Angyal, Ph.D. student, University of Sopron*

This study investigates the impact of innovation-related expenditures on the financial performance of medium and large Hungarian enterprises over the period 2010–2020, highlighting the role of innovation as a driver of sustained growth and competitiveness. Despite the critical importance of measuring returns on innovation investment, accurately assessing these returns remains challenging. Using a novel formula developed by our research team, we analyze the effects of innovation investments on Free Cash Flow to Firm (FCFF) to provide a unique method for estimating return on investment (ROI). The research is based on a comprehensive dataset of corporate balance sheets, allowing for an in-depth period-by-period analysis. Results indicate no discernible trend in primary revenue categories, suggesting that other factors, such as capital structure, indebtedness, and industry classification codes may also significantly influence outcomes. Findings reveal a high failure rate

in innovation success, underscoring the limitations of focusing solely on the investment rate. While a positive relationship between investment and income is anticipated, results suggest that investments should be evaluated individually, as some may yield adverse effects if misaligned with market conditions. This research provides theoretical insights and actionable strategies for corporate financial management, emphasizing that strategic, well-targeted innovation investments are essential for long-term financial success but require careful consideration of multiple influencing variables.

**Keywords:** investment, cash flow, financial econometrics

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## Dynamics of HR controlling in the era of digital transformation

*Jana Blštáková, Associate Professor,  
University of Economics in Bratislava  
Robert Hanák, Associate Professor,  
University of Economics in Bratislava  
Nina Dědečková, Ph.D. Student,  
University of Economics in Bratislava*

This research addresses the utilization of people-related data for value creation in conditions of digital transformation. The roles of Human Resources (HR) have been emerging and the impact of digitalization has been already the focus of research efforts. While the impact of technologies on HR processes and practices has been studied, the potential of HR measurements under conditions of digitalization has not been fully explored yet. Our research focus is the transformation of HR

controlling in the digital era. The research aim is to contribute to the theory and practice of HRM by revealing the changes in HR controlling due to digital transformation. We studied the changes in HRM practice due to the use of innovation technologies, dynamics in HR controlling indicators, and the relationships between selected indicators. We used a combined research strategy. The qualitative analysis (case study) was used to recognize the changes in HR controlling and dynamics of indicators due to employment of technological innovations. The quantitative analysis was used to identify relationships between selected indicators. The object of our research was the corporation (SSC), operating globally in 76 countries, with more than 420 offices and production facilities on several continents. To reveal relationships between result-oriented indicator Human Capital Return of Investment (HC ROI) and selected indicators for measuring the partial effect of HR practices, we used the ordinal logistic regression analysis. New HR controlling indicators have emerged by the employment of innovative technologies. They are mostly focused on the quality of selection (i.e. quality of candidates), innovation potential (i.e. rate of innovative initiatives), talent (i.e. employer brand attractiveness to talent, talent satisfaction rate, the rate of loss of high-potential employees), and competence (i.e. index of competence gaps). By testing relationships between indicators in categories of HR practices (recruitment, training and development, talent management), we found that some indicators significantly predict HC ROI. It is the quality of new candidates, talent attraction rate, training hours, career promotion, high-potentials rate, and talent satisfaction survey. HR controlling is growing in terms number of indicators, the complexity of measures, as well as strategic impact, under conditions of digital transformation. Tools for accessibility and visualization of data bring added value to the information. The most impactful predictors of return on investment in human capital are innovative initiatives and the quality of newly hired employees. We recommend future research on mutual relationships

between indicators and predictors of result-related indicators. Also, the competence of HR managers to access people-related data on the perceived value of the information. Findings are results from the analysis of HR controlling in one company (case study). Most significant indicators were identified in the conditions of one company, therefore with limited potential to be generalized.

**Keywords:** HR controlling, HR indicators, HRM practice, digital transformation.

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## Leveraging AI for Sustainable Development: Current Applications and Future Potential in the Energy management sector

*Khouloud Challouf*, Ph.D. Student, University of Sopron  
*Hager Triki*, Assistant Professor,  
Higher Institute of Industrial Management of Sfax

Artificial intelligence (AI) has recently gained popularity in various businesses. It has become an integral part of today's life and is increasingly prevalent in our daily routines. Its integration into various industries has transformed decision-making processes, improved operational efficiencies, and enhanced sustainability efforts. This has brought significant changes to many sectors, leading to new levels of automation, efficiency, and innovation. This study highlights the importance of investing in AI implementation and having faith in its potential to develop sustainable capabilities. Such investments can improve efficiency, lower environmental impact, and foster sustainable energy solutions. A current case study in the energy management sector illustrates this point. The find-



ings indicate that AI serves as a vital catalyst for the energy transition, with the potential to decrease overall carbon emissions and generate revenues.

**Keywords:** artificial intelligence (AI), industry 4.0, sustainability, energy management sector, industry

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## Challenges in Data Asset Management

*Veronika Nagy-Takács, Ph.D. Student,*  
*Ludovika University of Public Service*

The most basic and general requirement for the functioning of public administration is that it should be of good quality. The most significant change in the evolution of data management over the last decades has been the increase in the economic importance of data – the commodification of data. In order for data to be used for its intended purpose, it is necessary to ensure that it is available, so that it is recorded (so that we know what data assets we have), and the rights and interests of data providers are protected in the context of data management and use (so that data are made available, and that the practices followed by data users are not prejudicial to the data subjects), the protection of data (so that they are kept intact for as long as necessary), access to data – with differentiated access rights – for those who are entitled to them (so that use can take place) and, of course, the quality of the data (so that use leads to the desired result). This study aims to provide an overview of the challenges of data asset management over the last 20 years. The research is based on a literature review and a review of legal regulations, including both Hungarian and EU sources. The results show

that the main requirements have not changed but that the evolution of information systems and technologies significantly burdens users and data controllers. The lack of clear terminology and generally accepted processes are the main obstacles to progress, but security issues must also be considered.

**Keywords:** data asset, data asset management, data regulation, quality management

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# International Value Conference 2024.

## Unique Track – Hungarian Society of Value Analysts

### **BS EN17952:2024 Value Management. Function Analysis; basic characteristics, requirements and guidance for implementation**

*Keith Owen, MRICS, MACostE, PVM, FIVM, United Kingdom*

The presentation will introduce you to the purpose and background of the Standard, Function Thinking, Function Analysis as a 'system' approach, the three main players, the two distinct areas of Function Analysis (core method of Value Management), the main components of Function Analysis, being Functional Need Analysis (FNA) and Technical Function Analysis (TFA). And their relationship. The FNA introduces a Functional Need Expression (FNE), User Related Functions and the TFA introduces Product Related Functions. We will see a simple example of Function diagrams and Function tree and the Function Analysis seven deadly sins.

**Keywords:** function, analysis, functional, technical, user-related, product-related

## Don't project, navigate.... with smile!

*Marion Berlioz, PVM, TVM, France*

*Sélim Ikkache, Coach Agile, France*

*Jérémy Leroi, Infininitiative, France*

In the actual Volatility, Uncertainty, Complexity and Ambiguity specific context projects (VUCA world), a new dynamic and cooperative approach proposition allows efficient project management. “Plan, specify, develop, verify, validate, trace”, such are the usual and successive words to describe the linear project phases of a development project. By shortening phases and iterating them to reach the same goal, these words become “conceptualize, create, confirm, affirm, put at disposal”. A new way of considering the project success assets. This new approach, based on a bold alliance of 3 methods - Value Management to give Sens, Ambitions and Needs; Agile to give Efficiency and Dynamism; Systems Engineering to give Industrial Excellence - brings major strengths:

- Dynamics that accelerate the project
- A better team collaboration with a common and shared sense
- A continuing Systemic view
- Structuring choices and decisions “at the right time” with available information
- Evolutions and Decisions traceability
- Progressive implementation of technical database

The project will then be more efficient because of human factors (dynamism, cohesion, cooperation, kindness, trust and transparency), and operational factors (driving the project, value creation, prioritization, anticipation, risk minimization and complete life cycle). We propose to describe this approach with a ludic analogy with the “Route du Rhum” offshore race.

**Keywords:** agile, value management, VUCA

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## Facilitating of the VM project work with software and AI integration

*Manfred Ninaus, Ph.D., PVM, TVM, CMC®, Austria*

Teaching the value management follows different ways in Europe. The paper delivers a guidance through the relevant pain points, which are the need for Software and AI and the solutions of VMCoach software. The AI and Value Engineering synergies are in closed connection. In an organization there are success critical factors as Time for workshops, Reuse of workshop results, Low barriers for team contribution, Consequent realization, Fast overview of all VE projects, Leveling solution competence, Standardise terminology what the Value Management Moderator and the Head of Value Management has to manage under common understanding. The paper allows insight to the impact of Agile and AI - supported Value Engineering with VMCoach.

**Keywords:** value management, AI, function, facilitating, VMCoach

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## The Role of Functional Structure in the Development of the Strategic Technology Management Excellence Model

*Ilona Hoffer, CSc, PVM, TVM, CVS®-life, Hungary*

*Nikolett Deutsch, dr. habil, Associate Professor at Corvinus University of Budapest, Hungary*

In 2020, the Institute of Entrepreneurship and Innovation at Corvinus University of Budapest, led by Dr. Nikolett Deutsch, started a research project entitled “Management readiness level towards Strategic Technology Management Excellence” within the framework of an OTKA grant. The primary objective of the research aims to establish a pilot framework for evaluating the technological readiness level of management that can significantly contribute to developing organizational competitiveness by a better understanding of strategic level capabilities and deficiencies in operations. The aim of my presentation is to summarize the essence and objectives of the Strategic Technology Management Excellence Model Development Project and to illustrate the role of the application of the functional structure in model building. The Presentation was conducted as part of the OTKA 139225 project entitled “Management readiness level towards Strategic Technology Management Excellence”.

**Keywords:** strategic technology management; excellence models; digital transformation; functional structure

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## Value Methodology Case Studies in Product, Process, and Project Areas

*James D. Bolton, FSAVE, CVS-Life®, PVM, USA*

The paper Demonstrates Important Factors Required to Obtain the Best Results using the Value Methodology: Selecting the right Cross-functional team for the given VM study project; Collecting the right data prior to a VM Workshop for that given project; Setting the right achievable targets for the VM Study for team motivation; Ensuring full attendance at the pre-workshop meeting for the actual study; Proper use of the Value Methodology Tools throughout the VM Study; Well documented proposals presented to the project stakeholders for decisions.

The Value Methodology is a powerful tool when the rules are followed according to the SAVE International standards per the VM Guide and the Function Analysis Guide. Its power can be utilized in products, processes, projects as well as organizations and service industries. When you have the right team with the right data and the right VM process led by the right experienced CVS certified instructor, even the almost impossible is possible

**Keywords:** value methodology, function, analysis, cross-functional team

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## Product competitiveness challenge playing in different market

*Paola Mainardi, Principal Engineer, Design to cost, Value Engineer, Italy*  
*Rosaria Conte, Engineer, Systems Engineer, New Product Development, Italy*

As an energy technology company that has a diverse portfolio of equipment and service capabilities that span the energy and industrial value chain. To develop the most advanced technologies, BH has put in place a framework to guide activities from conceptual design up to validation. One of the most challenging opportunities is to develop products that meet different customer requirements with a competitive price, without impacting safety and quality. VM approach has been applied in several programs to develop new solutions. The paper will go through the theoretical model of VM application and two case studies.

**Keywords:** value, innovation, synergy, multi-systems approach

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## Integrating Value Management and Project Programming to best address the Human Factor

*Isam Almomen, Arch, CVS®, CE, Saudi Arabia*

Low user satisfaction results in low returns on real estate investments. Attention to human factors will be the most important future milestone



for real estate investment. So, how do we effectively pay attention to the human factor?

Caring for human factors in Real-estate projects requires conducting a Project Program before designing the project. This project program must be associated with a Value Management Study to be effective.

Another Value Management Study that creatively refers to the previously determined Project Program is often conducted to optimize the project's design.

So, a great idea would be to merge Value Management Study with Project Programming Study (PP+VM) as one highly effective integrated Study that will achieve the following goals:

1. Reducing the effort of conducting each of the two studies separately, reaching high-value design, construction, and operation outputs, as well as obtaining many other added value from combining them ( $1 + 1 = 3$ ).
2. Achieve synergy between the two methodologies that are proven globally to study the influences on the project and accurately describe the functional requirements, then raise the value of the design by providing creative solutions that better achieve the investment objectives.
3. The possibility of focusing on taking care of the human factor while at the same time achieving flexibility in real estate products and making them more attractive.

**Keywords:** value management, project programming, human factor, and real-estate investments

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## Function analysis of task management tools

*Ariella Janka Tarjáni, Ph.D. Student, CVS®, Hungary*

*Noémi Kalló, Vice Rector, Budapest Business University, Hungary*

Task management is a crucial non-technical skill on many fields of knowledge work. However, knowledge workers receive little help from academic research for perfecting their task management process. They use several different tools for managing their tasks like lists, post-it notes, calendars, whiteboards and mobile applications. This paper presents the result of a function analysis of such task management tools. A total of 342 functions were collected through literature review, and group creativity techniques. We created a function model and defined a critical path. Based on the model we advise developers of such tools to compare their provided service and the users' preference and distinguish between their core and support features accordingly. We also recommend users to look for both the expected features of modern task managers and the ones increasing their own satisfaction like options for individualization.

**Keywords:** task management, function analysis, software development

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## Value Management and Decision: Guide for decision-makers to self-assess the systemic relevance of their projects

*Djemil Chafai, Former General Secretary of AFAV, France*

The think tank “PDR-TP” of Project and Value Management Experts, which name can be translated by “For a responsible decision-making

in every project” has undertaken since 2023 the task of producing a self-assessing guide of the systemic relevance of a project for decision makers. Any project, be it individual or collective, dealing with the development or the evolution of a physical product or a service or an organisation impacts a territory and its direct and indirect environment. So, every individual decider has at his hands decisions that may significantly influence these impacts. These people benefit generally of a sufficient level of information and seems more motivated than their organizations. It is therefore the right time to help them go to a systemic level of thinking, which means introduce them to Value Management way of thinking. Starting from their comprehensive experience of project management and risk avoidance, PDR-TP team has identified a set of often missed albeit critical points that regularly induce wrong decisions from a VM point of view. These points are reunited in eight chapters. For each item, operational criteria have been identified, as the existence or absence of a specific document or process in the analysed project. The decision-maker is invited to self-evaluate the maturity of his/her management in this regard, using a set of colours inspired by circulation lights.

**Keywords:** Value Management, PDR-TP

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## Supporting value analysis with the latest technological solutions in financial analysis

*Zsuzsanna Széles, Dr. habil, University of Sopron, VMA, Hungary*

Project appraisal can also be called investment appraisal or capital budgeting. Projects involve making capital outlays in the hope of adding extra “value” in the future. We four main techniques at the

project (investment) appraisal and it is hard work to calculate them. The discounted cash flow techniques can give a better result because they calculate with the time value of the money. These are as follows Net present Value, the Internal Rate of return, Profitability Index and Discounted Payback Period. In my presentation, I presented the most frequently used investment economic indexes, supported by examples. These indicators can be easily calculated using AI, today Chat GPT is able to calculate the indicators with high accuracy. This is a great advantage when performing calculations, but we must remember that investment economics calculations require caution. AI can perform simpler calculations, but it cannot handle more complex problems. This requires the capital and practical knowledge of the specialist. In the future, the possibilities of its use will certainly expand, and this will be a great help for specialists and users, but let's not forget that 'artificial intelligence' is not human. Humans will always be needed to control the work of artificial intelligence in the background.

**Keywords:** artificial intelligent, cost, financial analysis,  
internal rate of return, net present value,  
profitability index, value management

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## Challenges of cost transparency: Why do so many companies struggle with their costs?

*Marc Pauwels, Dr. Ing., TVM, CVS®, FSAVE, Germany*

Many companies struggle with manufacturing costs that are too high or margins that are too low. However, the subject of this lecture is the lack of transparency in manufacturing costs. In projects for product optimization

or product development, the challenges concerning cost are:

- R&D has no access to the costs at all,
- If they do, manufacturing costs often only exist as a list of all individual components,
- manufacturing costs are not up-to-date.

In addition to the basics of cost accounting, this presentation is intended to provide the solution to many of the challenges and thus help companies to get costs under control.

**Keywords:** cost transparency, VA/VE projects on products

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## Value Methodology and Artificial Intelligence: Driving Innovation and Efficiency

*Marc Pauwels, Dr. Ing., TVM, CVS®, FSAVE, Germany*

The presentation explores the integration of Value Methodology (VM) and Artificial Intelligence (AI) to optimize product development. VM provides a systematic approach to maximizing product value by analyzing functions and costs. Through AI, complex datasets can be analyzed, and optimization potentials identified more rapidly, enabling more precise evaluation of design options and enhancing the innovation process. The presentation shows efficiency gains through AI-driven analysis but also highlights its limitations: while AI excels in recognizing data patterns, it faces challenges in making creative, intuitive decisions. Thus, the human factor remains crucial in the decision-making process.

**Keywords:** value methodology, AI, innovation, efficiency

## Research on consulting and consultants' clients needs in Central Eastern European countries – Cases of Hungary and Romania

*Zsuzsanna Szeiner, Dr., VMA, Slovakia*

*Prof. József Poór, DSc. Research Professor,*

*MATE University, Hungary*

*Kinga Kerekes, Associate Professor, Babes-Bolyai University,  
Clu, Romania*

For an extended period, the consulting industry experienced consistent and robust growth, with double-digit expansion being a frequent occurrence. Notably, even during periods of economic downturn or stagnation, consultants often continued to thrive. However, the 2008–2009 financial crisis had a significant impact on the sector, disrupting its previously uninterrupted trajectory. Today, consulting remains one of the most dynamically evolving industries, playing a pivotal role in both organizational and economic spheres by contributing to the success of businesses and institutions. While extensive research and numerous publications have explored the field of consulting and its key players, there is considerably less information available regarding consulting clients and their experiences with consulting services. In response to this gap, our research team—comprising scholars from various universities in Central and Eastern Europe (CEE) and the United States — has launched a study to examine shifts in consulting client needs. During the current phase of our research, we conducted an online survey and in-depth interviews to assess how companies and organizations perceive the role and value of management consultants. Our findings from Hungary and Romania underscore that consulting is fundamentally a trust-based service, where

personal relationships and direct positive experiences are critical in the selection process. To ensure consistency in our approach, we employed a one-respondent survey methodology, gathering insights from a single representative per organization. In our presentation, we first provided an overview of the core concepts of consulting, followed by an analysis of the industry's key developmental trends and its current market landscape. We then presented the principal findings of our empirical research. Notably, our study revealed that consulting services are perceived more favorably than anticipated in both Hungary and Romania. While organizations in both countries recognize the value of external expertise, their priorities differ: Romanian companies emphasize innovative approaches, whereas Hungarian firms place greater importance on the extensive experience of consultants. Additionally, nearly two-thirds of the surveyed organizations in both countries have already engaged consulting services. Our research further indicates that one-fifth of the examined companies in Hungary and Romania currently do not utilize consulting services. However, among these, one-third plan to do so within the next two years. Furthermore, the majority of respondents expressed a willingness to collaborate with consultants in the future. While our study is not representative of the entire market, it provides valuable insights that refine existing knowledge on the subject. A distinctive feature of our research is the inclusion of case descriptions, developed from interviews, which offer a deeper understanding of individual organizations' experiences with consulting services.

**Keywords:** consulting, hungary, romania, client needs

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## Revealing Optimal Value: Navigating the 9 Essential Questions for Purposeful Investments

*Hein De Jong, TVM, The Netherlands*

Revealing “Optimal Value” explores the concepts of value in purposeful investments, harmonizing resources with core objectives. Project owners, whether in corporate or nonprofit sectors, manage the creation of value with diverse experts. The nine essential questions illuminate this path, urging to delve into intention, alternatives, risks, and stakeholder points of view. Tailoring these questions to projects will empower innovation and echoing Socratic reasoning’s depth. This method, a cornerstone of value engineering, navigates uncertainties and enhances bright thinking, clarity of the purposes, and creativity. As we traverse this landscape, our quest is to nurture optimal value (and being patient to stay in that state-of-mind), guided by purpose and the collective pursuit of meaningful impact.

**Keywords:** good question is half the answer, a good question is great for inspiration, optimal value, value methods

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## WEGER Air Handling Units Investment Project Preparation with VE

*Róbert Gyenes, COO, Engineer, Hungary*

The paper introduces the WEGER air handling unit investment project, emphasizing value planning as a strategic approach. The company



specializes in custom-made air handling units, tailored to industries such as healthcare, pharmaceuticals, marine environments, infrastructure, and food processing. WEGER is preparing for a capacity expansion in Hungary, currently in the planning phase, aiming for efficient and sustainable production. Beyond a large-scale milling facility in Mecca, Saudi Arabia, with a capacity of 600,000 m<sup>3</sup>/h air volume, WEGER is planning a 10,000 m<sup>2</sup> greenfield investment, integrating solar energy and battery storage to enable sustainable production. The presentation highlights that thorough pre-design can significantly shorten the overall planning process, improving efficiency and return on investment. By focusing on modular, knowledge-based product development and patented innovations, Weger aims to maintain its high-quality standards while expanding its market presence.

**Keywords:** air handling unit, greenfield, investment, quality

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## Sustainability - Value Methodology

*Andrea Keszi-Szeremlei, College Professor University of Dunaújváros, VMA, Hungary*

*Ferenc Nádasdi, Professor Emeritus, University of Dunaújváros, FSAVE, CVS®-Life, PVM, Hungary*

The implementation and continuous development of “Sustainability” requires the creation of a new framework. The development of current industrial technologies can be proposed as a new task, especially according to the requirements of “Sustainability”. In recent decades, a revolution has taken place in the field of management, and new

management methods have emerged, which basically use intellectual knowledge and have become a useful tool in the field of innovation. Among these methods, Value Analysis is presented in the development of an industrial technology.

**Keywords:** sustainability, value analysis, value methodology

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## Evaluating the Value Dimensions of Gender Differences in Problematic Smartphone Use and Depression: A Systematic Review

*Neha Pirwani*, Ph.D. Student, Pakistan

*Aleksandar Vujić*, Ph.D. Student, Serbia

*Attila Szabó*, Prof. Academic, Hungary

This review examines gender differences in the relationship between problematic smartphone use (PSU) and depression, considering the concept of “value” in smartphone engagement. Utilitarian use, such as for work or study, adds value by enhancing productivity, whereas hedonic use, including social networking and gaming, often fosters addiction and depression. Although both genders predominantly engaged in hedonic smartphone use, this behavior was linked to increased depression across studies. Sixteen studies from five databases were analyzed, focusing on global gender-specific PSU impacts. Women were generally more vulnerable to PSU-related depression, often due to social networking, while men showed susceptibility through gaming. Highlighting the shared hedonic use among genders, this review calls for further research into value-oriented strategies to mitigate PSU’s mental health impacts.

**Keywords:** behavioral addiction, biological sex, value, mental health, mobile phone, smartphone, depression, psychology

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## Dynamic knowledge transfer, as a new possibility of the educational added value creation

*Prof. György Molnár, Óbuda University, Hungary*

*Beáta Orosz, Teacher of Economics, Hungary*

According to the rapid technological development, new skills and educational methods are required nowadays, even in the field of education. Dynamic knowledge transfer is a new possibility which can help teachers to understand how to adapt the theoretical models, artificial intelligence and ICT tools to their daily work, add and create values to their students during the classes.

**Keywords:** dynamic knowledge transfer, education, ICT, AI, added value, VET

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## Using the CourseGarden Platform in Value Analysis Education

*Károly Szóka, Dr., Associate Professor, VMA,  
University of Sopron, Hungary  
Adrienn Horváth, Assistant Professor, University of Sopron,  
Hungary*

This paper presents the instruction of value analysis at the University of Sopron, with a particular focus on the development of this teaching method. CourseGarden is a sophisticated learning support platform that integrates traditional teaching methods with online learning. It accommodates multiple users, diverse content, and various types of interactions, providing an effective and personalized learning experience. The platform employs instructional molecules to suggest learning paths, which students can deviate from as needed, allowing them to learn at their own pace from home. Instructors have visibility into students' progress along these paths. Additionally, the platform enables continuous assessment of student performance through various metrics and analytics, facilitating timely and constructive feedback from instructors. Its online capabilities support both synchronous and asynchronous learning, catering to different learning styles and schedules. The CourseGarden platform offers numerous benefits for project-based courses at the university level. By supporting active learning, collaboration, accessibility, real-world relevance, technology integration, assessment, creativity, learner autonomy, interdisciplinary learning, and scalability, CourseGarden enhances the educational experience for students.

**Keywords:** CourseGarden, education, value analysis

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## Science Park Business Process Improvement with Value Methodology

*Marianna Tünde Tarjániné Illés, CVS®, PVM, TVM, CMC® Hungary  
Kornélia Zaráandné Vámosi, Hungary*

A science park (also called a “university research park”, “technology park”, “technopark”, “technopolis”, “technopole”, or a “science and technology park”) is defined as being a property-based development that accommodates and fosters the growth of tenant firms and that are affiliated with a university (or government and private research bodies) based on proximity, ownership, and/or governance. This is so that knowledge can be shared, innovation promoted, technology transferred, and research outcomes progressed to viable commercial products. A development team was formed to carry out the work of “Planning the operation of the University Science Park with value analysis” by bringing together the largest stakeholders of the university science park. The goals set at the beginning of the work were met, the functional design was carried out, the assignment of individual functions to organizational units was implemented. Based on the function analysis, the inhibiting factors and operational functions were determined. The project was implemented.

**Keywords:** value methodology, value management, science park, business process, function analysis

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## Applications of Digital Transformation During Teaching of Value Analysis

*Istvan Tarjáni, FSAVE, CVS®, PVM, TVM, CMC®, Hungary*  
*Marietta Kellerné Altorjay, executive director, Hungary*

Digital transformation is becoming increasingly important in the education and training of value professionals. The tools of digital transformation in the educational environment of value analysis are explored in the courses called VMF1, VMF2, coordinated by the global organization SAVE International, as well as in the courses VMO, VM1, VM2, VM3 conducted within the framework of the VFETCS (Value for Europe Training and Certification System). Based on the information collected, the acceptance and satisfaction data regarding the use of the tools between the European and North American training and certification systems are analyzed and compared. In addition, the effectiveness of the education and the experiences of the acceptance of the tools by the students are also examined. The usability of the results and conclusions to be explored is evident in the knowledge transfer of courses conducted in the educational environment of value analysis, as well as in the field of student and instructor skill development and attitude influence, which can help in setting future quality guidelines.

**Keywords:** value methodology, value management,  
value creation, knowledge transfer, modern tools