

Summaries • of the papers published in this special issue

This Special Issue is compiled from the papers of the 25th HTE Infokom 2023, the Infocommunications Networks and Application Conference, organized by the Scientific Association for Infocommunications (HTE).

Market consolidation and cooperation for structural improvement of economies of scale

Keywords: economies of scale, market consolidation, competition, consumer price, social welfare

The EU national level telecommunication markets are fragmented, therefore economies of scale, asset utilisation and cost efficiency aspects are limited. Telco operators' return on investments lag behind on cost of capital, therefore there is a risk not to meet EU Digital Decade 2030 target to reach full population coverage in mobile and fixed broadband internet. Operators therefore request market consolidations (Mergers & Acquisitions) from regulatory authorities, who identify a risk in potential decrease of competition, differentiation and innovation, therefore shortening social welfare.

The research question seeks an answer what are the potential impacts of market consolidation for competition, social welfare in telecommunication markets. The research methodology built on secondary analysis of international actual data based empirical quantitative researches and focused on difference of consumer prices, operators' profitability and investments, as well as service qualities between more and less consolidated markets.

Drone-assisted radio frequency measurements

Keywords: UAV, UAS, spectrum monitoring, RF measurements, broadcast, interference investigation

In the 21st century, radio communication plays a key role in our everyday lives. In order for this limited national resource to be usable for everyone, it is crucial to regulate and supervise the frequency bands and the operating radio services, with continuous spectrum monitoring activities. Fortunately, alongside the advancement of communication technologies, measurement techniques are also evolving continuously, allowing for the reconsideration and development of existing measurement procedures and methods.

RF measurements conducted with drones open up new possibilities in the monitoring of wireless communication systems, the detection and mitigation of RF interference, and also in the field of supplying measurement data to partners.

What are we afraid of if not the wolf?

Keywords: youth, future perspectives, frustration, uncertainty, artificial intelligence

In today's information-noisy society, there are many things to be afraid of, whether perceived or real. This writing draws on recent international and domestic research to show what young people think about their future. Are they frustrated by technological progress, do they fear the rise of artificial intelligence or robots taking their jobs?

Why is the 4th industrial revolution different from the previous ones?

Keywords: demographic change, aging, social innovation, adult education, digital competence

Why do we feel that the social costs of the current industrial revolution are greater than expected? How are ageing

societies affecting today's economy? Why does education, adult training, and the new skills and abilities of digital competence have a prominent role nowadays? How could the conditions for technological development dominated by a society be created, as opposed to the currently prevailing technology-driven society? Part of the answers will be presented by the Kecskemét programme on ageing and the Digital Knowledge Centre, which offers experiential education sessions. It is our firm position that the adverse effects of an aging society and the digital transformation can only be protected by investing in human capital.

DaTaOnX – Distributed Trust for Open DATA eXchange

Keywords: Blockchain, Hyperledger, data authentication, quantum resistance, data-based decision, data market, IoT, supply chain, AI transparency, Ai ACT, eIDAS 2.0, eID

We are building companies and organizations that rely on data-driven operations and decisions, while trust in digital data has significantly weakened, resulting in only about 20% of executives daring to make important decisions based on data. With the widespread adoption of AI (Artificial Intelligence) systems, establishing the verifiability of data credibility and manipulation resistance becomes increasingly crucial and unavoidable across industries of all sizes. Failure to do so can easily lead to internal and external credibility crises, potentially undermining the functioning of our companies. In this article, we introduce the DaTaOnX data authentication solution, an interoperable system built on blockchain technology capable of verifying the immutability of data, documents, media files, and software code from their production or storage location. As a backend solution, it can also establish data credibility and transparency within existing IT systems along the entire data supply chain and concerning AI solutions. Establishing trust in data in the digital realm is one of the greatest challenges that every IT and company leader must face, regardless of industry and organization size!

The 75 years of

Scientific Association for Infocommunications (HTE)

Keywords: HTE, infocommunications

The article presents the 75-year history of HTE from its establishment until 2024. The author made an attempt to divide the history of HTE into eras and shows in the article how the continuously renewing professional organization managed to survive and even remain successful despite the intense changes of 75 years. Continuous adaptation to economic conditions and changes in the domestic telecommunications industry always brought new solutions to the life of the Association, the only solid direction was maintaining professionalism above all else. This can help HTE to continue to be successful and celebrate its centenary.

Selection of abstracts written by the winners of HTE MSc and BSc thesis competition

A special section of this issue contains one-page abstracts written by winners of HTE awards for best diploma theses in 2023.