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Introduction: The importance of Innovation and Sustainability

Cristian Mustata

Chief Editor
University POLITEHNICA of Bucharest

We live in a world in which we often reach or exceed the limits of sustainable growth. The amount of waste our societies produce is too big, and the speed of extracting resources is sometimes higher than the ability of nature to regenerate those resources.

Thus qualitative growth through innovation is essential in all areas of human activity, a challenge that is also addressed by this conference were authors from all over the world can present the state of innovation in their field of activity. Thus many types of innovations also bring sustainable implications.

On the other way, innovations that address the environmental or the social pillar of sustainability together with the economical pillar are more needed than ever if we intend to have a world of tomorrow worth living in, with a beautiful natural environment and with social structures that enable human beings to live a fulfilled life.

From this point of view I am grateful to all our authors, which brought their thoughts about innovations and sustainability in the present volume of the conference.

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Innovations in Teaching Sound Design

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ABSTRACT

Starting from a brief history of sound technology, the article comprises the transformation of sound not only in the film industry but also at the National University of Theatre and Film, Bucharest. The technological advancements lead also to a transformation of the teaching methods, including different approaches that best suit the needs of the current generation.

KEYWORDS: sound design, film, innovation, technology, film university

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THE LANGUAGE CHALLENGES IN TECHNICAL COMMUNICATION

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ABSTRACT

Technical communication is a specific form of professional communication and the use of language is connected to the success of the companies with technical products as well as in technical academic fields. Scientists, engineers, employees and customers of organisations with technical background engage daily in technical communication, independent of the fact that they are aware of that or not and the verbal or written results of this forms of technical communication might have a strong positive or negative impact on the results of their institutions.

The paper addresses these challenges and the complexity connected to the use of language in technical communication and presents them in their context with different innovative solutions.

KEYWORDS: technical communication, language, communication strategy.

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A bivariate function for roughness

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ABSTRACT

The usual way to evaluate some quality parameters in a technology is the estimation of the univariate characteristics and calculus their dependencies for materials, but are also important a overall description at least for some of the attributes. The extended use of normal distributions, especially in quality evolution (statistical process control, capability of manufacturing equipments), made interesting to apply it for manufactured surfaces characteristics. The idea of the paper is to present a bivariate function for the roughness parameters with their dependences. The data set, with values of the arithmetical mean deviation Ra and the range Rz, were bivariate processed with the change of variables model, with numerical solutions. The results should be practical in the examination of the manufacturing quality.

KEYWORDS: roughness indexes relationship, copula

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GREEN SMART HOUSES

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ABSTRACT

In this paper, I have tried to provide a new and clearly explained approach on the 21st century sustainable architecture, as well as examples regarding one of the solutions for the planet's most pressing issue at the moment: Global Warming. Eco-Houses represented in America approximately 17% of all housing types as of 2017, this compared to the 2% in 2005 [1]. Even with this raise in numbers, the misinformed population still assumes that eco-homes are incredibly expensive, hard to maintain and associates them with some kind of prehistoric living style with close-to-none amenities.

Not only is the great price of the houses a myth, but also the quality of life in one of them is a state-of-the-art experience sponsored by a perfect mixture between sustainable technology and Mother Nature's gifts, such as water, air and wind.

In what follows, the graphs and 3D-Designs will help me better clarify the benefits – for both the user and the environment – of these splendid pieces of art.

KEYWORDS: sustainable, house, eco, smart

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REINVENTING ORGANISATIONS

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ABSTRACT

This is a paper about how organisations developed over time and the advantages and disadvantages each form has, starting from the ancient tribal forms to modern additions. Also we are exploring some advantages of each type of organisation.

KEYWORDS: organisation, evolution, history, choice

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Innovative teaching methods.
Preparing the next generation of young lecturers.
Case study – Film Faculty, sound department

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ABSTRACT

During the class project "Teacher for One Day", students from the sound department, Bachelor studies, at the Film Faculty Bucharest, slip into the role of young lecturers. The article analyses the results from two surveys, before and after the experience.

KEYWORDS: education, teaching, academic career, sound, university

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Industrial Data Science – From Raw Data to Knowledge Intelligence

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ABSTRACT

In the light of rapid technological enhancements and digitalization, complex process-related, technical and organizational interdependencies and correlations in production and logistics can no longer be grasped and resolved by domain experts exclusively. Modern data science methods and technologies, e.g. advanced machine learning, are needed to overcome the increasing complexity, to identify new potentials and ultimately to drive business values. From theoretical perspective, huge amounts of data have to be transformed into concrete conclusions and recommendations for action and decisions. However, in contrast to other business sectors, such as financial services, production industries, especially SMEs, suffer the lack of data quality and availability, resources for extensive data mining processes as well as data science competencies. Therefore, industrial data science (IDS) projects should necessarily focus on how to generate new data with the help of industrial IoT (IIoT) and how to build simple but usable and accurate data models in cooperation with domain experts e.g. for predictive maintenance or lead time forecasting. Furthermore, SMEs gain benefits from new approaches such as automated simulation modeling and industrial IoT in (intra-)logistics systems. Finally yet importantly, achieving intelligent functions in industrial value chain is explored by identifying challenges and potential directions toward integration of artificial intelligence (AI) and industrial processes.

KEYWORDS: Data Science, Production and Logistics Management, Data Mining, Machine Learning, Artificial Intelligence

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TECHNICAL COMMUNICATION AS A PROFESSIONAL LANGUAGE

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ABSTRACT

Professional languages evolve from native languages and sometimes come to influence their root languages on the long term, by introducing specific professional vocabulary into their root language. Technical communication is no exception to that and the paper addresses the purposes of technical communication and their evolution within their context: engineering and engineering sciences.

KEYWORDS: technical communication, professional language, communication strategy.

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CHALLENGES AND CHANCES OF SELF-MANAGED ORGANIZATIONS IN ROMANIA

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ABSTRACT

Self-managed organisations are one of the most modern ways for organisational success. But they require certain conditions in order to be successful. The paper analyses this model and the particular challenges and chances such model would have when implemented in Romania.

KEYWORDS: self-management, team, progress, organization

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